

Appendix E

Revised Ecological Impact Assessment

**Section 12A Planning Application
for Proposed Innovation and
Technology Hub at Various Lots in
D.D. 82 and D.D. 86 and Adjoining
Government Land, Man Kam To,
New Territories**

Ecological Impact Assessment

Final
January 2025



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Appendix A

Approved Man Kam To Outline Zoning Plan (OZP) No. S/NE-MKT/4

Appendix B

Master Layout Plan

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Habitat Map

Appendix C-2

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List of flora recorded by habitat during field surveys

Appendix D

Avoidance and Compensation for Woodland Loss

Appendix E

Landscape Master Plan

1 Introduction

1.1.1.1 This Ecological Impact Assessment (EcolA) was prepared in support of a Section 12A Planning Application for the Proposed Innovation and Technology Hub (I&T Hub) at Various Lots in D.D.82 and D.D. 86 and Adjoining Government Land, Man Kam To, New Territories (hereafter called “the Project”).

1.1.1.2 The Application Site (AS), with a site area of about 12.6ha, is located at Man Kam To in the North District. It is on a gentle sloping from site level of about 6mPD near Ping Yuen River to 25mPD near the eastern foot of Lo Shue Ling. In accordance with the Approved Man Kam To Outline Zoning Plan (OZP) No. S/NE-MKT/4, the current land use zonings of the AS include “Agriculture” (“AGR”), “Green Belt” (“GB”) and “Government, Institution or Community” (“G/IC”).

1.1.1.3 This EcolA was conducted to evaluate the potential ecological impacts on the proposed development of the S12A planning application for the Project described above. As part of a S12A planning application, for sites with ecological value an EcolA should be conducted to:

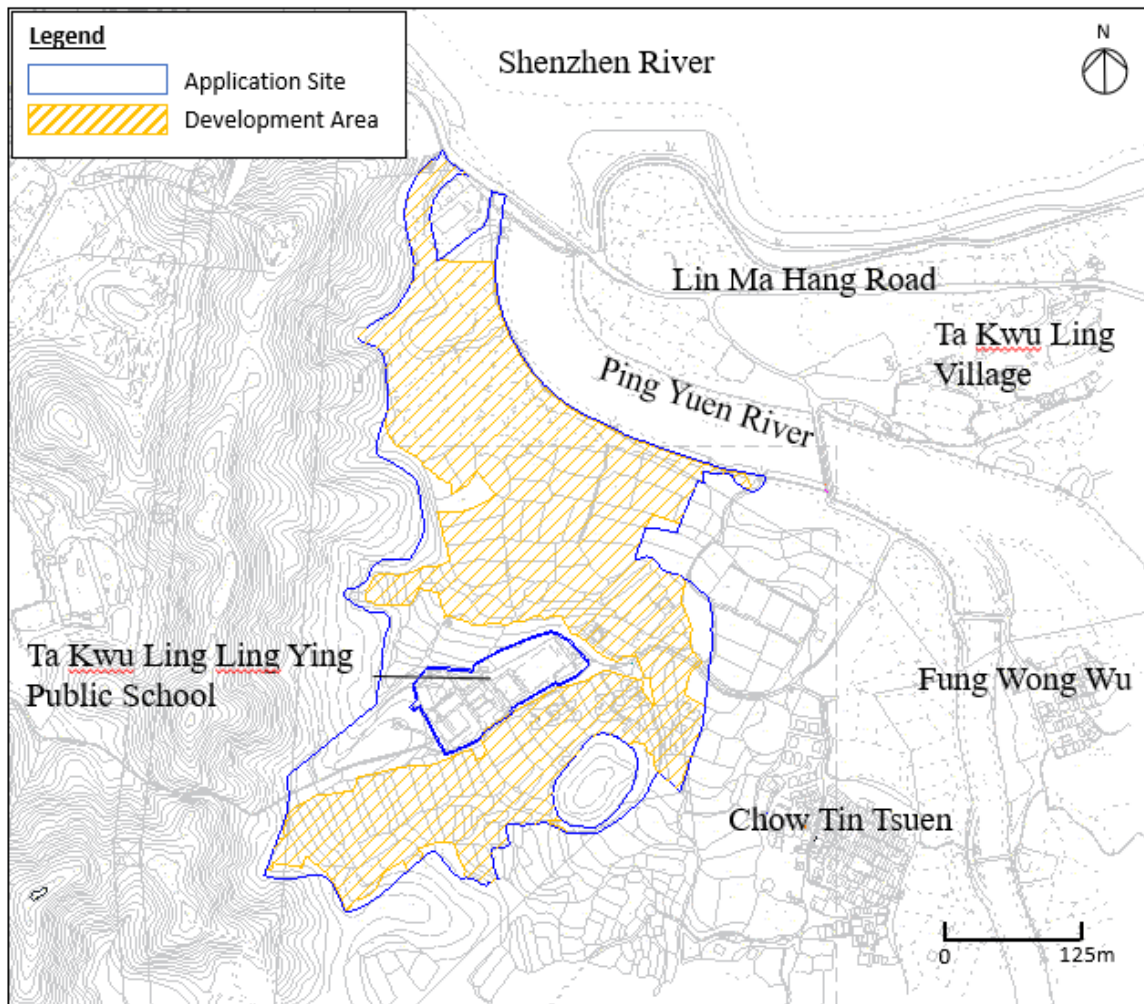
- Evaluate potential direct and indirect impacts associated with the Project on local ecology during construction and operation phases of the Project.
- Outline measures to mitigate any adverse impacts arising from the construction and operation of the Project.
- After the implementation of mitigation measures, identify any significant residual impact.
- Ensure compliance with environmental regulations and sustainable development practices.

2 Site Location and Building Design

2.1 Application Site and Description

2.1.1.1 The AS is located to the south of Lin Ma Hang Road. Currently, the AS is largely vacant and largely comprises village area and inactive farmland and covers a portion of the access road from Lin Ma Hang Road. Ta Ku Ling Ling Ying Public School is sandwiched by the AS. Some existing residential premises are located adjacent to Ta Ku Ling Ling Ying Public School within the AS, and they will be cleared for the proposed development. Further to the east is Chow Tin Tsuen. The location of the AS is illustrated in **Figure 2.1**. Not all the AS will be developed, only the area indicated as “Development Area” in **Figure 2.1** will be developed.

Figure 2.1: Site location



2.1.1.2 In accordance with the Approved Man Kam To Outline Zoning Plan (OZP) No. S/NE-MKT/4 as attached in **Appendix A**, the AS is currently zoned as “Agriculture” (“AGR”), “Green Belt” (“GB”) and “Government, Institution or Community” (“G/IC”). The areas in the vicinity are mainly zoned as “Recreation” (“REC”), “Village Type Development” (“V”), “Government, Institution or Community” (“G/IC”) and “Green Belt” (“GB”).

- 2.1.1.3** For the purposes of this EcoIA, an “Assessment Area” has been defined which constitutes the AS and the area within 500m of the AS but excluding the land area across the border in Mainland China. The AS is larger than the development area. In addition, a “500m Assessment Area” is used to define that part of the Assessment Area outside the AS.
- 2.1.1.4** Much of the AS comprises abandoned farmland in early-stage succession that largely constitutes rank grassy and herbaceous vegetation. It does not have significant areas of grass that would allow it to be designated as grassland, nor is succession sufficiently advanced that it could be termed grassland/shrubland.
- 2.1.1.5** Aside from village/developed area, the only other habitat of significant size is woodland, which is distributed largely along the western boundary of the AS, but also around a wooded knoll designated as Green Belt (“GB”) in the south. Much of this woodland is of ecological value due to linkage with the larger area of woodland in the Assessment Area immediately west of the AS. Nonetheless, that “GB” in the south has been excluded from the AS.
- 2.1.1.6** Channelised watercourse in the form of the Ping Yuen River and Shenzhen River constitutes 12.68 ha of the Assessment Area. Some of this lies immediately adjacent to the AS. As Ping Yuen River is channelised, its banks have little ecological value but the channel bottom is used by small numbers of foraging large waterbirds.
- 2.1.1.7** Elsewhere in the Assessment Area there are substantial areas of village/developed area, abandoned farmland as described above and grassland. The latter is located on hills in the southwest portion of the Assessment Area. Shrubland areas are generally at the margins of the Assessment Area, though a small area intrudes into the southwest corner of the AS. A small area of active farmland is largely dry, with only one wet field.

2.2 Building Design

- 2.2.1.1** The proposed development consists of three towers of 16 storeys forming an R&D Centre and three towers of 12 storeys as a Data Centre to nurture the development of I&T industry. One six-storey Commercial Centre and a one-storey kindergarten on the ground floor of ancillary dormitories, will support the daily needs of the working and living population. There are three 31-32 storeys (including the ground-floor lobby) ancillary dormitories towers providing a total of about 1,392 units. For the remaining development, there are five residential towers with a total of about 2,320 flats. A four-storey standalone clubhouse is proposed to be situated close to the ancillary dormitories and residential towers. A Transport Interchange (TI) is planned at the ground level of R&D Centre on the northern portion of the AS. Ancillary parking spaces are to be provided at the basement level. The tentative population intake year of the whole development is Year 2028.

2.2.1.2 The latest Master Layout Plan (MLP) and typical floor plans are illustrated in **Appendix B**. The key development parameters for the AS are given in **Table 2.1**. The detailed layout plans and schematic section drawings are provided in the Planning Statement.

Table 2.1: Key development parameters for the proposed development

		Parameters
Application Site Area		About 12.6ha
Building Height		
<i>R&D Centre</i>	Building Height	83m
	mPD	90mPD
	No. of Storeys ^[1]	16
<i>Data Centre</i>	Building Height	73m
	mPD	80mPD
	No. of Storeys ^[1]	12
<i>Commercial Centre</i>	Building Height	30m
	mPD	37mPD
	No. of Storeys ^[1]	6
<i>Ancillary Dormitories</i>	Building Height	~99-102m
	mPD	110mPD
	No. of Storeys ^[2]	30-31
<i>Other Residential Uses</i>	Building Height	~99-105m
	mPD	120mPD
	No. of Storeys ^[2]	30-32
No. of Units		3,712
<i>Ancillary Dormitories</i>		1,392
<i>Other Residential uses</i>		2,320
Target Completion Year		2028

Notes:

[1] The no. of storeys excludes basement carparks.

[2] The no. of storeys excludes 1-storey lobby and basement carparks.

2.3 Interaction with Other Projects

2.3.1.1 There is no concurrent project within 500m from the boundary of the AS. Hence, no cumulative impacts are anticipated.

3 Relevant Legislation, Standards, Guidelines and Reports

3.1 Legislation, Standards and Guidelines

3.1.1.1 The relevant local legislation, standards and guidelines applicable to the present study for the assessment of ecological impact include the following. Each source of information is assigned a number that is used in the text as a reference.

- [1] Wild Animals Protection Ordinance (Cap. 170).
- [2] Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) and relevant annexes 8, 9, 11, 16, 17, 20 and 21 of the associated Technical Memorandum (EIAO-TM).
- [3] EIAO Guidance Note No. 6/2010 – Some Observations on Ecological Assessment from the Environmental Impact Assessment Ordinance Perspective.
- [4] EIAO Guidance Note No. 7/2010 – Ecological Baseline Survey for Ecological Assessment.
- [5] Hong Kong Biodiversity Strategy and Action Plan (2016-21).
- [6] Wild Animals Protection Ordinance (Cap. 170).
- [7] Hong Kong Biodiversity Strategy and Action Plan (2016-21).
- [8] List of State Key Protected Wild Animals (www.gov.cn/xinwen/2021-02/09/5586227/files/e007df5cdb364bcdbcb89d169047d6c5.pdf).
- [9] IUCN Red List (<https://www.iucnredlist.org/>).
- [10] Convention on International Trade in Endangered Species of Wild Fauna and Flora (“CITES”).
- [11] United Nations Convention on Biological Diversity.

3.2 Potentially Relevant Approved EIA Reports

3.2.1.1 Potentially relevant EIA reports relevant to the area comprise the following. Each source of information is assigned a number that is used in the text as a reference.

- [12] EIA 161/2008. Construction of a Secondary Boundary Fence and new sections of Primary Boundary Fence and Boundary Patrol Road.
- [13] EIA 189/2010. Regulation of Shenzhen River Stage IV.
- [14] EIA 190/2010. Liantang / Heung Yuen Wai Boundary Control Point and Associated Works.
- [15] EIA 213/2013. North East New Territories New Development Areas.
- [16] EIA 218/2013. Development of Organic Waste Treatment Facilities, Phase 2.
- [17] EIA 239/2016. Police Facilities in Kong Nga Po.

4 Literature Review

4.1 Habitats

4.1.1.1 The approved EIA study that is most relevant in terms of the Assessment Area of the current study is that for Stage IV of the Regulation of the Shenzhen River [12]. Figure 7.4c in the approved EIA report indicates that much of the land in the central and eastern part of the Assessment Area, including much of the AS, at the time (2008) comprised abandoned or active dry agricultural land. To the west of the AS was an area of secondary woodland and shrubby grassland. The village of Chow Tin Tsuen was the only significant developed area.

4.1.1.2 The approved EIA for construction of boundary fences and boundary road [11] indicates an area of wet agricultural land extending into the northern part of the AS for the current study.

4.1.1.3 The more recent Liantang / Heung Yuen Wai (HYW) Boundary Control Point EIA [13] in Sheet 3 of the habitat map indicates that much of the overlap between the two assessment areas still comprised abandoned agricultural land, as well as an area of freshwater marsh alongside the Ping Yuen River. However, the AS of the current project was not covered in this study.

4.1.1.4 The assessment areas of the remaining EIA reports referenced above [14, 15, 16] were reviewed but their extents did not cover the Assessment Area for the current Project.

4.2 Fauna and Flora Species of Conservation Importance

4.2.1.1 Fieldwork for Stage IV of the Regulation of the Shenzhen River (12) recorded only one Species of Conservation Importance (SCI) in the AS for the current study, a migrant Japanese Sparrowhawk at the edge of the wooded knoll in the south (though it should be noted this knoll is excluded from the AS). In addition, Besra and Common Buzzard were recorded over woodland to the west of the AS, while Asian Barred Owlet and Common Buzzard were also recorded to the west of the AS. In the Ping Yuen River channel Collared Crow, Chinese Pond Heron, Greater Painted-snipe and Grey Heron were recorded, while three species of raptor were recorded in the airspace over the channel: Greater Spotted Eagle, Bonelli's Eagle and Black Kite. Both the eagles have declined in Hong Kong in the interim (Carey 2023) and are probably now very rare in the area.

4.2.1.2 The HYW study recorded two SCI in wet agricultural land, the location of which lies in the Assessment Area of the current study: White-throated Kingfisher and Chinese Bullfrog. In the Ping Yuen River several waterbird SCI were recorded: Grey Heron, Little Egret, Eastern Cattle Egret, Chinese Pond Heron and White-throated Kingfisher.

- 4.2.1.3** The approved EIA for construction of boundary fences and boundary road (11) did not record any SCI in areas that overlap the current study.

- 4.2.1.4** There appear to be no records in the literature of flora of conservation importance in the Assessment Area of the current study.

5 Methodology

5.1 Survey Methodology

5.1.1.1 Ecological surveys were carried out in accordance with the requirements and recommendations provided in the Environmental Impact Assessment Ordinance Guidance Notes No. 7/2023 “Ecological Baseline Survey for Ecological Assessment” and No. 10/2023 “Methodologies for Terrestrial and Freshwater Ecological Baseline Survey”. Methods of assessment followed the requirements set out under Annexes 8 and 16 of the EIAO Technical Memorandum.

5.1.1.2 Field surveys were conducted over a 6-month period from June to November 2024, covering both wet and dry seasons. Transects are illustrated in **Appendix C-2**. The ecological survey programme is provided in **Table 5.1** below.

Table 5.1. Ecological Survey Programme (up to September 2024)

Ecological Field Survey	2024					
	Wet Season				Dry Season	
	June	July	August	September	October	November
Habitat and Vegetation		✓				
Terrestrial Mammal (Day + Night)	✓	✓	✓	✓	✓	✓
Bat (Night)	✓	✓	✓	✓	✓	✓
Avifauna (Day + Night)	✓	✓	✓	✓	✓	✓
Herpetofauna (Day + Night)	✓	✓	✓	✓	✓	✓
Butterfly (Day)	✓	✓	✓	✓	✓	✓
Odonata (Day)	✓	✓	✓	✓	✓	✓
Firefly (Night)	✓	✓	✓	✓	✓	✓
Freshwater Fauna (Day + Night)	✓		✓		✓	

✓ = Completed; ◎ = scheduled

5.2 Habitats and Vegetation

5.2.1.1 A habitat map was prepared to reflect current site conditions of the Assessment Area based on desktop review of aerial photographs taken in late 2023 and the digital topographical map produced by the Lands Department. Ground-truthing surveys were carried in the field to verify the draft habitat map. Habitats were classified based on the environmental conditions and vegetation communities.

5.2.1.2 Vegetation surveys were conducted once in the wet season along transects set across representative patches of each habitat type present in the Assessment Area. Relative

abundance and dominant plant species in each habitat were recorded. Locations of floral SCI were recorded in the field and later marked onto the habitat map.

5.3 Terrestrial Mammals

5.3.1.1 Other than relying on direct observation, the surveys for terrestrial mammals also included active searching for signs of mammalian presence (including but not limited to footprints and droppings) as the majority of mammal species in Hong Kong occur at low densities. Species were identified and quantified, and notable behaviour such as feeding, roosting, and breeding would be recorded. Night-time surveys were also conducted to supplement the findings from day-time surveys. Walk-through surveys were conducted monthly along the transects. Animal traps were not used, nor were camera traps as the area was not considered secure.

5.4 Bats

5.4.1.1 The abundance of bats was noted by visual observation during faunal surveys carried out at dusk with a view to carrying out more detailed study should a significant number be observed. In the event, very few bats were seen.

5.5 Avifauna

5.5.1.1 Surveys for birds were conducted monthly using transect count method with the aid of a pair of binoculars (of magnification of no less than 8x) in early morning, when the majority of birds are most active. Species were detected either by direct sighting or via their vocalisations. Species were identified and quantified, and notable behaviour such as feeding, roosting, and any breeding was recorded. Night-time surveys were also conducted to supplement the findings from day-time surveys.

5.5.1.2 As the proposed development includes buildings of up to 32 storeys, flight lines were potentially an issue. However, given the lack of large wetlands to the east or known roost sites for large waterbirds and there being no mention of such a phenomenon in the literature, it appeared this was unlikely. Consequently, it was decided that if early morning observations indicated a significant flight line for species that forage or roost in flocks, then dedicated flight-line surveys would be carried out. In the event, no flight lines were seen and it was thus considered unnecessary to do dedicated flight line surveys.

5.6 Herpetofauna

5.6.1.1 Herpetofauna surveys were conducted monthly along the set transects. Both day-time and night-time surveys were conducted owing to the nocturnal behaviour of most herpetofauna species. Species were detected either by direct sighting or by their

vocalisations. During the surveys, potential habitats for amphibians and reptiles were actively searched, with possible microhabitats (e.g., larger stones, crevices or rotten logs) examined or deliberately uncovered to detect the presence of amphibians and reptiles. To detect amphibian breeding activities, active searching for eggs and tadpoles of amphibians in aquatic habitats was conducted. Species were identified and quantified, and notable behaviour such as breeding was recorded.

5.7 Butterflies and Odonata

5.7.1.1 Transect surveys for butterflies and odonates were conducted monthly along the transects. Surveys were conducted during the day and under suitable weather, avoiding overcast or rainy conditions when butterflies and odonates are less active. Species were detected by direct sighting. For butterflies, active searching for larvae and pupae on suitable larval foodplant species within 5m from the transects was also conducted. For odonates, special attention was paid to aquatic habitats such as watercourses. Species were identified and quantified, and notable behaviour such as breeding was recorded.

5.8 Fireflies

5.8.1.1 Fireflies were surveyed monthly using the transect count method, with species detected by direct observation. The surveys commenced immediately after sunset and lasted for approximately 2 hours. The surveys were carried out under suitable weather conditions (i.e., without rain or strong wind). All fireflies observed, including adults and larvae, were identified to species level and quantified.

5.9 Freshwater Fauna

5.9.1.1 Freshwater community surveys were conducted once every two months during the study period. Both day-time and night-time surveys were conducted at designated sampling locations. Aquatic fauna, including freshwater macro-invertebrates and fish, were surveyed by direct observation (with the aid of a pair of binoculars of magnification of no less than 8x) and active searching by hand-nets, as well as standard field sampling techniques (such as kick-sampling) where appropriate.

6 Ecological Survey Results

6.1 Overview

6.1.1.1 **Appendix C-1** provides a habitat map, while locations of non-avian SCI and survey transects are provided in **Appendix C-2**. The locations of birds are not indicated due to their mobility, the lack of SCI nest sites and the fact some were seen in flight; habitat should be referred to instead. **Appendix C-3** contains representative habitat photographs. Survey data, including scientific names, are presented in detail in **Appendix C-4 and C-5**. This section highlights the SCI (or lack thereof) recorded in the Assessment Area.

6.2 Flora

6.2.1.1 Although two flora SCI were recorded in the AS, neither of them are in the development area and will be preserved. Two mature specimens and one seedling of *Rhodoleia championii*, adjacent to each other, are present in woodland in the AS close to Ta Kwu Ling Ling Ying Public School. As the *Flora of Hong Kong* (Hu *et al.* 2007) states, the natural distribution is restricted to HK Island and given their locations being close to the developed area (indicated in **Figure 2.1**), it is considered that the two mature specimens were planted for ornamental reasons, while the seedling is likely to be self-seeded. This species is protected under Cap. 96 and is listed as Vulnerable in the Rare and Precious Plants of Hong Kong.

6.2.1.2 One specimen of *Aquilaria sinensis* was also present in the AS a short way to the east of the school but outside the development area (indicated in **Figure 2.1**). As a common and widespread species in HK and given it was present in remnant woodland, it is assumed this is of natural occurrence. This species is protected under Cap. 586 and is listed as Vulnerable by IUCN.

6.3 Terrestrial Mammals

6.3.1.1 A single Red muntjac, the sole mammal SCI recorded, was present in woodland in the Assessment Area to the west of the AS. Although present in the List of National Key Protected Wild Animals in China, it is a widespread and common species in woodland in HK. Also recorded in the AS was Brown Rat.

6.4 Bats

6.4.1.1 A maximum of ten bat individuals were recorded over the area during any one survey, indicating the area is not an important foraging area for this group. It was not possible to identify them to species, though all were considered to be pipistrelles based on size and flight action. All were seen either south of Chow Tin village or along the channelised Ping Yuen River (i.e., outside the Application Site).

6.5 Avifauna

6.5.1.1 A total of 22 avian SCI (Chinese Francolin, Greater Coucal, Lesser Coucal, Little Ringed Plover, Wood Sandpiper, Black-crowned Night Heron, Eastern Cattle Egret, Chinese Pond Heron, Grey Heron, Great Egret, Little Egret, Crested Goshawk, Black Kite, Asian Barred Owl, Collared Scops Owl, White-throated Kingfisher, Pied Kingfisher, Common Kestrel, Grey Treepie, Collared Crow, Chinese Hwamei and Siberian Rubythroat) was recorded in the Assessment Area, all in low numbers, though none were physically present in the AS during the surveys: all are either abundant/common and widespread or locally common. Their conservation status is listed in **Table 7.1**. Although Alexandrine Parakeet was recorded and is a globally-threatened species, the HK population is exotic and comprises ex-captive birds or birds derived from these, and thus is not an SCI.

6.5.1.2 Of the SCI recorded, it is likely that Grey Treepie occasionally ventures to the woodland edge at the west side of the AS, while the coucals (in particular Lesser) could opportunistically use the abandoned farmland at certain times. The highest level of threat is borne by Collared Crow, which is assessed as Vulnerable by IUCN. Hong Kong is a stronghold of this species, though most birds occur in the Deep Bay area. It was recorded in flight over the Assessment Area but is unlikely to occur in the AS on anything more than an occasional, mainly flyover, basis as the habitat is unsuitable for foraging and the only known roost site in the northern New Territories is at Mai Po Nature Reserve in the mangrove area.

6.5.1.3 The very low numbers of waterbirds were mainly present in the channelised watercourse of the Ping Yuen River and, to a lesser degree, active farmland; given the paucity of wetland in the AS are unlikely to occur there. Neither significant flight paths nor nesting or roosting areas were recorded.

6.5.1.4 In general, the species recorded in the AS are common, widespread and typical of the grassland/shrubland, village-edge woodland and watercourse habitats in Hong Kong. These include Asian Koel, Red-billed Blue Magpie, Red-whiskered and Chinese Bulbuls, Barn Swallow, Yellow-bellied and Plain Prinias, Crested Myna, Black-collared Starling, Oriental Magpie Robin, Eurasian Tree Sparrow and White Wagtail.

6.6 Herpetofauna

6.6.1 Reptiles

6.6.1.1 Two species were recorded in the abandoned farmland and village/development area within AS including: Changeable Lizard and Bowring's Gecko, both of which are common and widely distributed. No SCI were present.

6.6.2 Amphibians

6.6.2.1 The sole amphibian SCI recorded was present in the 500m Assessment Area and was Chinese Bullfrog, which, although on the Red List of China's Biodiversity (MEE 2023) and the List of National Key Protected Wild Animals, is fairly common and widely distributed in HK. Three individuals were present in a natural watercourse (Watercourse 3 as indicated in **Appendix C-1**) near the western boundary of the Assessment Area.

6.6.2.2 Species recorded in the AS were Asian Common Toad, Asiatic Painted Frog, Butler's Pigmy Frog, Ornate Pigmy Frog, Paddy Frog and Brown Tree Frog. All are common and widespread in Hong Kong.

6.7 Butterflies and Odonata

6.7.1 Butterflies

6.7.1.1 Three butterfly SCI were recorded in the AS: Lesser Band Dart, Metallic Cerulean and Common Cerulean. All were recorded to the west of the existing school in woodland that is not within the development area and will be preserved.

6.7.1.2 Other butterfly species recorded in the AS were Tailless Line Blue, Large Faun, Blue-spotted Crow, Common Archduke, Common Sailer, Dark-brand Bush Brown, Common Bluebottle, Lemon Emigrant, Three-spot Grass Yellow and Red-base Jezebel. All are common and widespread in Hong Kong.

6.7.1.3 Butterfly SCI recorded in the 500m Assessment Area outside the AS were Grey Scrub Hopper, Conjoined Swift, Forget-me-not, Metallic Cerulean, Common Cerulean, Tiny Grass Blue, Courtesan and Swallowtail.

6.7.2 Odonata

6.7.2.1 The only dragonfly SCI recorded in the AS was a single Dingy Dusk-hawker, which was listed as of Local Concern by Fellowes *et al.* (2002). Although uncommon, it is quite widespread in areas of the New Territories and on Lantau. In addition, a further four individuals of that

species (maximum count in one survey was three individuals) and one Blue-spotted Dusk-hawker were recorded in woodland in the Assessment Area. Blue-spotted Dusk-hawker was also listed as of Local Concern by Fellowes *et al.* (2002) but is common and widespread in well-shaded woodland.

6.7.2.2 Other species of dragonfly recorded in the AS were Orange-tailed Sprite, Yellow Featherlegs, Common Flangetail, Wandering Glider, Variegated Flutterer, Crimson Dropwing and Indigo Dropwing. All are common and widespread in Hong Kong.

6.8 Freshwater Fauna

6.8.1.1 The freshwater crab *Sommaniathelphusa zanklon* was recorded in the Assessment Area in the same watercourse in which the Chinese Bullfrog were present and in the lower reaches of a stream that flows from the AS. Although listed as Endangered by IUCN and as of Global Concern by Fellowes *et al.* (2002), it is common and widespread in Hong Kong.

6.8.1.2 Freshwater fish recorded in the AS were Chinese Barb, Mosquito Fish and Dwarf Snakehead. The first is native, common and widespread. The latter two are exotic, the first common and widespread, the second locally distributed in North District. None are considered SCI.

6.8.1.3 The freshwater invertebrates recorded in the AS were the larvae of an unidentified skimmer and an unidentified dropwing, *Macrobrachium nipponense*, *Angulyagra polyzonata*, *Sinotaia quadrata* and Apple Snail. None are considered as SCI.

6.8.1.4 Table 8 in **Appendix C-4** lists the freshwater invertebrate fauna recorded in the three streams in the Application Site (Watercourses 1, 2 & 3). There are no SCI and all are common and widespread in Hong Kong.

6.9 Fireflies

6.9.1.1 No fireflies were sighted within the AS during the surveys. In the 500m Assessment Area, low numbers of Rimmed Window Firefly (*Pyrocoelia analis*) were present in both abandoned farmland and active farmland south of Chow Tin Tsuen. According to Yiu (2017), this species is very common and widespread in Hong Kong and is not considered to be of conservation importance. No other firefly species were observed during the surveys.

7 Assessment of Ecological Significance

7.1 Species of Flora and Fauna

7.1.1.1 **Table 7.1** provides an assessment of the ecological importance of the SCI recorded in the AS and 500m Assessment Area (i.e. used to define the Assessment Area outside the AS as explained in **Section 2.1.1.3**).

Table 7.1. Evaluation of species of conservation importance

Species	Conservation and Protection Status ¹	Distribution and Rarity ²	Recorded from:	
			Application Site	500m Assessment Area
Flora				
<i>Aquilaria sinensis</i>	IUCN(VU); Cap.586	Common in lowland forest and <i>fung shui</i> woods, but also planted are present near villages.	-	WL(1)
<i>Rhodoleia championii</i>	Protected under Cap. 96 and listed as VU in the Rare and Precious Plants of HK.	Very Rare (Mt. Nicholson, HK Island) in forest. However, the two specimens were planted for ornamental purposes.	WL(2)	
Mammals				
Red Muntjac <i>Muntiacus vaginalis</i>	PRC	Very Common. Very widely distributed in countryside areas throughout Hong Kong.	-	WL(2)
Birds				
Chinese Francolin <i>Francolinus pintadeanus</i>	VU(RLCB)	Common resident in upland areas of grassland and shrubby grassland.	-	GL(2)
Greater Coucal <i>Centropus sinensis</i>	NKPWA(II)	Common and widespread resident in shrubland.	-	AbF(4); GL(3)
Lesser Coucal <i>Centropus bengalensis</i>	NKPWA(II)	Locally common resident in grassland and shrubby grassland.	-	AbF(2); GL(3)
Little Ringed Plover <i>Charadrius dubius</i>	(LC)	Common winter visitor and passage migrant, also a scarce breeding species	-	AcF(18)
Wood Sandpiper <i>Tringa glareola</i>	LC	Common passage migrant and winter visitor	-	AcF(2)
Black-crowned Night Heron <i>Nycticorax nycticorax</i>	(LC)	Common wetland species, resident, passage migrant and winter visitor, mainly to Deep Bay area	-	CW(2); IF(3)
Eastern Cattle Egret <i>Bubulcus coromanda</i>	(LC)	Common passage migrant and winter visitor, with summer breeding populations	-	AcF(1)
Chinese Pond Heron <i>Ardeola bacchus</i>	PRC (RC)	Common in wetlands all year, with winter migrant and breeding populations	-	AbF(1); AcF(2); CW(4)
Grey Heron <i>Ardea cinerea</i>	PRC	Common winter visitor mainly to Deep Bay area wetlands, scarce in summer	-	CW(1)
Great Egret <i>Ardea alba</i>	PRC (RC)	Abundant all year, mainly in Deep Bay area wetlands.	-	CW(2)
Little Egret <i>Egretta garzetta</i>	PRC (RC)	Abundant and widespread wetland breeding species, passage migrant and winter visitor	-	CW(5); WC(1)
Crested Goshawk <i>Accipiter trivirgatus</i>	CITES(II); NKPWA(II); Cap.586	Common and widespread resident	-	WL(1)
Black Kite <i>Milvus migrans</i>	(RC); CITES(II); NKPWA(II); Cap.586	Abundant resident and winter visitor, present all year in all habitats.	-	IF(4)
Asian Barred Owlet <i>Glaucidium cuculoides</i>	CITES(II); NKPWA(II); Cap.586	Common but localised resident in open country and open woodland.	-	WL(1)
Collared Scops Owl <i>Otus lettia</i>	CITES(II); NKPWA(II); Cap.586	Common and widespread resident in shrubland and forest.	-	WL(2)
White-throated Kingfisher <i>Halcyon smyrnensis</i>	(LC); NKPWA(II)	Common and widespread resident in wetland areas; scarce in forest in summer.	-	CW(1)
Recorded from:				
Species	Conservation and Protection Status ¹	Distribution and Rarity ²	Application Site	500m Assessment Area
Pied Kingfisher <i>Ceryle rudis</i>	(LC)	Common but localised resident, mostly in Deep Bay area freshwater wetlands.	-	CW(2)
Common Kestrel <i>Falco tinnunculus</i>	CITES(II); NKPWA(II); Cap.586	Common and widespread autumn migrant/ winter visitor; occasional summer records	-	IF(2)
Grey Treepie <i>Dendrocitta formosae</i>	LC	Locally common resident in forest and closed-canopy shrubland.	-	WL(3)
Collared Crow <i>Corvus torquatus</i>	LC; NT(RLCB); VU(IUCN)	Locally common but declining resident, mainly in coastal areas	-	IF(1)
Chinese Hwamei <i>Garrulax canorus</i>	CITES(II); NKPWA(II); Cap.586	Common and widespread resident in closed- and open-canopy shrubland.	-	GL(1); SL(1)

Siberian Rubythroat <i>Calliope calliope</i>	NKPWA(II)	Locally common winter visitor and passage migrant	-	AbF(1)
Amphibians				
Chinese Bullfrog <i>Hoplobatrachus chinensis</i>	PRC; RLCB(EN); NKPWA(II)	Fairly Common. Widely distributed in Hong Kong.	-	WC(3)
Butterflies				
Grey Scrub Hopper <i>Aeromachus jhora</i>	-	Rare. Yung Shue O, Kuk Po, Tai Lam, Sha Lo Tung	-	AbF(2)
Conjoined Swift <i>Pelopidas conjunctus</i>	-	Rare. Ngong Ping, Shing Mun, Pak Tam Chung, Fung Yuen.	-	GL(1)
Lesser Band Dart <i>Potanthus trachala</i>	-	Rare. Widely distributed throughout Hong Kong.	WL(2)	-
Forget-me-not <i>Catochrysops strabo</i>	-	Very Rare. Pui O, Tai Po Kau, Fung Yuen, Shing Mun, Sha Lo Wan.	-	AbF(1); AcF(1); GL(3); SL(2)
Metallic Cerulean <i>Jamides alecto</i>	-	Very Rare. Victoria Peak, Fung Yuen, Chuen Lung, Mui Wo.	WL(2)	AbF(1); WL(3)
Common Cerulean <i>Jamides celeno</i>	-	Rare. Shek Pik, High Junk Peak, Shek Mun Kap, Fung Yuen, Pui O, Ma On Shan.	WL(1)	AbF(1); VDA(1); WL(1)
Tiny Grass Blue <i>Zizula hylax</i>	-	Very Rare. Lung Kwu Tan, Fung Yuen, Sha Lo Wan.	-	AbF(2); GL(2); SL(1)
Courtesan <i>Euripus nyctelius</i>	-	Very Rare. Records from Tai Po, Kai Shan	-	SL(1)
Swallowtail <i>Papilio xuthus</i>	-	Rare. Kap Lung, Ma On Shan, Tai Tam, Sha Lo Wan, Kat O, Lung Kwu Tan, Wu Kau Tang, Lung Kwu Chau.	-	SL(1)
Odonata				
Blue-spotted Dusk-hawker <i>Gynacantha japonica</i>	LC	Common. Widespread in well-shaded woodlands.	-	WL(1)
Dingy Dusk-hawker <i>Gynacantha subinterrupta</i>	LC	Uncommon but widespread. Records from in HK Wetland Park, Lantau Island, Ping Shan Chai, Sha Lo Tung and Tai Mo Shan.	WL(1)	WL(3)
Freshwater Fauna				
Freshwater Crab <i>Somanniathelphusa zanklon</i>	GC; IUCN(EN)	Common and widespread, especially in New Territories and on Lantau.	-	WC

Notes:

- The conservation and protection status of species was made with reference to Fellowes *et al.* (2002), the Red List of China's Biodiversity (MEE 2023), IUCN (2024), the List of National Key Protected Wild Animals in China, CITES (2024), Cap. 170 and Cap. 586, and Rare and Precious Plants of Hong Kong at: <https://www.herbarium.gov.hk/en/publications/books/book2/index.html>.
- Conservation status by Fellowes *et al.* (2002): LC = Local Concern; PRC = Potential Regional Concern; RC = Regional Concern; PG = Potential Global Concern; GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
 - Conservation status by Red List of China's Biodiversity (RLCB) (MEE 2023): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Conservation status by IUCN (2024): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Protection status in the List of National Key Protected Wild Animals (NKPWA) in China: I = Class I Protected Species in China; II = Class II Protected Species.
 - Protection status by CITES (2024): I = Listed in CITES Appendix I; II = Listed in CITES Appendix II.
 - Cap. 170 = Wild Animals Protection Ordinance. All wild birds in Hong Kong are protected under Cap. 170.
 - Cap. 586 = Protection of Endangered Species of Animals and Plants Ordinance.
- Status in Hong Kong follows Carey (2023), Corlett *et al.* (2000), AFCD (2024), HKBWS (2022), Chan *et al.* (2005), Chan *et al.* (2011), Tam *et al.* (2011), and Stanton & Leven (2016).
- Habitat: AbF = Abandoned Farmland; AcF = Active Farmland; CW = Channelised Watercourse; GL = Grassland; IF = In Flight; PT = Plantation; SL = Shrubland; VDA = Village / Developed Area; WC = Watercourse; WL = Woodland.

7.2 Habitats

7.2.1.1 Table 7.2 lists the habitat areas in the AS and Assessment Area.

Table 7.2. Land area of habitats present

Habitat	Area (Ha) ^[1]		
	Application Site	500m Assessment Area	Assessment Area

Natural Watercourse	409 m (approx.. length)	2,729 m (approx.. length)	3,138 m (approx.. length)
Channelised Watercourse	/	12.68	12.68
Active Farmland	0.004	3.55	3.55
Woodland	2.71	26.85	29.56
Grassland	0.008	24.90	24.91
Shrubland	0.16	6.97	7.13
Plantation	0.27	1.77	2.04
Abandoned Farmland	7.13	26.94	34.07
Village / Developed Area	2.09	38.32	40.41
TOTAL	12.37	141.98	154.35

Notes:

1. Expressed in ha or other specified.

Natural Watercourse

7.2.1.2 **Table 7.3** evaluates natural watercourse in the AS and 500m Assessment Area. There are three such streams in or adjacent to the AS, as follows (see **Appendix C-1** for locations and **Appendix C-3** for photographs).

7.2.1.3 Watercourse 1 is approximately 257m in length and lies wholly within the AS. **This watercourse is semi-natural** as it is an old meander preserved during the channelization of the Ping Yuen River. **Although** it retains characteristics typical of small streams in lowland areas, **including a muddy bottom, it has little water flow as a result of the reduced linkage with Ping Yuen River.** The riparian zone of this watercourse is well vegetated by herbs and shrubs. It is hydrologically connected to the main channel of Ping Yuen River via an inlet and an outlet.

7.2.1.4 Watercourse 2 is approximately 92m in length and lies wholly within the AS. This **semi-natural** watercourse was formerly an agricultural ditch, presumably used for irrigation. Based on historical aerial photographs, it has gradually become overgrown due to the abandonment of the adjacent farmland. Either no water flow (early in the wet season) or low water flow (later in the wet season) was observed in this watercourse during the surveys.

7.2.1.5 Watercourse 3 is approximately 272m in length and lies largely outside the AS (approximately 60m lies inside); at it nearest section, it is separated from the development area by an area of woodland. This **semi-natural** watercourse **is an irrigation channel that** runs along an area of active farmland that includes a banana field and several water spinach fields. Some parts of the watercourse have been lined with concrete, while the remainder has a relatively natural, muddy stream bed. Before draining into the main channel of Ping Yuen River, this watercourse feeds into agricultural ditches in the adjacent farmland and as such there is good connection between the two habitats.

Table 7.3. Ecological Evaluation of natural watercourse in AS and 500m Assessment Area.

Criteria	Application Site (Watercourses 1-3)	500m Assessment Area
Naturalness	All are semi-natural.	
Size	Short length (409 m) present.	Moderate length (2,729 m) present.
Diversity	Low floristic and faunal diversity.	
Rarity	Common habitat in HK. Species common and widespread.	
Re-creatability	Can be recreated, but only under the right hydrological and topographical conditions.	
Fragmentation	Moderate.	Moderate
Ecological Linkage	Some linkages with nearby habitats.	
Potential Value	Very limited scope for enhancement via the introduction of native species.	
Nursery/ Breeding Ground	One common and two introduced species of fish were recorded. Six species of aquatic invertebrate were recorded.	Two common and two introduced species of fish recorded. Twelve species of aquatic invertebrate were recorded including the SCI <i>Sommaniathelphusa zanklon</i> . A single Little Egret was the only bird SCI observed.
Age	Unknown.	
Abundance/ Richness of Wildlife	Low.	
Ecological Value	Low due to short length of each watercourse and lack of faunal interest.	Low to Moderate.

Channelised Watercourse

7.2.1.6 Table 7.4 evaluates channelised watercourse in 500m Assessment Area (no channelised watercourse identified in the AS).

Table 7.4. Ecological Evaluation of channelised watercourse in 500m Assessment Area.

Criteria	Assessment Area
Naturalness	Man-made.
Size	Not present in the AS. An area of 12.68 ha, comprising the Ping Yuen and Shenzhen Rivers, lies in the Assessment Area.
Diversity	Low floristic and faunal diversity due to channelisation.
Rarity	Common habitat in HK. Seven common and/or widespread waterbird SCI were recorded using the Ping Yuen River for foraging, all common in HK.
Re-creatability	Can be recreated fairly readily.
Fragmentation	Little.
Ecological Linkage	Some linkages with nearby habitats.
Potential Value	Although there is scope for enhancement it would be costly.
Nursery/ Breeding Ground	Several common and/or introduced fish species are present.

Criteria	Assessment Area
Age	Channelisation of the Ping Yuen River was completed in 2006.
Abundance/ Richness of Wildlife	Low.
Ecological Value	Low to Moderate in the Assessment Area.

Active Farmland

Table 7.5. Ecological Evaluation of active farmland in AS and 500m Assessment Area.

Criteria	Application Site	500m Assessment Area
Naturalness	Man-made.	
Size	Very small (0.004 ha)	Small (3.55 ha)
Diversity	Low floristic and faunal diversity.	
Rarity	Common habitat in northern NT, but declining due to lowland development. Avifaunal SCI recorded were only in the 500m Assessment Area and comprised Little Ringed Plover, Wood Sandpiper, Eastern Cattle Egret and Chinese Pond Heron, which are species typical of wet agricultural areas in HK.	
Re-creatability	Readily recreated if hydrological conditions suitable.	
Fragmentation	Moderate.	
Ecological Linkage	Some linkages with nearby habitats.	
Potential Value	Limited scope for enhancement while retaining the character of dry agriculture.	
Nursery/ Breeding Ground	Low diversity of fauna	Small numbers of common and widespread frogs recorded but no SCI. Small numbers of Chinese Bull Frog can breed in water storage ponds in such areas but this phenomenon was not recorded in this Study. One butterfly SCI was recorded: Forget-me-not.
Age	Unknown.	
Abundance/ Richness of Wildlife	Low.	Low The small area of wet agriculture (water spinach) north of Chow Tin Tsuen is too small to be of ecological significance.
Ecological Value	Low due to small size, intensive human management and paucity of wet agriculture.	Low due to intensive human management and paucity of wet agriculture.

Woodland

Table 7.6. Ecological Evaluation of woodland in AS and 500m Assessment Area.

Criteria	Application Site	500m Assessment Area
Naturalness	Semi-natural.	
Size	Small area present (2.71 ha).	Moderately large area (26.85 ha).
Diversity	Moderate floristic and faunal diversity.	

Criteria	Application Site	500m Assessment Area
Rarity	Common habitat in the NT, increasing due to vegetative succession. A small number of scarce species recorded.	
Re-creatability	Readily recreated if hydrological conditions suitable, but only in the long-term.	
Fragmentation	Moderate.	Low to Moderate.
Ecological Linkage	Strong linkage with nearby woodland areas.	Linkages with nearby woodland areas.
Potential Value	Limited scope for enhancement via the introduction of native forest species.	
Nursery/ Breeding Ground	Small numbers of common and widespread frogs recorded but no SCI. Avifaunal diversity is low and no more than opportunistic use by true forest species due to lying at edge of woodland area, which is itself isolated from extensive forest blocks. Three butterfly SCI were recorded in the AS: Lesser Band Dart, Metallic Cerulean and Common Cerulean. Only one species of dragonfly was recorded: the SCI: Dingy Dusk-hawker, which is uncommon but widespread.	Small numbers of common and widespread frogs recorded but no SCI. Avifaunal diversity is low and no true forest species apart from Grey Treepie were recorded, no doubt due to isolation from extensive forest blocks. A total of 32 species of woodland butterfly were recorded, including the SCI Metallic Cerulean and Common Cerulean. Four species of dragonfly were recorded. These included two SCI: Dingy (uncommon but widespread) and Blue-spotted Dusk-hawkers (common and widespread).
Age	Unknown.	
Abundance/ Richness of Wildlife	Low.	
Ecological Value	Low to Moderate.	Low to Moderate.

Grassland

Table 7.7. Ecological Evaluation of grassland in AS and 500m Assessment Area.

Criteria	Application Site	500m Assessment Area
Naturalness	Semi-natural.	
Size	A negligible area present (0.008 ha).	Moderate area present (24.90 ha). Confined to the southwestern part of the in low hills
Diversity	Low floristic and faunal diversity. Low faunal diversity. SCI were not recorded.	Low floristic and faunal diversity. The low to moderate diversity of avifauna recorded included four SCI, while among the low to moderate diversity of non-bird fauna, SCI were not recorded.
Rarity	Common, though declining habitat in HK. Maximum counts of 2-3 Conjoined Swift and Tiny Grass Blue were recorded in the 500m Assessment Area.	
Re-creatability	Readily recreated.	
Fragmentation	Moderate to high.	Low to moderate.
Ecological Linkage	Some linkages with nearby habitats.	

Criteria	Application Site	500m Assessment Area
Potential Value	Given size and location, no scope for enhancement as grassland.	Limited scope for enhancement via control of fire.
Nursery/ Breeding Ground	Little wildlife use.	Breeding ground for the avifaunal SCI Chinese Francolin, Greater and Lesser Coucal.
Age	Unknown.	
Abundance/ Richness of Wildlife	Low.	
Ecological Value	Negligible.	Low to Moderate.

Shrubland

Table 7.8. Ecological Evaluation of shrubland in AS and 500m Assessment Area.

Criteria	Application Site	500m Assessment Area
Naturalness	Semi-natural.	
Size	Very small area present (0.16 ha).	A moderate area (6.97 ha) present. Confined to western half of area.
Diversity	Low floristic and faunal diversity.	
Rarity	Common habitat in HK. No rare species recorded.	
Re-creatability	Readily recreated, but only in the medium term.	
Fragmentation	Moderate to high.	Moderate to high.
Ecological Linkage	Some linkages with nearby habitats.	Some linkages with nearby habitats.
Potential Value	Limited scope for enhancement via the introduction of native species.	
Nursery/ Breeding Ground *	24 species of butterfly were recorded, including, in the 500m Assessment Area, peak counts of one or two individuals of four butterfly SCI: Forget-me-not, Tiny Grass Blue, Courtesan and Swallowtail. Avifauna is of low diversity and only common and widespread species were recorded. A single individual of the SCI Chinese Hwamei was present in the 500m Assessment Area.	
Age	Unknown.	
Abundance/ Richness of Wildlife	Low.	
Ecological Value	Low.	Low.

* Areas treated together as AS area very small and is part of larger area of shrubland immediately adjacent.

Plantation

Table 7.9. Ecological Evaluation of plantation in AS and 500m Assessment Area.

Criteria	Application Site	500m Assessment Area
Naturalness	Man-made.	
Size	Very small area present (0.27 ha).	A small area present (1.77 ha).
Diversity	Low floristic and faunal diversity.	
Rarity	Very common habitat in HK. No rare species recorded.	
Re-creatability	Readily recreated, but only in the medium term.	
Fragmentation	Moderate to high.	Moderate to high.
Ecological Linkage	Some linkages with nearby habitats.	Some linkages with nearby habitats.
Potential Value	Limited scope for enhancement via the introduction of native forest species.	
Nursery/ Breeding Ground	No SCI recorded and few likely in such an anthropogenic habitat.	
Age	Unknown.	
Abundance/ Richness of Wildlife	Low.	
Ecological Value	Low.	Low.

Abandoned Farmland

Table 7.10. Ecological Evaluation of abandoned farmland in AS and 500m Assessment Area.

Criteria	Application Site	500m Assessment Area
Naturalness	Man-made in sense of human activity having ceased. Now a semi-natural habitat of rank grass and herbaceous vegetation that supports very early-stage succession flora and fauna.	Man-made in sense of human activity having ceased. Now largely a semi-natural habitat of rank grass and herbaceous vegetation that supports very early-stage succession flora and fauna. Areas of trees along the Ping Yuen River are included as they are small and comprise pioneer species (<i>Ficus hispida</i> and <i>Macaranga tanarius</i>) only 3-4 meters tall. Other small areas of trees are excluded because they are small and fragmented from the main forest block and would appear to have low faunal diversity.
Size	Moderate (7.13 ha).	Large (26.94 ha).
Diversity	Low floristic and faunal diversity.	
Rarity	Common habitat in northern NT, but declining due to lowland development. Peak counts of one or two individuals of five butterfly SCI were recorded: Grey Scrub Hopper, Forget-me-not, Metallic Cerulean, Common Cerulean and Tiny Grass Blue.	

Criteria	Application Site	500m Assessment Area
	A total of 20 bird species were recorded, including small numbers of the SCI Greater and Lesser Coucal and Siberian Rubythroat in the 500m Assessment Area. All are common or locally common in HK.	
Re-creatability	Readily recreated if hydrological conditions suitable.	
Fragmentation	Moderate.	Moderate.
Ecological Linkage	Some linkages with nearby habitats.	Some linkages with nearby habitats.
Potential Value	Limited scope for enhancement.	
Nursery/ Breeding Ground	A low diversity of fauna was recorded, and no SCI were recorded.	A low diversity of fauna was recorded, and no SCI were recorded.
Age	Unknown.	
Abundance/ Richness of Wildlife	Low.	
Ecological Value	Low due to fragmentation and early-stage succession.	Low due to fragmentation and early-stage succession.

Village/developed area

Table 7.11. Ecological Evaluation of village/developed area in AS and 500m Assessment Area.

Criteria	Application Site.	Assessment Area
Naturalness	Man-made.	
Size	Small (2.09 ha).	Moderate (38.32 ha).
Diversity	Low floristic and faunal diversity.	
Rarity	Common habitat in HK supporting only common species or opportunistic use by less common species such as the Common Cerulean that was recorded during surveys.	
Re-creatability	Can be recreated readily.	
Fragmentation	Moderate.	
Ecological Linkage	Few linkages with nearby habitats.	
Potential Value	Although there is scope for enhancement it would be costly.	
Nursery/ Breeding Ground	None for SCI.	
Age	Unknown.	
Abundance/ Richness of Wildlife	Low.	
Ecological Value	Low.	Low.

8 Assessment of Potential Ecological Impact

8.1 Avoidance and Minimisation

8.1.1.1 As illustrated in **Appendix B**, the MLP has been designed to avoid habitats of higher ecological values, or other natural habitats. Only man-made/disturbed habitats of very low and low ecological value, including village/developed area, abandoned farmland, shrubland and plantation will be affected. The loss of habitat of ecological value in the AS: woodland has also been minimized. Thus, the following woodland areas have been avoided:

- Woodland to the south and east of the wooded knoll in the south of the AS.
- Woodland area to the north and west of the existing school.
- Woodland along the western edge of the AS.

8.1.1.2 The approaches of avoidance and minimization have adopted as much as practicable. The total area of woodland in the AS is 2.75 ha (1.39 ha within the development area), and of this 1.84 ha (0.52 ha within the development area) has been avoided. Though the woodland loss has been minimized to as low as possible by optimizing the development area, there are still in total 0.87 ha of woodland loss. **Appendix D** illustrates the location of these areas of avoidance. Permeant woodland loss will be mitigated by on-site compensatory planting to be discussed in **Section 9.4**.

8.2 Impact Evaluation Criteria

8.2.1.1 When evaluating potential impact the first consideration was the ecological value of the habitat or species potentially adversely affected. If the evaluation is that it is low, then the significance of potential impact is also low. A potential exception would occur if the magnitude of potential impact (the area or number of individuals potentially impacted) is considered high, in which case a further assessment of impact significance would be made. However, in this project, there is no potential impact that is considered of high magnitude.

8.2.1.2 If the habitat or species potentially impacted is assessed as of greater than low ecological value, then an assessment of the potential significance is made that takes into account habitat quality, species present, duration of impact and magnitude of impact.

8.3 Direct Impacts

8.3.1 Habitats

8.3.1.1 As mentioned, not all the AS will be developed as the development area is smaller. Considering the avoidance of woodland, only the area indicated as “Development Area” in **Figure 2.1** will be developed. **Table 8.1** lists the habitats under the development area that will be avoided and lost for the construction and operation of the development.

Table 8.1. Area of habitats that would be lost.

Habitat	Area (Ha)*			Ecological Value
	Area of potential direct impact (within Development Area)	Avoidance	Loss (within Development Area)	
Watercourse (semi-natural)	349 (length in m)	0	349 (length in m)	Low
Woodland	1.39	0.52	0.87	Low to Moderate
Grassland	0.0008	0	0.0008	Low
Shrubland	0.13	0	0.13	Low
Plantation	0.14	0	0.14	Low
Abandoned Farmland	6.77	0	6.77	Low
Village / Developed Area	1.66	0	1.66	Low

8.3.1.2 Most habitats under the development area are considered to be of no greater than low ecological significance and the magnitude of loss is small. For this reason, the ecological significance of most potential direct impacts is considered low. The first exception is Woodland, the area of which in the AS is part of a larger area in the western part of the Assessment Area. Although 2.75 ha lies in the AS, only 1.39 ha of this is potentially directly affected by the development; the remainder is avoided.

Table 8.2. Potential direct impacts on Woodland in the AS (under the development area) in the absence of mitigation in construction and operational phases

Criteria	Assessment
Habitat Quality	Small in size but areas in the northwest of the AS are part of a larger area of woodland that extends to the west. A small area lies to the west of the wooded knoll in the south of the AS.
Species	Low numbers of common and/or widespread forest species and other fauna. The distance from other blocks of woodland in the northeast and north NT means a complete forest fauna is not present.
Size/Abundance	1.43 ha in AS.
Duration	Permanent.
Reversibility	Impacts irreversible, though compensation readily achieved over time.

Criteria	Assessment
Magnitude	Small, as most of the area directly impacted is part of a much larger woodland block.
Impact Severity	Low to Moderate as the area in the AS is relatively small and the larger woodland area does not support a comprehensive forest fauna due to its distance from other blocks of woodland in the northern New Territories.

8.3.1.3 Watercourses 1 and 2 will suffer direct loss. Although these semi-natural watercourses are assessed as of low ecological value, the magnitude of loss in respect of one stream is small to medium in scale; consequently, the ecological impact is assessed in **Table 8.3**. Watercourse 3 remains unaffected by direct impact as it is excluded from the development footprint.

Table 8.3. Potential direct impacts on Watercourses 1 and 2 in the AS (under the development area) in the absence of mitigation in construction and operational phases

Criteria	Watercourse 1	Watercourse 2
Habitat Quality	Semi-natural, with a muddy bottom, slow water flow and well-vegetated sides.	Semi-natural, former agricultural ditch that has become overgrown. No permanent water flow.
Species	Common and widespread species only are present.	
Size/Abundance	Approximately 257 m.	Approximately 92 m.
Duration	Permanent.	Permanent
Reversibility	Impacts irreversible, though compensation readily achieved over time.	
Magnitude	Small to medium based on length.	Small as section is short.
Impact Severity	Low as although impact is assessed as small to medium in magnitude, the stream supports only a low diversity of common and widespread species.	Low as the magnitude is small and there is no permanent water flow.

8.3.1.4 The area of grassland under the development is tiny and fragmented, and the impact therefore assessed as of low significance.

Table 8.4. Potential direct impacts on Grassland in the AS (under the development area) in the absence of mitigation in construction and operational phases

Criteria	Assessment
Habitat Quality	Tiny size and fragmentation from other areas means this is low.
Species	Low abundance and diversity.
Size/Abundance	0.0008 ha in development area.
Duration	Permanent.
Reversibility	Impacts irreversible, though compensation readily achieved over time.
Magnitude	Small.
Impact Severity	Low.

8.3.1.5 The area of shrubland under the development footprint is small and moderately fragmented with a low diversity of species, and the impact therefore assessed as of low significance.

Table 8.5. Potential direct impacts on Shrubland in the AS (under the development area) in the absence of mitigation in construction and operational phases

Criteria	Assessment
Habitat Quality	Small in size and moderate fragmentation means this is low.
Species	Low floristic and faunal diversity.
Size/Abundance	0.13 ha in development area.
Duration	Permanent.
Reversibility	Impacts irreversible, though compensation readily achieved over time.
Magnitude	Small.
Impact Severity	Low.

8.3.1.6 The area of plantation under the development footprint is small and fragmented with a low diversity of species, and the impact therefore assessed as of low significance.

Table 8.6. Potential direct impacts on Plantation in the AS (under the development area) in the absence of mitigation in construction and operational phases

Criteria	Assessment
Habitat Quality	Small in size and moderate fragmentation means this is low.
Species	Low floristic and faunal diversity.
Size/Abundance	0.14 ha in development area.
Duration	Permanent.
Reversibility	Impacts irreversible, though compensation readily achieved over time.
Magnitude	Small.
Impact Severity	Low.

8.3.1.7 The area of abandoned farmland under the development footprint is medium and moderately fragmented with a low diversity of species, and the impact is therefore assessed as of low significance.

Table 8.7. Potential direct impacts on Abandoned Farmland in the AS (under the development area) in the absence of mitigation in construction and operational phases

Criteria	Assessment
Habitat Quality	Successional stage, moderate size and moderate fragmentation means this is low.
Species	Low floristic and faunal diversity.
Size/Abundance	6.77 ha in development area.
Duration	Permanent.
Reversibility	Impacts irreversible, though compensation readily achieved over time.
Magnitude	Small.

Criteria	Assessment
Impact Severity	Low.

8.3.1.8 The area of village/developed area under the development footprint is small and moderately fragmented with a low diversity of species, and the impact therefore assessed as of low significance.

Table 8.8. Potential direct impacts on Village / Developed Area in the AS (under the development area) in the absence of mitigation in construction and operational phases

Criteria	Assessment
Habitat Quality	Small size, lack of natural vegetation and disturbance mean this is low
Species	Low floristic and faunal diversity.
Size/Abundance	1.66 ha in development area.
Duration	Permanent.
Reversibility	Impacts irreversible, though compensation readily achieved over time.
Magnitude	Small.
Impact Severity	Very Low.

8.3.2 Species

8.3.2.1 No SCI were recorded under the development area and thus no direct impacts to species are defined.

8.4 Indirect Impacts during Construction

8.4.1 Disturbance

8.4.1.1 Disturbance to habitats and the species therein during construction takes both visual and aural forms, though it is the former that is of a higher magnitude. The sight and sound of human activity on or near the construction site and construction vehicles on the nearby roads together raise the disturbance levels above what was present formerly. However, the area is already subject to a degree of human disturbance (thereby reducing the marginal impact) and the use of site hoarding will ameliorate the degree to which this is felt.

8.4.2 Dust Deposition

8.4.2.1 Unmitigated construction operations create significant levels of dust under certain weather conditions due to the use of haul roads and the phenomenon of wind-blown dust from works areas. This dust is deposited on nearby habitats, which can cause vegetation damage and, as a secondary effect, have an impact on fauna such as insects and birds. Impacts from dust deposition of these types will, however, be temporary and reversible,

and standard construction best practices as mitigation measures can be implemented to negate harmful impacts.

8.4.3 Site Run-off

8.4.3.1 Dust and exposed earth from construction operations may enter watercourses via run-off, particularly during periods of heavy rain. This can lead to high turbidity from soil particles (which can block the gills of aquatic organisms) and eutrophication as a result of nutrient enrichment. Run-off impacts are only likely to be of relevance in regard to Ping Yuen River. The magnitude of dust deposition or run-off from the construction site is considerably smaller in the operational phase.

8.4.4 Fragmentation

8.4.4.1 Fragmentation is the appearance of discontinuities in habitat that render it less attractive to flora or fauna or isolate populations of a species, potentially leading to reduced viability of a population. This is most easily seen in infrastructural links, where roads and rail lines break up habitat into smaller units, but also arises from disturbance impacts, where organisms avoid certain areas due to secondary impacts from nearby development.

8.4.4.2 Mammal movements could be impacted by disturbance from lighting or by fragmentation caused by roads or road construction. Although during the construction phase there would be more of this kind of disturbance, in view of their largely nocturnal activity period, mammals are not likely to be highly disturbed. Fragmentation is both a construction phase and an operation phase impact, but these are treated together here as there is little difference in nature.

8.4.5 Impacts on Habitats

8.4.5.1 Indirect impacts on habitats are assessed in relation to the AS and the Assessment Area. Of the habitats identified in the Assessment Area, four are assessed as of greater than low ecological value: woodland, grassland, watercourse and channelised watercourse (all low to moderate). Potential indirect impacts on the remaining habitats and the species utilising them are, by virtue of their low ecological value and small magnitude of effects, low, and these are not considered further.

Natural Watercourse

8.4.5.2 Most of the natural watercourse in the Assessment Area lies in the western portion, sufficiently far away from the development that there is no indirect impact on these streams. The only stream that might be adversely affected by indirect impacts is Watercourse 3, which lies between an area of woodland alongside the boundary of the AS

and an area of active farmland. Given that only a short length of this watercourse lies adjacent to the development area and that it is of low ecological value, the magnitude and significance of adverse impacts are considered low.

Table 8.4. Potential indirect impacts (disturbance, dust deposition, water quality and fragmentation) on Natural Watercourse 3 and its fauna in the AS in the absence of mitigation in construction phase

Criteria	Application Site (Watercourse 3)
Habitat Quality	Short in length (272 m) and adversely affected by immediately adjacent agricultural activities.
Species	The only SCI recorded was <i>Sommaniathelphusa zanklon</i> in the northern portion, though it may well be present adjacent to the development area. This species is common and widespread, however.
Size/Abundance	Approximately 132 m lies adjacent to or near the development area. Low diversity / abundance of common and/or widespread stream fauna.
Duration	Up to several years.
Reversibility	Impacts irreversible, though mitigation possible.
Magnitude	Small for all impact types. Water quality of this stream already impacted by agricultural run-off, while the impact of marginal disturbance is likely to be minor due to the retention of woodland between the stream and the development area. No fragmentation of this watercourse will occur.
Impact Severity	Low

Woodland

8.4.5.3 Woodland in all areas is assessed as of low to moderate ecological value. Woodland is a relatively disturbance-insensitive habitat due to its closed nature, which means visual disturbance to the fauna within is lessened considerably and intrudes only a short distance into the habitat. Similarly, dust is cut out quickly by vegetation at the edge of the habitat and does not penetrate far. In view of the resultant small magnitude of impacts, impact severity is considered to be low. Surface run-off is not considered to be a potential impact.

Table 8.5. Potential indirect impacts (disturbance, dust deposition, fragmentation) on Woodland and its fauna in the AS and 500m Assessment Area in the absence of mitigation in construction phase

Criteria	Application Site	500m Assessment Area
Habitat Quality	Small in size, some areas fragmented.	Moderate in size and relatively little fragmentation.
Species	Low numbers of common and/or widespread forest species and other fauna. Distance from other blocks of woodland in NT means a complete forest fauna not present.	

Criteria	Application Site	500m Assessment Area
Size/Abundance	1.88 ha.	26.85 ha in Assessment Area.
Duration	Up to several years.	
Reversibility	Not reversible but can be ameliorated.	
Magnitude	Small for disturbance and dust deposition due to the dense and closed nature of the habitat. Small for fragmentation as for much of the woodland linkages with the woodland block in the west remain largely intact and the distances to nearby small woodland areas such as the wooded knoll are short.	Small for disturbance and dust deposition due to the dense and closed nature of the habitat. Small for fragmentation as the woodland block in the west remains untouched and the distances to nearby small woodland areas are short.
Impact Severity	Low	Low

Grassland

8.4.5.4 Grassland is largely in the west of the Assessment Area but only a very small area lies in the AS. For this reason, although it is a relatively open habitat, the magnitude of disturbance and dust deposition impacts is considered small and the severity of impact low. Further, fragmentation impacts are negligible as most grassland lies to the west of development area.

Table 8.6. Potential indirect impacts (disturbance, dust deposition, fragmentation) on Grassland and its fauna in the AS and Assessment Area in the absence of mitigation in construction phase

Criteria	Application Site	Assessment Area
Habitat Quality	Very small	Moderate in size with little fragmentation.
Species	Low diversity of fauna.	Low to moderate diversity of common and/or widespread grassland fauna. Avian SCI include Chinese Francolin, which is declining as a result of vegetative succession.
Size/Abundance	Very small at 0.008 ha. Very low abundance of organisms.	Moderate, with 24.902 ha in Assessment Area. Low abundance of organisms.
Duration	Up to several years.	
Reversibility	Impacts irreversible, though mitigation possible.	
Magnitude	Very small.	Small for all impacts as only a very small area of the abuts the AS and most of the habitat lies to the west.
Impact Severity	Low	Low

8.4.5.5 An area of approximately 0.4 ha of active farmland abuts the eastern edge of the AS alongside Watercourse 3. This area comprises both wet and dry agriculture at an approximate ratio of 50:50, mainly water spinach and bananas. Given the intervening area of woodland and natural watercourse, it is considered that all indirect impacts will be of low significance.

Table 8.7. Potential indirect impacts (disturbance, dust deposition, fragmentation) on Active Farmland and its fauna in the Assessment Area in the absence of mitigation in construction phase

Criteria	Application Site
Habitat Quality	Very small.
Species	Low diversity of fauna.
Size/Abundance	Very small at 0.4 ha, with no more than half this constituting wet agriculture. Very low abundance of organisms.
Duration	Up to several years.
Reversibility	Impacts irreversible, though mitigation possible.
Magnitude	Small.
Impact Severity	Low

Channelised Watercourse

8.4.5.6 The large channelised watercourses of Ping Yuen and Shenzhen Rivers are in the 500m Assessment Area. However, only the Ping Yuen River lies adjacent to the development area for a substantial length. The area is already disturbed by human activity, nocturnal lighting and vehicles, and faunal use of the watercourses reflect this. Thus, the low marginal impact and the relatively low numbers of avifauna recorded means that impact severity is assessed as low. No fragmentation will occur. There are no channelised watercourses in the AS.

Table 8.8. Potential indirect impacts (visual disturbance, run-off and dust deposition) on Ping Yuen and Shenzhen Rivers and associated waterbirds in the absence of mitigation in construction phase

Criteria	Assessment
Habitat Quality	Moderate in size and unfragmented. However, the degree of channelisation limits potential habitat quality in both rivers, while the limited tidal range and poor water quality of the Shenzhen River allows few foraging opportunities for birds. The area is already highly disturbed by human activity in the vicinity of both rivers.
Species	Very low numbers of common and/or widespread waterbird species such as egrets, herons and kingfishers.
Size/Abundance	12.68 ha.
Duration	Several years.
Reversibility	Impacts irreversible, though compensation possible.

Criteria	Assessment
Magnitude	Small for all impact types in both habitats. These watercourses are already disturbed, while dust deposition and run-off are predicted to be of a small magnitude compared to the volume of water.
Impact Severity	Low.

8.4.6 Impacts on Species of Conservation Importance

Flora

8.4.6.1 Two mature specimens and one seedling of *Rhodoleia championii* were recorded near the existing school and adjacent to the development area. These trees are possibly close enough to the development area to be impacted by dust deposition during the construction phase, but it is likely to be minor. In any event, it is highly likely these are ornamental specimens and the ecological significance of any potential indirect impact is considered low.

8.4.6.2 One specimen of *Aquilaria sinensis* present in woodland close to the development area and adjacent to Watercourse 3 is also likely to be impacted by dust deposition. Given that this is a common and widespread species, from an ecological perspective the significance of potential impact is low.

Fauna

8.4.6.3 The sole fauna species of SCI recorded immediately adjacent to the development area was the dragonfly Dingy Dusk-hawker. One individual was seen in woodland in the AS, though it was likely an opportunistic use of the habitat. Although four individuals were seen in the Assessment Area elsewhere in the same woodland, they were at a location some distance from the development area in a stream that is not hydrologically connected with AS. The presence of these individuals indicates there may be a breeding population in the area, as the larvae are usually found in seasonal wetlands, even small water holes. Such breeding sites may be present in abandoned farmland or natural streams in the area. Given that only one individual was recorded close to the development area and the core of the population occurred some way to the west, the ecological significance of any potential indirect impact is considered low.

Table 8.9. Potential indirect impacts on Dingy Dusk-hawker in the AS in the absence of mitigation in construction phase

Criteria	Assessment
Habitat Quality	Small, but part of a larger area of woodland in the area. The larger area of woodland has limited fragmentation but is quite far from similar areas elsewhere.
Species	Uncommon but widespread species.
Size/Abundance	One individual in the AS but others recorded in woodland to the west.
Duration	Several years.
Reversibility	Impacts irreversible, though compensation possible.
Magnitude	Low given only one individual was recorded close to the development area.
Impact Severity	Low.

8.5 Indirect Impacts during Operation

8.5.1 Human Disturbance

8.5.1.1 Indirect impacts of anthropogenic disturbance on habitats and the species using them during the operation phase are considered to be of no greater magnitude than those in the construction phase, and in some areas rather less. In places where the two are comparable, this is due to disturbance from construction activities being replaced by visual disturbance from building height, while in certain places vehicle movement during operation may be similar to that during construction. For this reason, assessments of potential indirect impacts of human disturbance in the operational phase are the same as those described in **Tables 8.3 to 8.6.**

8.5.2 Glare

8.5.2.1 Night-foraging or night-roosting birds may be subject to impacts from glare or light-spill from buildings, which might make certain areas unattractive as foraging or roosting sites. The main species groups affected are disturbance sensitive species such as large waterbirds (cormorants, egrets and herons) and owls. In general, the larger the species, the greater the distance from a disturbance source at which a disturbance impact occurs.

8.5.2.2 However, there is no evidence of significant night-roosts in the area. Experience elsewhere in HK suggests that egrets and herons do not shy away from roosting in well-lit, urban areas, as can be seen by the examples of year-round roosts at Wong Chuk Hang, Victoria Park, Penfold Park and Tai Po Market. Furthermore, the Shenzhen side of the river is densely urbanised and levels of existing night-time lighting in the area are relatively high already. For these reasons, it is not considered that lighting or associated glare would impose a significant marginal impact on foraging or roosting ardeids. Finally the area does not seem to provide suitable habitat for Eurasian Eagle-owl, which is the most likely species of conservation importance to occur.

Table 8.10. Potential indirect impacts of glare and light-spill on woodland, grassland, watercourse and channelised watercourse and their fauna in areas adjacent to the development area in the absence of mitigation in the operation phase

Criteria	Application Site	Assessment Area
Habitat Quality	Low or low to moderate.	Low or low to moderate.
Species	Low diversity of common and/or widespread fauna.	
Size/Abundance	The area of grassland and the length of natural watercourse potentially impacted is very small. In none of these habitats are the number of organisms large. The woodland area potentially impacted is small. No channelised watercourse is present in the AS.	The area of grassland is moderately large but lies away from lighting sources in the development area. The channelised watercourse of the Ping Yuen River near the development area supports a low abundance of waterbird species. The area of woodland is moderately large though it does not support a full suite of forest fauna. There are no natural watercourses in the Assessment Area that are potentially impacted.
Duration	Permanent	
Reversibility	Impacts irreversible, though compensation possible.	
Magnitude	Small for all habitats. The areas of grassland and natural watercourse impacted are very small. The closed nature of woodland habitat means that light does not penetrate far.	Although the length/area of channelised watercourse is moderately long, it is already lit by the adjacent road. Further, the number and diversity of species using the habitat at night is low. The area of woodland and grassland lies further away than those in the AS and the magnitude is even smaller.
Impact Severity	Low	Low

8.5.3 Collision Mortality

8.5.3.1 Collision mortality of birds generally occurs below 20 m above ground level, the height below which most local birds fly when foraging or flying to roosting areas. Glass surfaces that reflect surrounding vegetation or glass features that provide an appearance of through passage may also lead to bird collision mortality.

Table 8.11. Potential indirect impacts of avian collision in the absence of mitigation in the operation phase

Criteria	Assessment
Habitat Quality	Generally low or low to moderate.
Species	Low diversity of common and/or widespread avifauna.
Size/Abundance	The area of buildings in the development area is small. There are no plans for noise barriers along roads.

Criteria	Assessment
Duration	Permanent
Reversibility	Impacts irreversible, though mitigation possible.
Magnitude	Small for all species in view of habitats and species present.
Impact Severity	Low

8.6 Summary of Impacts

- 8.6.1.1** After avoidance of as much woodland as considered feasible to maintain the integrity of the development, the only more significant impact identified as of greater than low significance is the loss of woodland totalling 0.87 ha.

9 Mitigation of Potential Adverse Ecological Impacts

9.1 Avoidance / Minimisation

9.1.1 Design

9.1.1.1 The MLP has been designed to avoid or minimise the loss of habitat of ecological value in the AS: woodland. Thus, the following areas have been avoided:

- Woodland to the south and east of the wooded knoll in the south of the AS.
- Woodland area to the north and west of the existing school.
- Woodland along the western edge of the AS.

9.2 Mitigation for Construction Impact

9.2.1.1 Construction work for this Project could generate surface run-off containing lubricants, chemicals and pollutants. In order to prevent these contaminants entering surrounding water bodies, a standard drainage system along with silt traps, oil traps and gullies will be installed at required sites, and collection to proper receivers will occur. This drainage system will be maintained routinely to prevent blockage. Sewage from construction areas will be properly collected to treatment facilities.

9.2.1.2 The following measures are adopted by most local projects to mitigate the impacts of construction run-off, and will be employed as mitigation for this Project

- Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby water bodies (sewage will not be discharged to Shenzhen River or Ping Yuen River).
- Proper locations well away from nearby water bodies will be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works.
- To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies will be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site.
- Stockpiling of construction materials, if necessary, will be properly covered and located away from nearby water bodies.
- Construction debris and spoil will be covered and/or properly disposed of as soon as possible to avoid being washed into nearby water bodies.

- Construction effluent, site run-off and sewage will be properly collected and/or treated. Wastewater from any construction site will be minimised via the following in descending order: reuse, recycling and treatment.
- Proper locations for discharge outlets of wastewater treatment facilities well away from sensitive receivers will be identified (i.e., treated wastewater will not be discharged into watercourses);
- Site boundary will be clearly marked and any works beyond the boundary strictly prohibited.
- Regular water monitoring and site audit will be carried out at adequate points along Ping Yuen River. If the monitoring and audit results show that pollution occurs, adequate measures including temporary cessation of works will be considered.
- Vehicle wheel washing facilities at the site's exit points should be established and used.

9.2.1.3 Accidental spillage events could potentially have a large impact on nearby habitats if susceptible to pollution. Therefore, an emergency contingency plan should be established and implemented by the Project Proponent or its delegate prior to construction and will be in place at all times during the construction and operational phases.

9.3 Mitigation for Operation Impact

9.3.1.1 As a modern, effective drainage system will be installed to collect surface run-off from the finished roads and hard surfaces, this will prevent impact on nearby habitats, except at times of short-term temporary overload arising from rain storm events. Should there be any discharge to natural watercourses, appropriate use of oil interceptors and silt traps should be made so as to minimise potential impacts on water quality.

9.3.1.2 While collision mortality of birds is not predicted to be a significant issue in this development, appropriate glass and façade treatments may be used to minimise it, especially in areas where the glass façade faces natural vegetation. These include fritting, the use of UV reflective glass, film or art treatment or lightweight external screens to form an element of larger buildings.

9.4 Compensation for Woodland Loss

9.4.1.1 The sole adverse ecological impact requiring mitigation is the loss of woodland in the AS. The area of loss is calculated at 0.87 ha. Two on-site compensation areas of approximately the same size in the AS at a compensation ratio of 1:1 have been identified as indicated on the Compensatory Tree Planting Plan in **Appendix D**.

9.4.1.2 The first of these lies at the southwest corner of the AS and is currently largely abandoned agriculture with smaller areas of shrubland and plantation. Woodland planting will be

carried out in the area of abandoned agriculture. The emphasis in the areas of shrubland and plantation will be on supplemental and under-planting to increase the speed at which woodland regeneration is occurring.

9.4.1.3 The second area lies to the west and is linked to adjacent woodland, including woodland that lies in the AS but is avoided, and is currently abandoned agriculture. Woodland planting will be carried out to transform this area to forest after a suitable period of time.

9.4.1.4 The focus in the woodland planting will be on the use of largely native species with an emphasis on species of ecological value that provide foraging and resting opportunities for fauna. The following tree species, all of which are present in the northern New Territories and are likely to grow successfully, will be considered for inclusion: *Ailanthus fordii*, *Bischofia javanica*, *Castanopsis fissa*, *Celtis sinensis*, *Cinnamomum burmannii*, *Cinnamomum camphora*, *Hibiscus tiliaceus*, *Liquidambar formosana*, *Sapium discolor*, *Schefflera heptaphylla* and *Ilex rotunda*. The Landscape Master Plan is illustrated in **Appendix E**.

9.4.1.5 The project proponent/ future property management of the proposed development will be responsible for the maintenance of the proposed compensatory woodland planting.

9.5 Residual Impacts

9.5.1 Construction and Operation

9.5.1.1 With the implementation of mitigation measures described above, there is minor and temporary residual impact relating to the time required for woodland to reach a maturity comparable to current conditions in the compensation areas. This is considered to be of low significance given that woodland is a common and increasing habitat throughout much of Hong Kong and that the woodland lost does not support the full suite of woodland fauna and flora that may be found elsewhere.

10 Conclusion

- 10.1.1.1** The sole ecological impact requiring mitigation is the loss of 0.87 ha of woodland in the AS. With the implementation of compensatory woodland planting at a ratio of 1:1, there will only be a temporary residual impact for as long as is necessary for the subject areas to reach a similar level of maturity as nearby areas. This is assessed as of low significance. Thus from an ecological standpoint, the development proposal is acceptable.

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Appendix A

Approved Man Kam To
Outline Zoning Plan (OZP) No.
S/NE-MKT/4



深圳市
SHENZHEN SHI

圖例
NOTATION

- ZONES
- VILLAGE TYPE DEVELOPMENT [V] 鄉村式發展
 - GOVERNMENT, INSTITUTION OR COMMUNITY [GIC] 政府、機構或社區
 - RECREATION [REC] 康樂
 - OTHER SPECIFIED USES [OU] 其他指定用途
 - AGRICULTURE [AGR] 農業
 - GREEN BELT [GB] 綠化地帶
 - CONSERVATION AREA [CA] 自然保育區
- COMMUNICATIONS
- ELEVATED ROAD [Symbol] 高架道路
- MISCELLANEOUS
- BOUNDARY OF PLANNING SCHEME [Symbol] 規劃範圍界線

土地用途及面積一覽表
SCHEDULE OF USES AND AREAS

USES	大約面積及百分比 APPROXIMATE AREA & %		用途
	公頃 HECTARES	% 百分比	
VILLAGE TYPE DEVELOPMENT	27.62	8.04	鄉村式發展
GOVERNMENT, INSTITUTION OR COMMUNITY	11.28	3.28	政府、機構或社區
RECREATION	16.68	4.85	康樂
OTHER SPECIFIED USES	108.96	31.71	其他指定用途
AGRICULTURE	59.73	17.38	農業
GREEN BELT	107.35	31.25	綠化地帶
CONSERVATION AREA	4.24	1.23	自然保育區
RIVER CHANNEL	7.77	2.28	河道
TOTAL PLANNING SCHEME AREA	343.63	100.00	規劃範圍總面積

夾附的《註釋》屬這份圖則的一部分
THE ATTACHED NOTES ALSO FORM PART OF THIS PLAN

行政長官會同行政會議於2017年12月5日 根據城市
規劃條例第9(1)(a)條核准的圖則
APPROVED BY THE CHIEF EXECUTIVE IN COUNCIL UNDER
SECTION 9(1)(a) OF THE TOWN PLANNING ORDINANCE ON
5 DECEMBER 2017

Wendy Leung
Ms Wendy LEUNG 梁蕙儀女士
CLERK TO THE EXECUTIVE COUNCIL 行政會議秘書

香港城市規劃委員會依據城市規劃條例擬備的文錦渡分區計劃大綱圖
TOWN PLANNING ORDINANCE, HONG KONG TOWN PLANNING BOARD
MAN KAM TO - OUTLINE ZONING PLAN

SCALE 1:7 500 比例尺
METRES 200 0 200 400 600 800 1 000 METRES 米

規劃署遵照城市規劃委員會指示擬備
PREPARED BY THE PLANNING DEPARTMENT UNDER
THE DIRECTION OF THE TOWN PLANNING BOARD

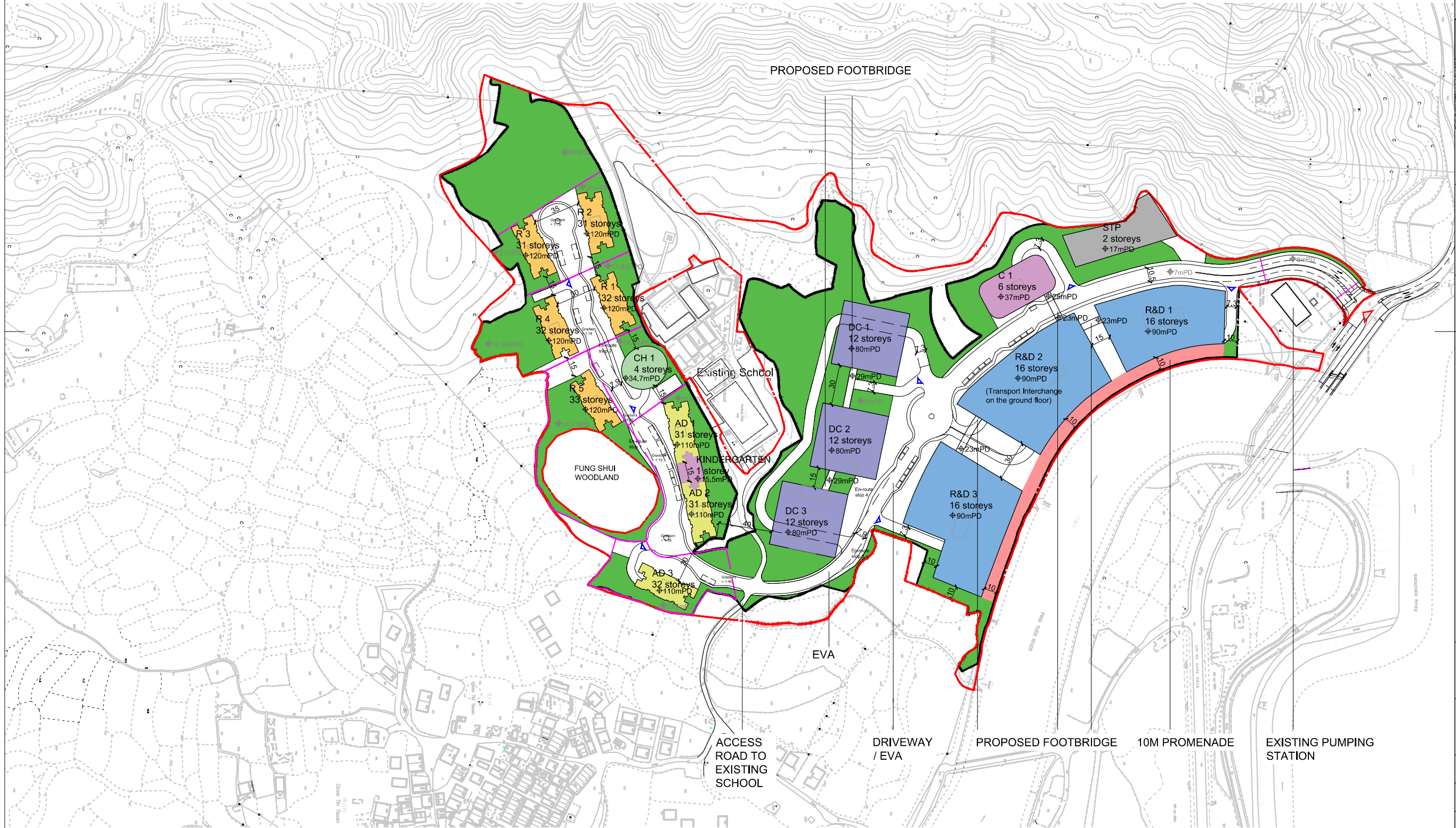
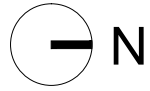
圖則編號
PLAN No. S/NE-MKT/4

Appendix B

Master Layout Plan

LEGEND

- - - - APPLICATION SITE BOUNDARY
- - - - DEVELOPMENT SITE
- - - - SITE FORMATION LEVEL
- ▷ SITE RUN-IN/OUT
- ▷ ACCESS TO BASEMENT CARPARK
- R&D CENTRE
- DATA CENTRE
- RESIDENTIAL
- COMMERCIAL
- ANCILLARY DORMITORIES
- CLUBHOUSE
- LANDSCAPE AREA
- SEWAGE TREATMENT PLANT
- PROMENADE



Rev.	Date	Description
------	------	-------------

- Notes**
- Do not scale drawings. Dimensions govern.
 - Verify dimensions in field. Notify WCWP of discrepancies.
 - Dimensions in mm unless otherwise noted.
 - Not for construction unless expressly certified.



Client
Hong Kong International Innovation Tech Hub

Consultants

Issue
Planning Application

RD Ref: RD 2/9188/10 (PT. II)
FSD Ref: FP 8/9584/VII <131>

Authorized Person

Project
The Nexus

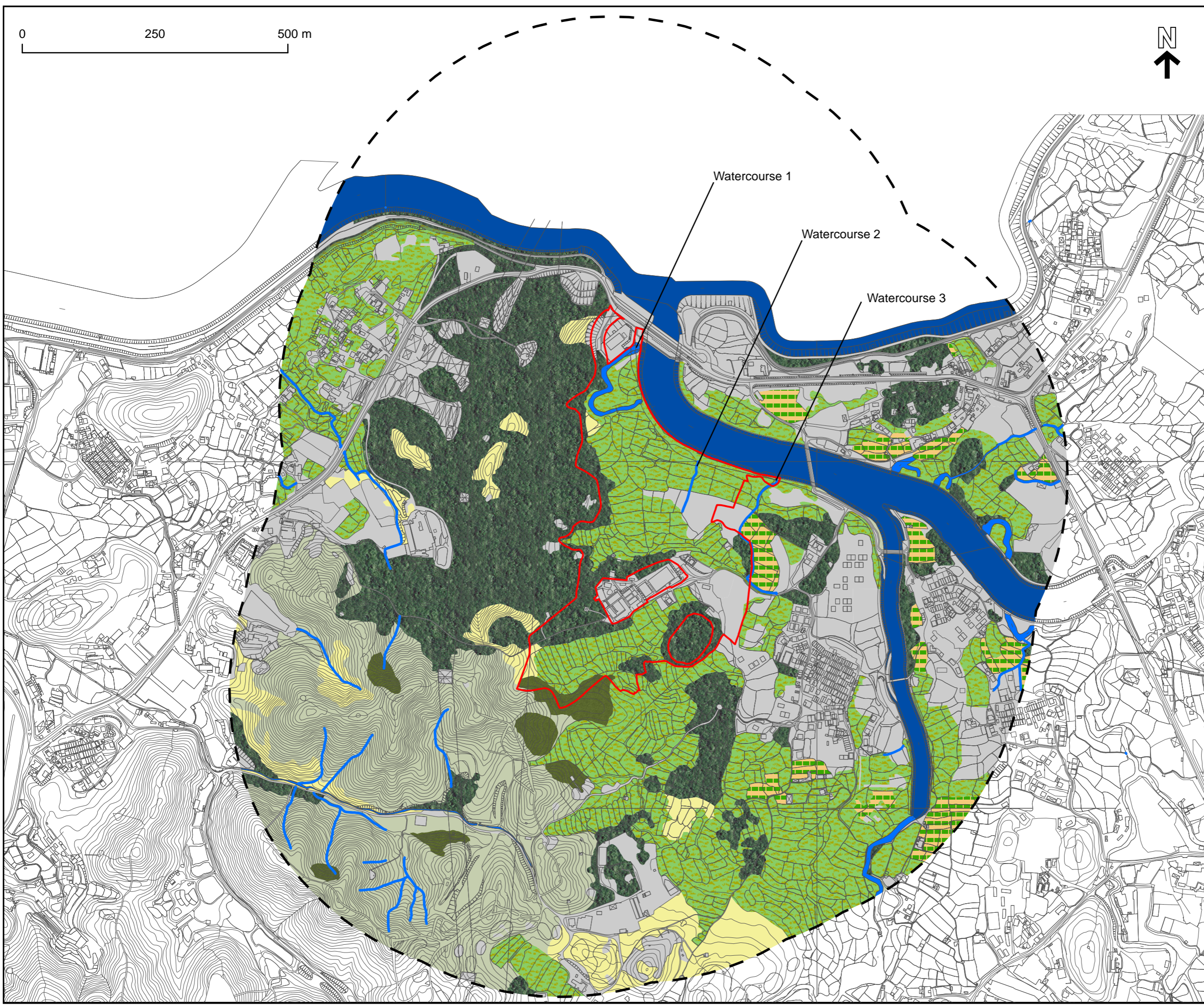
Project Number 20027	Date 20240828
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Scale 1:3000 at A3	Drawn/Approved CL/TL
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Title
Master Layout Plan

Number	Revision
MLP-001	-

Appendix C-1
Habitat Map



0 250 500 m



- LEGEND**
- Application Site
 - 500m Assessment Area
 - Habitat**
 - Natural Watercourse
 - Channelised Watercourse
 - Village / Developed Area
 - Active Farmland
 - Abandoned Farmland
 - Grassland
 - Shrubland
 - Woodland
 - Plantation

Watercourse 1

Watercourse 2

Watercourse 3

FIGURE TITLE
Habitat Map

DATE
20 / 11 / 2024

FIGURE NO. C-1 SCALE 1:6,500 on A3

PROJECT TITLE
S12A Application for Amendment of Plan for Proposed Innovation and Technology Hub at Various Lots in D.D. 82 and D.D. 86 and Adjoining Government Land, Man Kam To, New Territories (Application No. Y/NE-MKT/1)



Appendix C-2

Locations of Species of
Conservation Importance and
Survey Transects

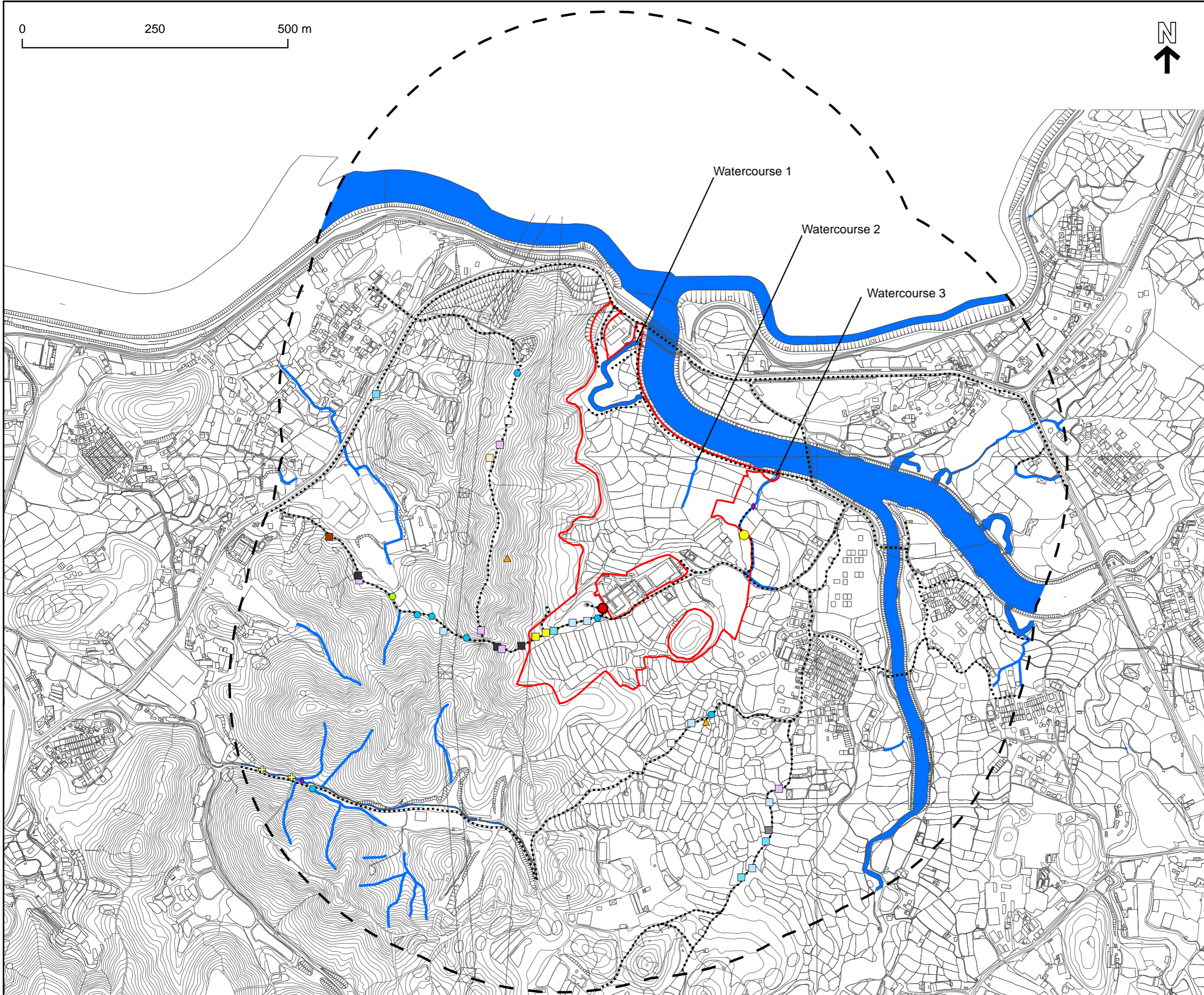
0 250 500 m



- LEGEND**
- Application Site
 - 500m Assessment Area
 - Survey Transect
 - Watercourse

- Floral Species of Conservation Importance**
- Aquilaria sinensis*
 - Rhodoleia championii*

- Faunal Species of Conservation Importance**
- Species
- ▲ Red Muntjac
 - + Chinese Bullfrog
 - Common Cerulean
 - Conjoined Swift
 - Courtesan
 - Forget-me-not
 - Grey Scrub Hopper
 - Lesser Band Dart
 - Metallic Cerulean
 - Swallowtail
 - Tiny Grass Blue
 - Blue-spotted Dusk-hawker
 - Dingy Dusk-hawker
 - ◆ *Somanniathelphusa zanklon*



*Locations of bird species of conservation importance recorded in the surveys were not provided here due to their highly mobile nature

FIGURE TITLE
Locations of Survey Transects and Species of Conservation Importance

DATE
8 / 10 / 2024

FIGURE NO. C-2 SCALE 1:6,500 on A3

PROJECT TITLE
S12A Application for Amendment of Plan for Proposed Innovation and Technology Hub at Various Lots in D.D. 82 and D.D. 86 and Adjoining Government Land, Man Kam To, New Territories (Application No. Y/NE-MKT/1)



Appendix C-3

Habitat Photographs

Appendix C-3.

Photographs of Habitats Identified

Watercourse



Channelised Watercourse



Village / Developed Area



Active Farmland



Abandoned Farmland



Grassland



Shrubland



Woodland



Plantation



Photographs of Species of Conservation Importance Recorded from the Surveys

Flora

Aquilaria sinensis



Rhodoleia championii



Fauna

Black Kite



Crested Goshawk



Chinese Pond Heron



Little Egret



Great Egret



Grey Heron



Collared Crow



Conjoined Swift



Lesser Band Dart



Forget-me-not



Common Cerulean



Metallic Cerulean



Tiny Grass Blue



Courtesan



Blue-spotted Dusk-hawker



Dingy Dusk-hawker



Somanniathelphusa zanklon



Appendix C-4

Lists of fauna recorded by
habitat during field surveys

Appendix C-4.

Table 1. List of mammals recorded in this study with the maximum number counted

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³			
			Application Site	500m Assessment Area		
			VDA	AbF	VDA	WL
Musk Shrew <i>Suncus murinus</i>	-	Common. Fairly widely distributed in countryside areas throughout Hong Kong.			1	
Brown Rat <i>Rattus norvegicus</i>	-	Widely distributed in urban areas associated with human activity.	2			
Eurasian Wild Pig <i>Sus scrofa</i>	-	Very Common. Very widely distributed in countryside areas throughout Hong Kong.		3		2
Red Muntjac <i>Muntiacus vaginalis</i>	PRC	Very Common. Very widely distributed in countryside areas throughout Hong Kong.				2

- *Species considered of conservation importance are highlighted in bold type.

Notes:

- The conservation and protection status of species was made reference to Fellowes *et al.* (2002), the Red List of China's Biodiversity (MEE 2023), IUCN (2024), the List of National Key Protected Wild Animals in China, CITES (2024), Cap. 170 and Cap. 586.
 - Conservation status by Fellowes *et al.* (2002): LC = Local Concern; PRC = Potential Regional Concern; RC = Regional Concern; PGC = Potential Global Concern; GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
 - Conservation status by Red List of China's Biodiversity (RLCB) (MEE 2023): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Conservation status by IUCN (2024): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Protection status in the List of National Key Protected Wild Animals (NKPWA) in China: I = Class I Protected Species in China; II = Class II Protected Species in China.
 - Protection status by CITES (2024): I = Listed in CITES Appendix I; II = Listed in CITES Appendix II.
 - Cap. 170 = Wild Animals Protection Ordinance.
 - Cap. 586 = Protection of Endangered Species of Animals and Plants Ordinance.
- Status in Hong Kong follows AFCD (2024) and Shek (2006).
- Habitat: AbF = Abandoned Farmland; AcF = Active Farmland; CW = Channelised Watercourse; GL = Grassland; PT = Plantation; SL = Shrubland; VDA = Village / Developed Area; WC = Watercourse; WL = Woodland.

Table 2. List of birds recorded in this study with the maximum number counted

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³														
			Application Site				500m Assessment Area										
			AbF	VDA	WC	WL	AbF	AcF	CW	GL	IF	PT	SL	VDA	WC	WL	
Chinese Francolin <i>Francolinus pintadeanus</i>	VU(RLCB)	Common resident in upland areas										2					
Savanna Nightjar <i>Caprimulgus affinis</i>	-	Uncommon local resident and passage migrant					1					1					
House Swift <i>Apus nipalensis</i>	-	Abundant spring migrant and locally common resident										7					
Greater Coucal <i>Centropus sinensis</i>	NKPWA(II)	Common and widespread resident					4					3					
Lesser Coucal <i>Centropus bengalensis</i>	NKPWA(II)	Locally common resident					2					3					
Asian Koel <i>Eudynamys scolopaceus</i>	-	Common and widespread resident				1		2						3			2
Plaintive Cuckoo <i>Cacomantis merulinus</i>	-	Uncommon summer visitor with occasional autumn and winter records						1			1						
Large Hawk-cuckoo <i>Hierococcyx sparveroides</i>	-	Common summer visitor					1										1
Spotted Dove <i>Spilopelia chinensis</i>	-	Abundant and widespread resident						1	2		1				4		
White-breasted Waterhen <i>Amaurornis phoenicurus</i>	-	Common and widespread resident, possible also a migrant and winter visitor					3	2	1							1	
Little Ringed Plover <i>Charadrius dubius</i>	(LC)	Common winter visitor and passage migrant, also a scarce breeding species						18									
Common Snipe <i>Gallinago gallinago</i>		Common and widespread passage migrant and winter visitor; occasional summer visitor							3								
Common Sandpiper <i>Actitis hypoleucos</i>	-	Common and widespread passage migrant and winter visitor; occasional summer visitor								1							
Green Sandpiper <i>Tringa ochropus</i>	-	Common passage migrant and winter visitor							3								
Wood Sandpiper <i>Tringa glareola</i>	LC	Common passage migrant and winter visitor							2								
Black-crowned Night Heron <i>Nycticorax nycticorax</i>	(LC)	Common resident, passage migrant and winter visitor, mainly to Deep Bay area								2		3					
Eastern Cattle Egret <i>Bubulcus coromanda</i>	(LC)	Common passage migrant and winter visitor, with summer breeding populations							1								
Chinese Pond Heron <i>Ardeola bacchus</i>	PRC (RC)	Common all year, with winter migrant and breeding populations					1	2	4								
Grey Heron <i>Ardea cinerea</i>	PRC	Common winter visitor mainly to Deep Bay area, scarce in summer								1							
Great Egret <i>Ardea alba</i>	PRC (RC)	Abundant all year, mainly in Deep Bay area								2							
Little Egret <i>Egretta garzetta</i>	PRC (RC)	Abundant and widespread breeding species, passage migrant and winter visitor								5						1	

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³													
			Application Site				500m Assessment Area									
			AbF	VDA	WC	WL	AbF	AcF	CW	GL	IF	PT	SL	VDA	WC	WL
Barn Swallow <i>Hirundo rustica</i>	-	Abundant passage migrant, common breeding species and uncommon winter visitor	3				5	1			3			11		
Yellow-browed Warbler <i>Phylloscopus inornatus</i>	-	Abundant and widespread winter visitor and migrant														2
Pallas's Leaf Warbler <i>Phylloscopus proregulus</i>	-	Common winter visitor and passage migrant				1										1
Dusky Warbler <i>Phylloscopus fuscatus</i>	-	Abundant autumn migrant and winter visitor						2							1	1
Arctic Warbler <i>Phylloscopus borealis</i>	-	Passage migrant, common in autumn and uncommon in spring														2
Yellow-bellied Prinia <i>Prinia flaviventris</i>	-	Abundant and widespread resident	1				7	1		4			3			
Plain Prinia <i>Prinia inornata</i>	-	Common but localised resident	2				3	1		1			1			
Common Tailorbird <i>Orthotomus sutorius</i>	-	Abundant and widespread resident						1		1			1	1		2
Swinhoe's White-eye <i>Zosterops simplex</i>	-	Abundant breeding resident with increased numbers in winter												1		3
Chinese Hwamei <i>Garrulax canorus</i>	CITES(II); NKPWA(II); Cap.586	Common and widespread resident								1			1			
Masked Laughingthrush <i>Pterorhinus perspicillatus</i>	-	Abundant resident										3	2	4		4
Greater Necklaced Laughingthrush <i>Pterorhinus pectoralis</i>	-	Widespread and locally common resident								1						
Crested Myna <i>Acridotheres cristatellus</i>	-	Abundant resident		2			8	8	5	3				11		
Black-collared Starling <i>Gracupica nigricollis</i>	-	Common and widespread resident	1				1	5	2				4	3	3	1
Oriental Magpie Robin <i>Copsychus saularis</i>	-	Abundant and widespread resident		1	1	1		1	2			1		4		3
Siberian Rubythroat <i>Calliope calliope</i>	NKPWA(II)	Locally common winter visitor and passage migrant					1									
Daurian Redstart <i>Phoenicurus auroreus</i>	-	Common winter visitor					1	2			1		2	1		3
Amur Stonechat <i>Saxicola stejnegeri</i>	-	Common passage migrant and winter visitor	1				3	1					1	3		2
Scarlet-backed Flowerpecker <i>Dicaeum cruentatum</i>	-	Locally common resident														2
Fork-tailed Sunbird <i>Aethopyga christinae</i>	-	Common and widespread resident and winter visitor												1		1
Eurasian Tree Sparrow <i>Passer montanus</i>	-	Abundant and widespread resident		2		2	5	24	9	3				18	3	3
Scaly-breasted Munia <i>Lonchura punctulata</i>	-	Abundant and widespread resident	23				18	9		3				6		

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³													
			Application Site				500m Assessment Area									
			AbF	VDA	WC	WL	AbF	AcF	CW	GL	IF	PT	SL	VDA	WC	WL
White-rumped Munia <i>Lonchura striata</i>	-	Common and widespread resident						3						1		
Eastern Yellow Wagtail <i>Motacilla tschutschensis</i>	-	Common passage migrant and winter visitor						8								
Grey Wagtail <i>Motacilla cinerea</i>	-	Common passage migrant and winter visitor						3								
White Wagtail <i>Motacilla alba</i>	-	Abundant and widespread; present all year with resident, passage migrant and winter visitor		1				1	4					1		
Richard's Pipit <i>Anthus richardi</i>	-	Common passage migrant, winter visitor and resident						1								
Olive-backed Pipit <i>Anthus hodgsoni</i>	-	Common winter visitor and passage migrant	2					4		1			2			2
Little Bunting <i>Emberiza pusilla</i>	-	Very common spring passage migrant and common winter visitor	3				3			3						
Black-faced Bunting <i>Emberiza spodocephala</i>	-	Common winter visitor and passage migrant								1						
Total no. of species recorded			10	4	2	8	20	32	17	19	9	3	12	22	6	28

- *Species considered of conservation importance are highlighted in bold type.

Notes:

- The conservation and protection status of species was made reference to Fellowes *et al.* (2002), the Red List of China's Biodiversity (MEE 2023), IUCN (2024), the List of National Key Protected Wild Animals in China, CITES (2024), Cap. 170 and Cap. 586.
 - Conservation status by Fellowes *et al.* (2002): LC = Local Concern; PRC = Potential Regional Concern; RC = Regional Concern; PGC = Potential Global Concern; GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
 - Conservation status by Red List of China's Biodiversity (RLCB) (MEE 2023): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Conservation status by IUCN (2024): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Protection status in the List of National Key Protected Wild Animals (NKPWA) in China: I = Class I Protected Species in China; II = Class II Protected Species in China.
 - Protection status by CITES (2024): I = Listed in CITES Appendix I; II = Listed in CITES Appendix II.
 - Cap. 170 = Wild Animals Protection Ordinance. All wild birds in Hong Kong are protected under Cap. 170.
 - Cap. 586 = Protection of Endangered Species of Animals and Plants Ordinance.
- Status in Hong Kong follows HKBWS (2022).
- Habitat: AbF = Abandoned Farmland; AcF = Active Farmland; CW = Channelised Watercourse; GL = Grassland; IF = In Flight; PT = Plantation; SL = Shrubland; VDA = Village / Developed Area; WC = Watercourse; WL = Woodland.

Table 3. List of amphibians recorded in this study with the maximum number counted

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³										
			Application Site			500m Assessment Area							
			AbF	VDA	WL	AbF	AcF	CW	GL	SL	VDA	WC	WL
Asian Common Toad <i>Duttaphrynus melanostictus</i>	-	Very Common. Widely distributed in Hong Kong.	3	2		3	2	2	1		3		2
Spotted Narrow-mouthed Frog <i>Kalophrynus interlineatus</i>	-	Locally Common. Widely distributed from low to moderate altitudes in northern and central New Territories.				>50			>50				
Asiatic Painted Frog <i>Kaloula pulchra</i>	-	Very Common. Widely distributed in Hong Kong.			1	6	3	10	2		4		3
Butler's Pigmy Frog <i>Microhyla butleri</i>	-	Locally Common. Widely distributed in Hong Kong.			2	2							3
Ornate Pigmy Frog <i>Microhyla fissipes</i>	-	Common. Widely distributed in Hong Kong.	>50		1	>50	>50	1	3		2		1
Marbled Pigmy Frog <i>Microhyla pulchra</i>	-	Locally Common. Widely distributed in Hong Kong.				>50	>50		1		2		
Paddy Frog <i>Fejervarya multistriata</i>	-	Very Common. Widely distributed throughout Hong Kong.	6			12	7	6	4	1	3	3	2
Chinese Bullfrog <i>Hoplobatrachus chinensis</i>	PRC; RLCB(EN); NKPWA(II)	Fairly Common. Widely distributed in Hong Kong.										3	
Günther's Frog <i>Sylvirana guentheri</i>	-	Very Common. Widely distributed throughout Hong Kong.				4			3		1	6	1
Brown Tree Frog <i>Polypedates megacephalus</i>	-	Very Common. Widely distributed throughout Hong Kong.	6	3	3	7	3		12	1	8		6
Total no. of species recorded			4	2	4	9	6	4	8	2	7	3	7

- *Species considered of conservation importance are highlighted in bold type.

Notes:

- The conservation and protection status of species was made reference to Fellowes *et al.* (2002), the Red List of China's Biodiversity (MEE 2023), IUCN (2024), the List of National Key Protected Wild Animals in China, CITES (2024), Cap. 170 and Cap. 586.
 - Conservation status by Fellowes *et al.* (2002): LC = Local Concern; PRC = Potential Regional Concern; RC = Regional Concern; PGC = Potential Global Concern; GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
 - Conservation status by Red List of China's Biodiversity (RLCB) (MEE 2023): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Conservation status by IUCN (2024): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Protection status in the List of National Key Protected Wild Animals (NKPWA) in China: I = Class I Protected Species in China; II = Class II Protected Species in China.
 - Protection status by CITES (2024): I = Listed in CITES Appendix I; II = Listed in CITES Appendix II.
 - Cap. 170 = Wild Animals Protection Ordinance. All wild birds in Hong Kong are protected under Cap. 170.
 - Cap. 586 = Protection of Endangered Species of Animals and Plants Ordinance.
- Status in Hong Kong follows AFCD (2024) and Chan *et al.* (2005).
- Habitat: AbF = Abandoned Farmland; AcF = Active Farmland; CW = Channelised Watercourse; GL = Grassland; PT = Plantation; SL = Shrubland; VDA = Village / Developed Area; WC = Watercourse; WL = Woodland.

Table 4. List of reptiles recorded in this study with the maximum number counted

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³								
			Application Site		500m Assessment Area						
			AbF	VDA	AbF	AcF	CW	GL	SL	VDA	WL
Red-eared Slider <i>Trachemys scripta</i>	-	Introduced and naturalised. Widely distributed and commonly found in reservoirs or ponds in urban parks.					3				
Changeable Lizard <i>Calotes wangi</i>	-	Common. Widely distributed throughout Hong Kong.		1	1			1	1	1	
Long-tailed Skink <i>Eutropis longicaudata</i>	-	Fairly common. Widely distributed throughout Hong Kong.				1	1	1		1	
Chinese Skink <i>Plestiodon chinensis</i>	-	Common in many cultivated areas. Widely distributed throughout Hong Kong.			2	1					
Chinese Gecko <i>Gekko chinensis</i>	-	Widely distributed throughout Hong Kong.									2
Bowring's Gecko <i>Hemidactylus bowringii</i>	-	Very common. Distributed throughout Hong Kong.	1	2	3	1		1		6	5
Large-spotted Cat Snake <i>Boiga multomaculata</i>	-	Uncommon. Distributed in New Territories, Lantau Island and Hong Kong Island.						1			
Bamboo Snake <i>Trimeresurus albolabris</i>	-	Very common and widespread in Hong Kong.						1	1		1
Total no. of species recorded			1	2	3	3	2	5	2	3	3

- *Species considered of conservation importance are highlighted in bold type.

Notes:

- The conservation and protection status of species was made reference to Fellowes *et al.* (2002), the Red List of China's Biodiversity (MEE 2023), IUCN (2024), the List of National Key Protected Wild Animals in China, CITES (2024), Cap. 170 and Cap. 586.
 - Conservation status by Fellowes *et al.* (2002): LC = Local Concern; PRC = Potential Regional Concern; RC = Regional Concern; PGC = Potential Global Concern; GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
 - Conservation status by Red List of China's Biodiversity (RLCB) (MEE 2023): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Conservation status by IUCN (2024): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Protection status in the List of National Key Protected Wild Animals (NKPWA) in China: I = Class I Protected Species in China; II = Class II Protected Species in China.
 - Protection status by CITES (2024): I = Listed in CITES Appendix I; II = Listed in CITES Appendix II.
 - Cap. 170 = Wild Animals Protection Ordinance. All wild birds in Hong Kong are protected under Cap. 170.
 - Cap. 586 = Protection of Endangered Species of Animals and Plants Ordinance.
- Status in Hong Kong follows AFCD (2024) and Karsen *et al.* (1998).
- Habitat: AbF = Abandoned Farmland; AcF = Active Farmland; CW = Channelised Watercourse; GL = Grassland; PT = Plantation; SL = Shrubland; VDA = Village / Developed Area; WC = Watercourse; WL = Woodland.

Table 5. List of butterflies recorded in this study with the maximum number counted

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³											
			Application Site			500m Assessment Area								
			AbF	VDA	WL	AbF	AcF	CW	GL	PT	SL	VDA	WC	WL
Grey Scrub Hopper <i>Aeromachus jhora</i>	-	Rare. Yung Shue O, Kuk Po, Tai Lam, Sha Lo Tung				2								
Bush Hopper <i>Ampittia dioscorides</i>	-	Uncommon. Widely distributed throughout Hong Kong.				3								
Formosan Swift <i>Borbo cinnara</i>	-	Common. Widely distributed throughout Hong Kong.					1		1		1	1		
Banana Skipper <i>Erionota torus</i>	-	Uncommon. Widely distributed throughout Hong Kong.					3							
Chestnut Bob <i>Iambrix salsala</i>	-	Uncommon. Widely distributed throughout Hong Kong.									1		3	
Common Straight Swift <i>Parnara guttata</i>	-	Common. Widely distributed throughout Hong Kong.							1					
Conjoined Swift <i>Pelopidas conjunctus</i>	-	Rare. Ngong Ping, Shing Mun, Pak Tam Chung, Fung Yuen.							1					
Contiguous Swift <i>Polytremis lubricans</i>	-	Common. Widely distributed throughout Hong Kong.				1	1		1				1	
Lesser Band Dart <i>Potanthus trachala</i>	-	Rare. Widely distributed throughout Hong Kong.			2									
Indian Palm Bob <i>Suastus gremius</i>	-	Uncommon. Widely distributed throughout Hong Kong.									2			
Greenish Palm Dart <i>Telicota bambusae</i>	-	Uncommon. Widely distributed throughout Hong Kong.									1			
Chestnut Angle <i>Odontoptilum angulata</i>	-	Common. Widely distributed throughout Hong Kong.							1		1			
Purple Sapphire <i>Heliophorus epicles</i>	-	Common. Widely distributed throughout Hong Kong.				2	3		1					
Common Hedge Blue <i>Acytolepis puspa</i>	-	Common. Widely distributed throughout Hong Kong.				1					1		1	
Forget-me-not <i>Catochrysops strabo</i>	-	Very Rare. Pui O, Tai Po Kau, Fung Yuen, Shing Mun, Sha Lo Wan.				1	1		3		2			
Plains Cupid <i>Luthrodes pandava</i>	-	Uncommon. Widely distributed throughout Hong Kong.									3			
Tailed Cupid <i>Everes lacturnus</i>	-	Common. Widely distributed throughout Hong Kong.				3			2		4			
Metallic Cerulean <i>Jamides alecto</i>	-	Very Rare. Victoria Peak, Fung Yuen, Chuen Lung, Mui Wo.			2	1								3
Common Cerulean <i>Jamides celeno</i>	-	Rare. Shek Pik, High Junk Peak, Shek Mun Kap, Fung Yuen, Pui O, Ma On Shan.			1	1						1		1
Quaker <i>Neopithecops zalmora</i>	-	Uncommon. Records from Shek Mun Kap, Fan Lau, Tung Chung, Fung Yuen, Wu Kau Tang, Pak Tam Chung.									1		1	
Tailless Line Blue <i>Prosotas dubiosa</i>	-	Vagrant. Records from North Lantau Island.			3						1	1		3

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³											
			Application Site			500m Assessment Area								
			AbF	VDA	WL	AbF	AcF	CW	GL	PT	SL	VDA	WC	WL
Pale Grass Blue <i>Pseudozizeeria maha</i>	-	Very Common. Widely distributed throughout Hong Kong.							2			1		
Tiny Grass Blue <i>Zizula hylax</i>	-	Very Rare. Lung Kwu Tan, Fung Yuen, Sha Lo Wan.				2			2		1			
Silver Royal <i>Ancema blanka</i>	-	-									2			
Long-banded Silverline <i>Cigaritis lohita</i>	-	Common. Widely distributed throughout Hong Kong.							1		1			
Plum Judy <i>Abisara echerius</i>	-	Very Common. Widely distributed throughout Hong Kong.								1				
Common Duffer <i>Discophora sondaica</i>	-	Uncommon. Widely distributed throughout Hong Kong.												1
Large Faun <i>Faunis eumeus</i>	-	Common. Widely distributed throughout Hong Kong.			1									1
Tawny Rajah <i>Charaxes bernardus</i>	-	Common. Widely distributed throughout Hong Kong.									1			1
Common Nawab <i>Polyura athamas</i>	-	Uncommon. Records from Fung Yuen, Cloudy Hill, Victoria Peak, Ma On Shan									3			1
Plain Tiger <i>Danaus chrysippus</i>	-	Uncommon. Records from Lung Kwu Tan, Tong Fuk, Tai Ho, Tung Chung, Pak Tam Chung.				2			1					
Common Tiger <i>Danaus genutia</i>	-	Common. Widely distributed throughout Hong Kong.				3								
Common Indian Crow <i>Euploea core</i>	-	Common. Widely distributed throughout Hong Kong.							1	2				3
Blue-spotted Crow <i>Euploea midamus</i>	-	Very Common. Widely distributed throughout Hong Kong.			1			1	3			1		6
Common Sergeant <i>Athyma perius</i>	-	Uncommon. Widely distributed throughout Hong Kong.									1			1
Staff Sergeant <i>Athyma selenophora</i>	-	Common. Widely distributed throughout Hong Kong.									1			1
Common Mapwing <i>Cyrestis thyodamas</i>	-	Common. Widely distributed throughout Hong Kong.							1				1	1
Courtesan <i>Euripus nyctelius</i>	-	Very Rare. Records from Tai Po, Kai Shan									1			
Red-ring Skirt <i>Hestina assimilis</i>	-	Common. Widely distributed throughout Hong Kong.								2				
Great Egg-fly <i>Hypolimnas bolina</i>	-	Common. Widely distributed throughout Hong Kong.				9	2	1	1		1	4		3
Grey Pansy <i>Junonia atlites</i>	-	Common. Widely distributed throughout Hong Kong.				1								
Chocolate Pansy <i>Junonia iphita</i>	-	Common. Widely distributed throughout Hong Kong.				1			2					
Lemon Pansy <i>Junonia lemonias</i>	-	Common. Widely distributed throughout Hong Kong.				1			1					

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³											
			Application Site			500m Assessment Area								
			AbF	VDA	WL	AbF	AcF	CW	GL	PT	SL	VDA	WC	WL
Common Archduke <i>Lexias pardalis</i>	-	Suspected Species. Widely distributed throughout Hong Kong.			1									2
Common Sailer <i>Neptis hylas</i>	-	Very Common. Widely distributed throughout Hong Kong.		2		7	1		2			2		4
Common Jester <i>Symbrenthia lilaea</i>		Common. Widely distributed throughout Hong Kong.												2
Common Evening Brown <i>Melanitis leda</i>	-	Common. Widely distributed throughout Hong Kong.												1
Dark Evening Brown <i>Melanitis phedima</i>	-	Uncommon. Widely distributed throughout Hong Kong.									1	1		2
Dark-brand Bush Brown <i>Mycalesis mineus</i>	-	Very Common. Widely distributed throughout Hong Kong.	1				3		1					1
South China Bush Brown <i>Mycalesis mucianus</i>	-	Common. Widely distributed throughout Hong Kong.				4			1					1
Common Five-ring <i>Ypthima baldus</i>	-	Very Common. Widely distributed throughout Hong Kong.				2	1	2	5		1	3		4
Common Bluebottle <i>Graphium sarpedon</i>	-	Very Common. Widely distributed throughout Hong Kong.	2			1	1	1	2			1		3
Great Mormon <i>Papilio agenor</i>	-	Very Common. Widely distributed throughout Hong Kong.				1	1		2		1	2		3
Chinese Peacock <i>Papilio bianor</i>	-	Common. Widely distributed throughout Hong Kong.				2			1			1		
Lime Butterfly <i>Papilio demoleus</i>	-	Common. Widely distributed throughout Hong Kong.				1					1			
Red Helen <i>Papilio helenus</i>	-	Very Common. Widely distributed throughout Hong Kong.				1	1	1	2			1		1
Common Mormon <i>Papilio polytes</i>	-	Very Common. Widely distributed throughout Hong Kong.				6	2	1	1	1	1	4	1	2
Swallowtail <i>Papilio xuthus</i>	-	Rare. Kap Lung, Ma On Shan, Tai Tam, Sha Lo Wan, Kat O, Lung Kwu Tan, Wu Kau Tang, Lung Kwu Chau.									1			
Lemon Emigrant <i>Catopsilia pomona</i>	-	Common. Widely distributed throughout Hong Kong.		4				1	5		3	8		3
Three-spot Grass Yellow <i>Eurema blanda</i>	-	Common. Widely distributed throughout Hong Kong.		5		1	2		7					
Common Grass Yellow <i>Eurema hecabe</i>	-	Very Common. Widely distributed throughout Hong Kong.				6	3		2					1
Painted Jezebel <i>Delias hyparete</i>	-	Uncommon. Widely distributed throughout Hong Kong.									1			
Red-base Jezebel <i>Delias pasithoe</i>	-	Very Common. Widely distributed throughout Hong Kong.			1			2	1			4		3
Indian Cabbage White <i>Pieris canidia</i>	-	Very Common. Widely distributed throughout Hong Kong.				3	3	1	6			4	1	
Total no. of species recorded			2	3	8	28	16	9	32	4	24	21	3	32

- *Species considered of conservation importance are highlighted in bold type.

Notes:

1. The conservation and protection status of species was made reference to Fellowes *et al.* (2002), the Red List of China's Biodiversity (MEE 2023), IUCN (2024), the List of National Key Protected Wild Animals in China, CITES (2024), Cap. 170 and Cap. 586.
 - a) Conservation status by Fellowes *et al.* (2002): LC = Local Concern; PRC = Potential Regional Concern; RC = Regional Concern; PGC = Potential Global Concern; GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
 - b) Conservation status by Red List of China's Biodiversity (RLCB) (MEE 2023): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - c) Conservation status by IUCN (2024): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - d) Protection status in the List of National Key Protected Wild Animals (NKPWA) in China: I = Class I Protected Species in China; II = Class II Protected Species in China.
 - e) Protection status by CITES (2024): I = Listed in CITES Appendix I; II = Listed in CITES Appendix II.
 - f) Cap. 170 = Wild Animals Protection Ordinance. All wild birds in Hong Kong are protected under Cap. 170.
 - g) Cap. 586 = Protection of Endangered Species of Animals and Plants Ordinance.
2. Status in Hong Kong follows AFCD (2024) and Chan *et al.* (2011).
3. Habitat: AbF = Abandoned Farmland; AcF = Active Farmland; CW = Channelised Watercourse; GL = Grassland; PT = Plantation; SL = Shrubland; VDA = Village / Developed Area; WC = Watercourse; WL = Woodland.

Table 6. List of odonates recorded in this study with the maximum number counted

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³											
			Application Site				500m Assessment Area							
			AbF	VDA	WC	WL	AbF	AcF	CW	GL	SL	VDA	WC	WL
Orange-tailed Midget <i>Agriocnemis femina</i>	-	Abundant. Widely distributed in disused paddy fields, marshes, ditches and weedy ponds margins.											1	
Orange-tailed Sprite <i>Ceriagrion auranticum</i>	-	Abundant. Widely distributed in weedy ponds, marshes, abandoned fields or grasslands adjacent to waters.			1						1		1	
Common Bluetail <i>Ischnura senegalensis</i>	-	Abundant. Widely distributed throughout Hong Kong.						2	3				1	
Marsh Dancer <i>Onychargia atrocyana</i>	-	Common. Found in abandoned paddy fields and marshes with dense vegetation.												1
Orange-faced Sprite <i>Pseudagrion rubriceps</i>	-	Common. Widely distributed in ponds and weedy margins of slow flowing streams.						2	2				3	
Yellow Featherlegs <i>Copera marginipes</i>	-	Abundant. Widely distributed throughout Hong Kong.			1		3	5	2				1	
Blue-spotted Dusk-hawker <i>Gynacantha japonica</i>	LC	Common. Widespread in well-shaded woodlands.												1
Dingy Dusk-hawker <i>Gynacantha subinterrupta</i>	LC	Uncommon. Records from in HK Wetland Park, Lantau Island, Ping Shan Chai, Sha Lo Tung and Tai Mo Shan.				1								3
Common Flangetail <i>Ictinogomphus pertinax</i>	-	Common. Widely distributed throughout Hong Kong.			2				2				3	
Asian Amberwing <i>Brachythemis contaminata</i>	-	Abundant. Widely distributed in weedy ponds and sluggish streams.						5	6			2	3	
Forest Chaser <i>Lyriothemis elegantissima</i>	-	Common. Widespread throughout Hong Kong.									1			6
Russet Percher <i>Neurothemis fulvia</i>	-	Common. Widely distributed throughout Hong Kong.					3	2		1				
Red-faced Skimmer <i>Orthetrum chrysis</i>	-	Abundant. Widely distributed throughout Hong Kong.					3			1			1	
Common Blue Skimmer <i>Orthetrum glaucum</i>	-	Abundant. Widely distributed throughout Hong Kong.						2	1	1			1	
Marsh Skimmer <i>Orthetrum luzonicum</i>	-	Abundant. Widely distributed in abandoned paddies, marshy swampy and boggy locations					3			1				
Common Red Skimmer <i>Orthetrum pruinosum</i>	-	Abundant. Widely distributed in slow streams, ponds, rain puddles and irrigation conduits.					1	2	1				3	
Green Skimmer <i>Orthetrum sabina</i>	-	Abundant. Widely distributed throughout Hong Kong.					2	1		1		1	1	
Wandering Glider <i>Pantala flavescens</i>	-	Abundant. Widely distributed all over Hong Kong.	4	1			11	3	13	3	1	15	4	
Pied Skimmer <i>Pseudothemis zonata</i>	-	Common. Widely distributed throughout Hong Kong.							1				2	1
Variiegated Flutterer <i>Rhyothemis variegata</i>	-	Common. Widely distributed throughout Hong Kong.	3				2	1	3	6		1	1	
Evening Skimmer <i>Tholymis tillarga</i>	-	Common. Widely distributed throughout Hong Kong..							1					

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³											
			Application Site				500m Assessment Area							
			AbF	VDA	WC	WL	AbF	AcF	CW	GL	SL	VDA	WC	WL
Saddlebag Glider <i>Tramea virginia</i>	-	Abundant. Widely distributed in trees adjacent to ponds and lakes throughout Hong Kong.								1	2			
Crimson Dropwing <i>Trithemis aurora</i>	-	Abundant. Widely distributed throughout Hong Kong.			2				2				1	
Indigo Dropwing <i>Trithemis festiva</i>	-	Abundant. Widespread in Hong Kong.			4		2		3	5			3	
Total no. of species recorded			2	1	5	1	9	10	13	9	4	4	16	6

- **Species considered of conservation importance are highlighted in bold type.*

Notes:

- The conservation and protection status of species was made reference to Fellowes *et al.* (2002), the Red List of China's Biodiversity (MEE 2023), IUCN (2024), the List of National Key Protected Wild Animals in China, CITES (2024), Cap. 170 and Cap. 586.
 - Conservation status by Fellowes *et al.* (2002): LC = Local Concern; PRC = Potential Regional Concern; RC = Regional Concern; PGC = Potential Global Concern; GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
 - Conservation status by Red List of China's Biodiversity (RLCB) (MEE 2023): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Conservation status by IUCN (2024): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Protection status in the List of National Key Protected Wild Animals (NKPWA) in China: I = Class I Protected Species in China; II = Class II Protected Species in China.
 - Protection status by CITES (2024): I = Listed in CITES Appendix I; II = Listed in CITES Appendix II.
 - Cap. 170 = Wild Animals Protection Ordinance. All wild birds in Hong Kong are protected under Cap. 170.
 - Cap. 586 = Protection of Endangered Species of Animals and Plants Ordinance.
- Status in Hong Kong follows AFCD (2024) and Tam *et al.* (2011).
- Habitat: AbF = Abandoned Farmland; AcF = Active Farmland; CW = Channelised Watercourse; GL = Grassland; PT = Plantation; SL = Shrubland; VDA = Village / Developed Area; WC = Watercourse; WL = Woodland.

Table 7. List of freshwater fishes recorded in this study with their relative abundance

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³			
			Application Site	500m Assessment Area		
			WC	AcF	CW	WC
Chinese Barb <i>Barbodes semifasciolatus</i>	-	Common. Widely distributed in most streams and reservoirs.	**	*		***
Goldfish <i>Carassius auratus</i>	-	Not common in streams but occurs in many reservoirs and cultivated in fishponds.			*	
Amur Carp <i>Cyprinus rubrofuscus</i>	-	-			*	
Suckermouth Catfish <i>Pterygoplichthys</i> sp.	-	-			*	
North African Catfish <i>Clarias gariepinus</i>	-	Introduced. Records from North New Territories.			*	*
Redbelly Tilapia <i>Coptodon zillii</i>	-	Introduced. Records from streams, rivers and estuaries throughout Hong Kong.			**	
Nile Tilapia <i>Oreochromis niloticus</i>	-	Common. A widespread species occurring in most local streams, rivers and reservoirs. The fish is also cultivated in some fish farms.			***	***
Mosquito Fish <i>Gambusia affinis</i>	-	Common. Introduced as a mosquito-control agent, widespread in local freshwater bodies.	***	***		***
Asian Swamp Eel <i>Monopterus albus</i>	-	Common. Usually found in cultivated land and marshes.				*
Dwarf Snakehead <i>Channa gachua</i>	-	Probably an introduced species. Records from a few streams in North District.	*	*	**	**
Blotched Snakehead <i>Channa maculata</i>	-	Uncommon. Records from a few streams in North District.			*	
Snakehead Murrel <i>Channa striata</i>	-	Uncommon in the wild and is an introduced species. Records from a few streams in North District and on Lantau Island.			*	
Total no. of species recorded			3	3	9	6

- Species considered of conservation importance are highlighted in bold type.
- Code for Abundance: * = scarce or occasional; ** = frequent; *** = abundant

Notes:

1. The conservation and protection status of species was made reference to Fellowes *et al.* (2002), the Red List of China's Biodiversity (MEE 2023), IUCN (2024), the List of National Key Protected Wild Animals in China, CITES (2024), Cap. 170 and Cap. 586.
 - a) Conservation status by Fellowes *et al.* (2002): LC = Local Concern; PRC = Potential Regional Concern; RC = Regional Concern; PGC = Potential Global Concern; GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
 - b) Conservation status by Red List of China's Biodiversity (RLCB) (MEE 2023): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - c) Conservation status by IUCN (2024): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - d) Protection status in the List of National Key Protected Wild Animals (NKPWA) in China: I = Class I Protected Species in China; II = Class II Protected Species in China.
 - e) Protection status by CITES (2024): I = Listed in CITES Appendix I; II = Listed in CITES Appendix II.
 - f) Cap. 170 = Wild Animals Protection Ordinance. All wild birds in Hong Kong are protected under Cap. 170.
 - g) Cap. 586 = Protection of Endangered Species of Animals and Plants Ordinance.
2. Status in Hong Kong follows AFCD (2024) and Lee *et al.* (2004).
3. Habitat: AbF = Abandoned Farmland; AcF = Active Farmland; CW = Channelised Watercourse; GL = Grassland; PT = Plantation; SL = Shrubland; VDA = Village / Developed Area; WC = Watercourse; WL = Woodland.

Table 8. List of freshwater invertebrates recorded in this study with their relative abundance

Species	Conservation and Protection Status ¹	Status in Hong Kong ²	Habitat ³							
			Application Site			500m Assessment Area				
			WC			AcF	AbF	AcF	CW	WC
1	2	3								
Yellow Featherlegs (Larvae) <i>Copera marginipes</i>	-	Abundant. Widely distributed throughout Hong Kong.								*
Unidentified Skimmer (Larvae) <i>Orthetrum</i> sp.	-	-	*		*					*
Crimson Dropwing (Larvae) <i>Trithemis aurora</i>	-	Abundant. Found in marshes, ponds, streams, and even ornamental ponds in urban areas. Widely distributed throughout Hong Kong.								*
Unidentified Dropwing <i>Trithemis</i> sp.	-	-	*							
Water Strider <i>Ptilomera tigrina</i>	-	-								*
Blood Worm Chironomidae sp.	-	-								**
Freshwater Shrimp <i>Caridina cantonensis</i>	-	Common and widespread throughout Hong Kong.								***
Freshwater Prawn <i>Macrobrachium nipponense</i>	-	Generally widespread and abundant in Hong Kong. Known from Mai Po, Tai Tam, Ho Pui, Lau Shui Heung, Ha Wo Hang Tsuen.	*						*	**
Freshwater Crab <i>Somanniathelphusa zanklon</i>	GC; IUCN(EN)	Common and widespread, especially in New Territories and on Lantau.								*
Freshwater Snail <i>Angulyagra polyzonata</i>	-	-	**	*	**	**				
Freshwater Snail <i>Sinotaia quadrata</i>	-	-	**	*	**	**	**			
Freshwater Snail <i>Radix plicatulus</i>	-	-								**
Freshwater Snail <i>Physella acuta</i>	-	-							***	**
Freshwater Snail <i>Segmentina succinea</i>	-	-							*	**
Apple Snail <i>Pomacea canaliculata</i>	-	-	**		*	*	**	**	***	***
Freshwater Snail <i>Melanoides tuberculata</i>	-	-				*			**	**
Total no. of species recorded			6	2	4	4	1	2	6	12

- Species considered of conservation importance are highlighted in bold type.

- Code for Abundance: * = scarce or occasional; ** = frequent; *** = abundant

Notes:

- The conservation and protection status of species was made reference to Fellowes *et al.* (2002), the Red List of China's Biodiversity (MEE 2023), IUCN (2024), the List of National Key Protected Wild Animals in China, CITES (2024), Cap. 170 and Cap. 586.
 - Conservation status by Fellowes *et al.* (2002): LC = Local Concern; PRC = Potential Regional Concern; RC = Regional Concern; PGC = Potential Global Concern; GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
 - Conservation status by Red List of China's Biodiversity (RLCB) (MEE 2023): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Conservation status by IUCN (2024): VU = Vulnerable; EN = Endangered; CR = Critically Endangered.
 - Protection status in the List of National Key Protected Wild Animals (NKPWA) in China: I = Class I Protected Species in China; II = Class II Protected Species in China.
 - Protection status by CITES (2024): I = Listed in CITES Appendix I; II = Listed in CITES Appendix II.
 - Cap. 170 = Wild Animals Protection Ordinance. All wild birds in Hong Kong are protected under Cap. 170.
 - Cap. 586 = Protection of Endangered Species of Animals and Plants Ordinance.
- Status in Hong Kong follows AFCD (2024), Lee *et al.* (2004), Dudgeon (2003), Chow *et al.* (2022), and Stanton & Leven (2016).

3. Habitat: AbF = Abandoned Farmland; AcF = Active Farmland; CW = Channelised Watercourse; GL = Grassland; PT = Plantation; SL = Shrubland; VDA = Village / Developed Area; WC = Watercourse; WL = Woodland.

Appendix C-5

List of flora recorded by habitat
during field surveys

Appendix C-5. List of Flora recorded by habitat in Assessment Area (AA) and Application Site (AS)

Family	Chinese Name	Scientific Name	Developed Area (AA)	Watercourse (AA)	Active Farmland (AA)	Woodland (AA)	Abandoned Farmland (AA)	Plantation (AA)	Shrubland (AA)	Grassland (AA)	Developed Area (AS)	Watercourse (AS)	Woodland (AS)	Shrubland (AS)	Abandoned Farmland (AS)
ASTERACEAE	白花鬼針草	Bidens alba	4	4	2	1	4	1	2	1	4	4	1	2	3
MORACEAE	桑	Morus alba	2	1	2		1	1			2				1
POACEAE	牛筋草	Eleusine indica	2				1			1	2				1
POACEAE	鼠尾粟	Sporobolus fertilis	1							1	1				
ASTERACEAE	微甘菊	Mikania micrantha	4	2	2	2	4	2	1	1	3	2		2	4
POACEAE	五節芒	Miscanthus floridulus	2		1		2	1	1	1	1		1	1	1
POACEAE	巴拉草	Brachiaria mutica	3	3	2		3				2	3		1	3
MIMOSACEAE	銀合歡	Leucaena leucocephala	4	2	1		3	3	1	1	3	2	1	2	3
MIMOSACEAE	含羞草	Mimosa pudica	2	2		1	2	1			2	1			1
CONVOLVULACEAE	五爪金龍	Ipomoea cairica	3	2			3				2	1			2
EUPHORBIACEAE	血桐	Macaranga tamaris var. tomentos	2	2	1	2	2	1	2	1	1	1	1	1	1
EUPHORBIACEAE	千根草	Euphorbia thymifolia	3	1			1				2	1			2
RUBIACEAE	傘房花耳草	Hedyotis corymbosa	3	1			2				1	1			1
EUPHORBIACEAE	通奶草	Euphorbia hypericifolia	2				1				1				1
CYPERACEAE	異型莎草	Cyperus difformis	1		1		2								1
EUPHORBIACEAE	鐵梗葉下珠	Phyllanthus tenellus	2			1	1				1				2
MALVACEAE	黃葵	Malvastrum coromandelianum	2				1			1	2				
ASTERACEAE	三裂葉銀菊	Wedelia trilobata	3	3		2	3				1	2			2
RUBIACEAE	雞矢藤	Paederia scandens	3	1	2	2	2	1	1		2	1		1	2
ARACEAE	海芋	Alocasia macrorrhizos	1	2	1	3							1		1
AMARANTHACEAE	綠莧	Amaranthus viridis	2				2			1	1				2
MYRTACEAE	白千層	Melaleuca cajuputi subsp. cuming	2			2					1				
POACEAE	大黍	Panicum maximum	3	1	2	1	1	1	1	2	1			1	2
CUSCUTACEAE	田野菟絲子	Cuscuta campestris	1	1	2		2								2
MORACEAE	榕樹	Ficus microcarpa	2	1		1					1				
CLUCURBITACEAE	紅瓜	Coccinia grandis	2				1	1			2				
MORACEAE	薛荔	Ficus pumila	2	2			2				1		1		
EUPHORBIACEAE	土蜜樹	Bridelia tomentosa	2			2			2	1	1		1	1	
MORACEAE	刺楸	Ficus hispida	2	1		2	1	1			1				
EUPHORBIACEAE	白飯樹	Flueggea virosa	2			1	1		2	1	1		1	1	1
POLYGONACEAE	火炭母	Persicaria chinensis	1		2						1				
ULMACEAE	朴樹	Celtis sinensis	2	1		2	1	1			1		1		
THELYPTERIDACEAE	華南毛蕨	Cyclosorus parasiticus	1			3							2		
ARACEAE	芋	Colocasia esculenta		2	2		1					2			1
ONAGRACEAE	美洲水丁香	Ludwigia erecta		2	1							1			1
ATHYRIACEAE	蕨	Callipteris esculenta		3			1					2			2
CAESALPINIACEAE	翅莢決明	Senna alata		1											
ASTERACEAE	霍香薊	Ageratum conyzoides		2		1	2			1	1	2		1	1
ASTERACEAE	熊耳草	Ageratum houstonianum		4			2				4				2
VERBENACEAE	馬纓丹	Lantana camara	1	2	1	1	1	1	1		1			1	1
LEMNACEAE	青萍	Lemna minor		2							1				
SCROPHULARIACEAE	野苣荬	Scoparia dulcis	2	3			1			1	1				1
ASTERACEAE	羽芒菊	Tridax procumbens	3		1	2	2	1			3	1			2
ASTERACEAE	掃帚	Siegesbeckia orientalis		1											
BRASSICACEAE (CRUCIFERAE)	彎曲碎米蕪	Cardamine flexuosa	1	2			3					1			3
OXALIDACEAE	酢漿草	Oxalis corniculata	3	2	1		2			1	2			1	2
PASSIFLORACEAE	龍珠果	Passiflora foetida	3	2			2				2				1
CYPERACEAE	風車草	Cyperus involucratus		3			1				2				1
POACEAE	紫馬唐	Digitaria violascens	1	1			1				1				
ARACEAE	大澤	Pistia stratiotes		2								1			
POACEAE	水蘆葦	Apluda mutica		2								1			
CAPPARACEAE	酸子白花菜	Cleome ruidosperma	2	2			2				1				2
POLYGONACEAE	長刺酸模	Rumex trisetifer	1	1			1					1			
SOLANACEAE	水茄	Solanum torvum	1	2		1					1				1
MUSACEAE	大蕉	Musa x paradisiaca	1		3										
MYRTACEAE	蒲桃	Syzygium jambos				2							1		
MENISPERMACEAE	囊蕨	Stephania longa				1			1						
CYPERACEAE	單穗水蜈蚣	Kyllinga nemoralis	1	2			2				1	1		1	
CYPERACEAE	水蜈蚣	Kyllinga polyphylla	1		2		1				1	1			
POACEAE	地錢草	Axonopus compressus	2		1		2								
SAPINDACEAE	龍眼	Dimocarpus longan	2			2					1		1		
ARALIACEAE	鵝掌柴	Schefflera heptaphylla				3					1		2		
MENISPERMACEAE	木防己	Cocculus orbiculatus	1	1	1	1		1	1		1			1	1
SOLANACEAE	苦蕒	Physalis angulata	1												
ANNONACEAE	假鷹爪	Desmos chinensis	1			3			1				2		
SCROPHULARIACEAE	圓葉母草	Lindernia rotundifolia	1	3			2					2			1
ULMACEAE	山黃麻	Trema tomentosa	1		1	2			3	1			1	1	
EUPHORBIACEAE	飛揚草	Euphorbia hirta	3	2			1				1	1			1
VITACEAE	小果葡萄	Vitis balanseana	2								1				
MENISPERMACEAE	中華青牛膽	Tinospora sinensis	1		1	2		1	1		1		1		
SCROPHULARIACEAE	母草	Lindernia crustacea	2	1			2					1			1
POACEAE	百喜草	Paspalum notatum	2							1		1			1
PLANTAGINACEAE	車前草	Plantago major	2								1				
CONVOLVULACEAE	三裂葉薯	Ipomoea triloba	2				1				1				
CAESALPINIACEAE	盾柱木	Pelltophorum pterocarpum	1			1									
POACEAE	茅根竹	Bambusa multiplex	1									1			
COMMELINACEAE	節節草	Commelina diffusa	1	3	2		2					2			1
POLYGONACEAE	棠梨	Persicaria kawagocema	1	1								1			
FABACEAE (PAPILIONACEAE)	鹿藿	Rhynchosia volubilis	2							1				1	
FABACEAE (PAPILIONACEAE)	葛麻姆	Pueraria lobata var. mootana	2	1			3				1				2

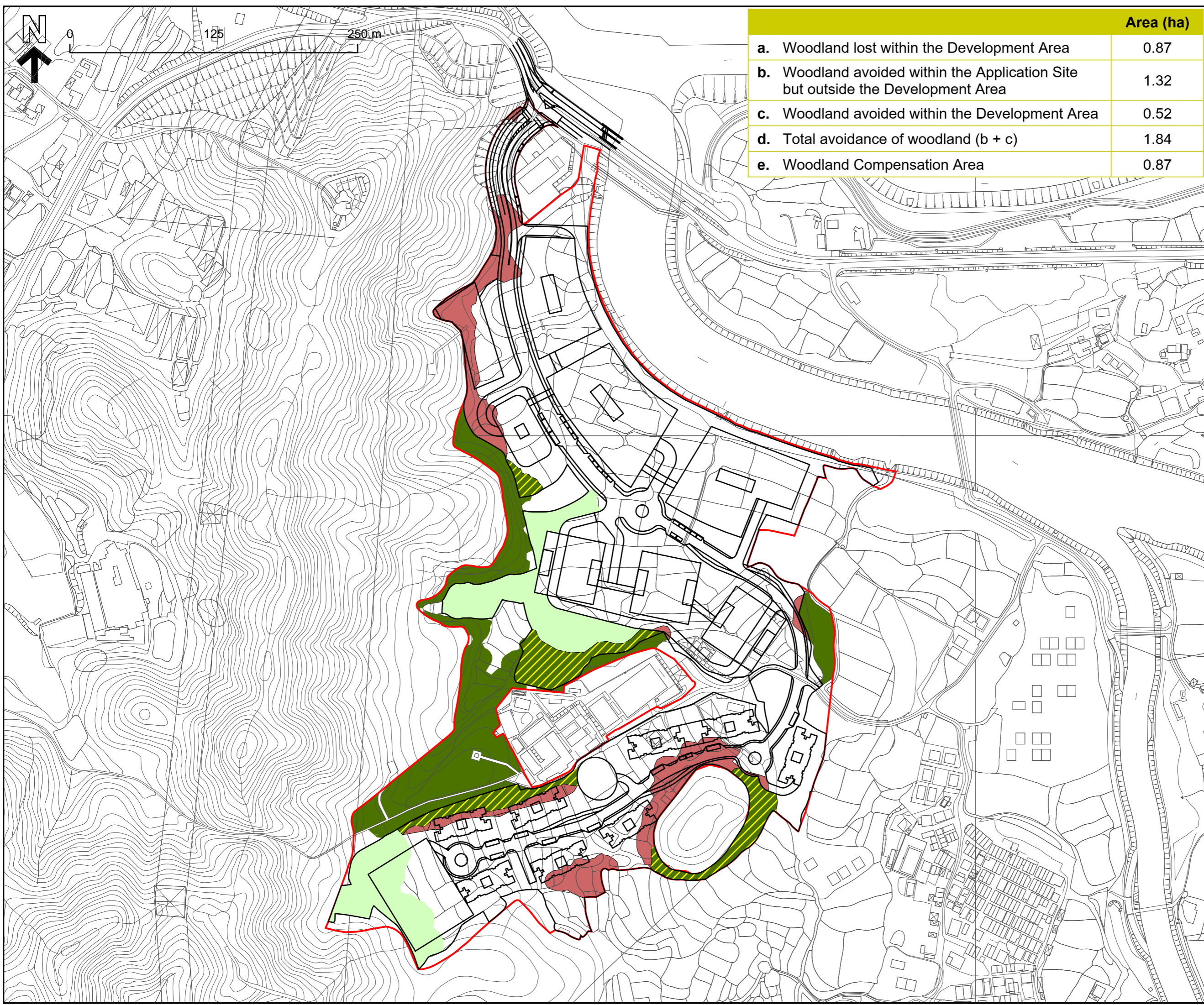
Family	Chinese Name	Scientific Name	Developed Area (AA)	Watercourse (AA)	Active Farmland (AA)	Woodland (AA)	Abandoned Farmland (AA)	Plantation (AA)	Shrubland (AA)	Grassland (AA)	Developed Area (AS)	Watercourse (AS)	Woodland (AS)	Shrubland (AS)	Abandoned Farmland (AS)
ZINGIBERACEAE	薑花	Hedychium coronarium		1											1
LYGODIACEAE	小葉海金沙	Lygodium scandens	1			2							1		
SOLANACEAE	少花龍葵	Solanum americanum	3	1		1	2	1	2	1	2				2
POLYGONACEAE	伏毛藤	Persicaria pubescens	1	2									1		
POACEAE	覆輪草	Cenchrus echinatus	1				2				1				1
ONAGRACEAE	毛草龍	Ludwigia octovalvis		2								1			
FABACEAE (PAPILIONACEAE)	長江豆	Vigna unguiculata subsp. sesquipedalis			2										
CARICACEAE	番木瓜	Carica papaya			2						1				
ZINGIBERACEAE	薑菜	Curcuma longa			1										
ASTERACEAE	假臭草	Praxelis clematidea	2		2		1								
ZINGIBERACEAE	薑	Zingiber officinale			1										
MALVACEAE	玫瑰茄	Hibiscus sabdariffa			2										
ASTERACEAE	蘇門白濁草	Conyza sumatrensis	2		1		1		1	2	1				1
CAESALPINIACEAE	決明	Senna tora			1										
CUCURBITACEAE	南瓜	Cucurbita moschata			1										
CUCURBITACEAE	佛手瓜	Sechium edule			1										
FAGACEAE	栗	Castanea mollissima			2										
CUCURBITACEAE	冬瓜	Benincasa hispida			1										
CONVOLVULACEAE	蘿菜	Ipomoea aquatica		2	2										
EUPHORBIACEAE	五月茶	Antidesma bunius	1			2									
ASTERACEAE	一點紅	Emilia sonchifolia	3	2	1		2	1	1	1	1	1			1
ASTERACEAE	黃龜菜	Youngia japonica	3	3	2	1	2		1		2	1			2
ASTERACEAE	匙葉龍雞草	Gnaphalium pensylvanicum	1	2	1		2				1				1
TILIACEAE	破布葉	Microcos nervosa			1										
MYRTACEAE	鐘衣蒲桃	Syzygium hancei			1	2									1
MYRTACEAE	番石榴	Psidium guajava			1						1				
RUTACEAE	九里香	Murraya paniculata	2								1				
ZAMIACEAE	澤米蘇鐵	Zamia furfuracea	1												
CONVOLVULACEAE	番薯	Ipomoea batatas			2										
EUPHORBIACEAE	葉下珠	Phyllanthus urinaria	1								1				
ASTERACEAE	夜香牛	Vernonia cinerea	2	1	1		1	1	1	1	1	1			1
ASTERACEAE	苦苣菜	Sonchus oleraceus	1		1		1				1				
POACEAE	大白茅	Imperata cylindrica	3	3	1	1	3			3	2	2			3
POACEAE	狗牙根	Cynodon dactylon	2	1	1						1				
ACANTHACEAE	蘭花草	Ruellia coerulea	2								1				
POACEAE	甘蔗	Saccharum officinarum			1										
AGAVACEAE	虎尾蘭	Sansevieria trifasciata	1												
OXALIDACEAE	紅花酢漿草	Oxalis debilis subsp. corymbosa	3	1		1	1	1			1				1
POACEAE	龍爪茅	Dactyloctenium aegyptium			1							1			
NEPHROLEPIDACEAE	腎蕨	Nephrolepis auriculata			1	2		1							
RUTACEAE	黃瓜	Clausena lanium	2			1					1				
ANNONACEAE	番荔枝	Annona squamosa			1										
ARALIACEAE	聯雲藤	Schefflera arboricola	2								2				
ARECACEAE	散尾葵	Dypsis lutescens	1								1				
BIGNONIACEAE	炮仗花	Pyrostegia venusta	2								1				
CACTACEAE	量天尺	Hylocereus undatus	1		1						1				
EUPHORBIACEAE	白楸	Mallotus paniculatus	1			3					1		1	2	1
APOCYNACEAE	雞蛋花	Plumeria rubra	1					2	2		1				
SAPINDACEAE	荔枝	Litchi chinensis	2			1					1				
MORACEAE	菩提樹	Ficus religiosa	1												
LYTHRACEAE	大花紫薇	Lagerstroemia speciosa	2								1				
CAESALPINIACEAE	富勒羊蹄甲	Bauhinia variegata	2			1					1				
ARECACEAE	蒲葵	Livistona chinensis	2								1				
MELIACEAE	苦楝	Melia azedarach	2		1	2					1				
STERCULIACEAE	假蘋婆	Sterculia lanceolata	1			4		1	1		1		3		
EUPHORBIACEAE	木薯	Manihot esculenta	2		2										
URTICACEAE	青葙芋麻	Boehmeria nivea var. tenacissima	2	1		1	2				1				
EUPHORBIACEAE	烏臼	Sapium sebiferum	1			1			1				1		
EUPHORBIACEAE	蓖麻	Ricinus communis	1												
POACEAE	孟仁草	Chloris barbata	2								1				1
APIACEAE (UMBELLIFERAE)	續斷草	Centella asiatica	1		1										
EUPHORBIACEAE	白飯樹	Flueggea virosa	2		1	1			1		1		1	2	
EUPHORBIACEAE	秋楓	Bischofia javanica	1			2							1		
FABACEAE (PAPILIONACEAE)	美洲合萌	Aeschynomene americana	4	1			4		1		3				3
MYRTACEAE	紅膠木	Lophostemon confertus	2			2					1			1	
ASTERACEAE	睡腸	Eclipta prostrata	1	2	1		1		1	1		1			1
ASTERACEAE	沼生金鈕扣	Acmella uliginosa			2		2					2			
CYPERACEAE	兩歧飄拂草	Fimbristylis dichotoma	1		2		1			1	1				2
POACEAE	類蘆	Neyraudia reynaudiana	1												
CARYOPHYLLACEAE	珊瑚菜	Mvosoton aquaticum	1	2	2		2					1			1
APIACEAE (UMBELLIFERAE)	天胡荽	Hydrocotyle sibthorpioides			2						1				
POACEAE	腳魚草	Eragrostis tenella	2		1						1				
ARACEAE	龜背竹	Monstera deliciosa	1								1				
ARAUCARIACEAE	葉南洋杉	Araucaria heterophylla	1								1				
MALVACEAE	白苣蕒花稔	Sida rhombifolia	2		1		2		1						1
VERBENACEAE	黃荆	Vitex negundo	3				1	1	3		1		1	1	
LAURACEAE	樟	Cinnamomum camphora	2			2					1		1		
FABACEAE (PAPILIONACEAE)	假地豆	Desmodium heterocarpon	2	1											1
MALVACEAE	肖梵天花	Urena lobata	2		1		1		1	3				1	1
MALVACEAE	黃槿	Hibiscus tiliaceus	1												
LYGODIACEAE	海金沙	Lygodium japonicum	1			3		1					2		

Family	Chinese Name	Scientific Name	Developed Area (AA)	Watercourse (AA)	Active Farmland (AA)	Woodland (AA)	Abandoned Farmland (AA)	Plantation (AA)	Shrubland (AA)	Grassland (AA)	Developed Area (AS)	Watercourse (AS)	Woodland (AS)	Shrubland (AS)	Abandoned Farmland (AS)
MYRSINACEAE	鯪魚膽	Maesa perliaris				1									
LINDSAEACEAE	烏蕨	Sphenomeris chinensis				1									
PTERIDACEAE	半邊旗	Pteris sempinata				1									
POACEAE	狼把草	Eremochloa ciliaris	2				1								
ACTINIDIACEAE	水東哥	Saurauia tristyla				1									
MIMOSACEAE	大青藤	Albizia corniculata				1			1						
DILLENIACEAE	錫葉藤	Tetracera asiatica				2		1	1				1		
SMILACACEAE	青蕨	Heterosmilax japonica				1			1						
FABACEAE (PAPILIONACEAE)	南嶺黃檀	Dalbergia benthamii				1			2					1	
POACEAE	臭根子草	Bothriochloa bladhii	1								1				
MYRTACEAE	檸檬桉	Eucalyptus citrodora				1		1			1				
MYRTACEAE	大葉桉	Eucalyptus robusta				1		2			1			1	
ERICACEAE	錦繡杜鵑	Rhododendron pulchrum	1								1				
APOCYNACEAE	夾竹桃	Nerium oleander	1												
ANACARDIACEAE	木蠟樹	Rhus succedanea				1		1	1				1	1	
MYRSINACEAE	白花假蘇子	Embelia ribes							1						
MORACEAE	筆管榕	Ficus subspicarpa	1	1											
CAESALPINIACEAE	白花洋紫荊	Bauhinia variegata var. candida	1												
MORACEAE	變葉榕	Ficus variolosa						1	2						
CONNARACEAE	小葉紅葉藤	Rourea microphylla				1							1		
BURSERACEAE	橄欖	Canarium album	1												
DAPHNIPHYLLACEAE	牛耳楓	Daphniphyllum calycinum				1									
EUPHORBIAEAE	文膠舞盤子	Glochidion lanceolarium							1					1	
POACEAE	矮草	Panicum brevifolium				1		1					1		
ACANTHACEAE	小花牛黃錯	Assytasia micrantha	2	2			3	1			1	1			2
CAESALPINIACEAE	首冠藤	Bauhinia corymbosa	1												
ANACARDIACEAE	紅果	Mangifera indica	1								1				
PUNICACEAE	安石榴	Punica granatum	1												
POACEAE	蒼苳	Coix lacryma-jobi		1											
ASTERACEAE	南非菜	Gymnanthemum amygdalinum	1												
BRASSICACEAE (CRUCIFERAE)	蔞菜	Rorippa indica	1		1		2								
ASTERACEAE	野苣蒿	Crassocephalum crepidioides	1				2								
ASTERACEAE	蘇門白酒草	Conyza sumatrensis	2												
SOLANACEAE	番茄	Lycopersicon esculentum			1										
MENISPERMACEAE	木防己	Cocculus orbiculatus	2												
CARICACEAE	番木瓜	Carica papaya	1												
MUSACEAE	大蕉	Musa x paradisiaca	1												
NYCTAGINACEAE	亮葉子花	Bougainvillea glabra									1				
URTICACEAE	小葉冷水花	Pilea microphylla				1						1			
VERBENACEAE	假蓬蘽	Duranta erecta	1												
APOCYNACEAE	夾竹桃	Cathamantus roseus	1												
MELIACEAE	小葉米仔蘭	Aglaia odorata var. microphyllina													
CUPRESSACEAE	側柏	Platycladus orientalis	1												
BOMBACACEAE	木棉	Bombax ceiba	1								1				
CARYOPHYLLACEAE	荷蓮豆	Drymaria cordata		1											1
MALVACEAE	垂花懸鈴花	Malvaviscus penduliflorus	1								1				
CYPERACEAE	短葉荳芎	Cyperus malaccensis var. brevifolius		1											
PONTEDERIACEAE	鳳眼藍	Eichhornia crassipes		2								1			
CAESALPINIACEAE	黃槐決明	Senna surattensis	1								1				
MIMOSACEAE	大葉合歡	Albizia lebbek	1								1				
MIMOSACEAE	大葉相思	Acacia mangium	1								1				
AMARANTHACEAE	蝦蟇菜	Alternanthera sessilis	1	2	1		2					1			
MIMOSACEAE	耳果相思	Acacia auriculiformis	1			1			2		1				
RANUNCULACEAE	石龍芮	Ranunculus sceleratus		1			2					1			
POACEAE	亞香茅	Cymbopogon tortilis					1								
RUTACEAE	檸檬	Citrus x limon	1												
TROPAROLACEAE	旱金蓮	Tropaeolum majus					1								
RUTACEAE	調科九里香	Murraya koenigii	1												
THELYPTERIDACEAE	間斷毛蕨	Cyclosorus interruptus		1			3								
SCROPHULARIACEAE	泥花草	Lindernia antipoda		1											3
MORACEAE	檳榔	Broussonetia papyrifera	1												1
SAPINDACEAE	樟羽葉槲樹	Koelreuteria bipinnata	1												
RUBIACEAE	龍船花	Ixora chinensis	1												
ARACEAE	綠蘿	Epipremnum aureum									1				
MALVACEAE	朱槿	Hibiscus rosa-sinensis	1								1				
LOGANIACEAE	灰莉	Falcataria moluccaena	1								1				
BORAGINACEAE	葛及樹	Carmona microphylla	1								1				
ROSACEAE	枇杷	Eriobotrya japonica	1								1				
NYCTAGINACEAE	紫茉莉	Mirabilis jalapa	1												
MELIACEAE	麻楝	Chukrasia tabularia	1												
ACANTHACEAE	假杜鵑	Barleria cristata	1												
CAESALPINIACEAE	臘腸樹	Cassia fistula	1												
AMARANTHACEAE	青葙	Celosia argentea	1	1			2								1
MYRTACEAE	鐘花蒲桃	Syzygium myrtifolium	1												
ZINGIBERACEAE	薑花	Hedychium coronarium		1			2				1				
CAPRIFOLIACEAE	珊瑚樹	Viburnum odoratissimum	1			1							1		
AGAVACEAE	朱蕉	Cordyline fruticosa													
HAMAMELIDACEAE	紅花檵木	Loropetalum chinense f. rubrum	1								1				
CANNACEAE	美人蕉	Canna indica	1												
ASTERACEAE	小蓬草	Conyza canadensis	1				2				1				1
ARECACEAE	短穗魚尾葵	Caryota mitis	1								1				

Family	Chinese Name	Scientific Name	Developed Area (AA)	Watercourse (AA)	Active Farmland (AA)	Woodland (AA)	Abandoned Farmland (AA)	Plantation (AA)	Shrubland (AA)	Grassland (AA)	Developed Area (AS)	Watercourse (AS)	Woodland (AS)	Shrubland (AS)	Abandoned Farmland (AS)
VITACEAE	烏斂莓	Cayratia japonica	1			1									
APIACEAE (UMBELLIFERAE)	銅錢草	Hydrocotyle verticillata		2			1								
CAESALPINIACEAE	洋紫荊	Bauhinia x blakeana	1								1				
ONAGRACEAE	細花丁香蓼	Ludwigia perennis		1			1								
RUTACEAE	柑橘	Citrus reticulata	1												1
STERCULIACEAE	山芝麻	Helicteres angustifolia							3	1				1	
APOCYNACEAE	山檢	Melodinus suaveolens				1									
ASTERACEAE	白舌紫菀	Aster baccharoides							1	3				1	
ASTERACEAE	地膽草	Elephantopus scaber							1	3				1	
ASTERACEAE	白花地膽草	Elephantopus tomentosus								1					
BIGNONIACEAE	火招樹	Spathodea campanulata	1								1				
CAESALPINIACEAE	絳葉藤	Bauhinia championii				1							1		
CAPRIFOLIACEAE	常綠黃連	Viburnum sempervirens				1			2						
CARYOPHYLLACEAE	雀舌草	Stellaria alsine					2								
CRASSULACEAE	落地生根	Kalanchoe pinnata	1												
CYPERACEAE	睡萍莎草	Cyperus haspan					2				1				
EUPHORBIACEAE	山烏柏	Sapium discolor							1			1			2
FABACEAE (PAPILIONACEAE)	葛花生	Arachis duranensis	1	1											
LAURACEAE	陰香	Cinnamomum burmannii	1												
MORACEAE	黃葛樹	Ficus virens var. sublancoolata	1												
MORACEAE	垂葉榕	Ficus benamina	1												
POACEAE	李氏禾	Leersia hexandra			1										
POACEAE	圓果雀稗	Paspalum scrobiculatum var. orbis	1	1			2								
RUBIACEAE	金草	Hedyotis acutangula				1			1	2			1	1	
THYMELAEACEAE	土沉香	Aquilaria sinensis											1		
HAMAMELIDACEAE	紅花荷	Rhodoleia championii											1		

Appendix D

Avoidance and Compensation for Woodland Loss



	Area (ha)
a. Woodland lost within the Development Area	0.87
b. Woodland avoided within the Application Site but outside the Development Area	1.32
c. Woodland avoided within the Development Area	0.52
d. Total avoidance of woodland (b + c)	1.84
e. Woodland Compensation Area	0.87

LEGEND

	Woodland avoided within the Application Site but outside the Development Area
	Woodland avoided within the Development Area
	Woodland Compensation Area
	Woodland to be lost

FIGURE TITLE
Woodland Preservation and Compensation

DATE
27 / 11 / 2024

FIGURE NO. SCALE
 1:3,000 on A3

PROJECT TITLE
S12A Application for Amendment of Plan for Proposed Innovation and Technology Hub at Various Lots in D.D. 82 and D.D. 86 and Adjoining Government Land, Man Kam To, New Territories (Application No. Y/NE-MKT/1)



Appendix E

Landscape Master Plan

FIGURE 1.5B

FIGURE 1.5F



FIGURE 1.5 C

FIGURE 1.5D



LEGEND	
	DEVELOPMENT SITE BOUNDARY
	APPLICATION SITE BOUNDARY
	SITE ENTRY
	CONTROL POINT
	BUILDING ENTRY
	BURIAL GROUND ENTRY
	PROPOSED WOODLAND COMPENSATION
	AREAS TO BE PRESERVED (BASED ON ECOIA FINDINGS)
	EVA

DRAWING TITLE
Landscape Master Plan - Overall

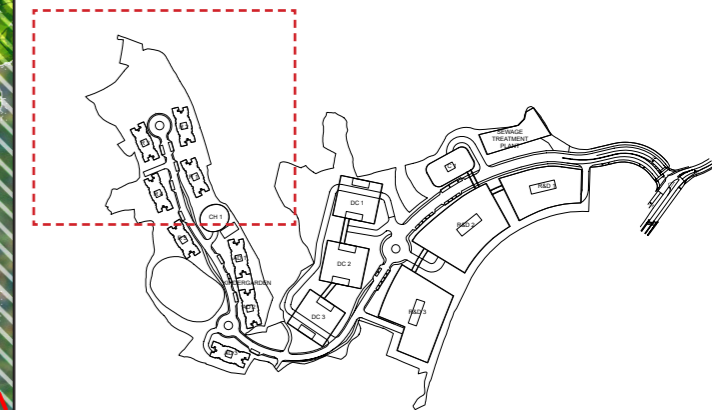
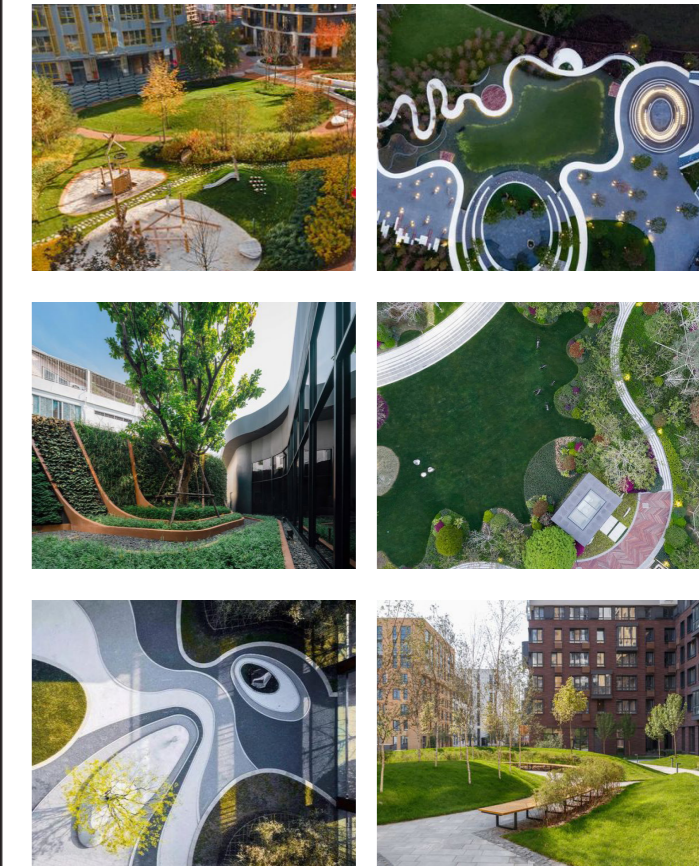
DATE	FIGURE NO.	SCALE AND ORIENTATION
OCT 2024	FIG 1.5a	1:2000@A3
DRAWN	JOB TITLE	
EJ	Section 12A Planning Application for Proposed Innovation and Technology Hub at Various Lots in D.D. 82 and D.D. 86, and Adjoining Government Land, Man Kam To, New Territories	
CHECKED	APPROVED	
RH	CY	

0 20 40 100m
Scale 1:2000

ARUP



REFERENCE IMAGE



KEY PLAN

LEGEND

- DEVELOPMENT SITE BOUNDARY
- APPLICATION SITE BOUNDARY
- ▶ SITE ENTRY
- ▲ BUILDING ENTRY

- ① OPEN LAWN AREA
- ② WATER FEATURE
- ③ CHILDREN'S PLAY AREA
- ④ POCKET COURTYARD
- ⑤ THEMATIC GARDEN
- ⑥ PAVILION
- ⑦ LANDSCAPE BERM

- PROPOSED WOODLAND COMPENSATION
- AREAS TO BE PRESERVED (BASED ON ECOIA FINDINGS)

DRAWING TITLE
Landscape Master Plan (Sheet 1 of 5)

DATE
OCT 2024

FIGURE NO.
FIG 1.5b

SCALE AND ORIENTATION
1:800@A3

DRAWN
EJ

JOB TITLE

CHECKED
RH

Section 12A Planning Application for Proposed Innovation and Technology Hub at Various Lots in D.D. 82 and D.D. 86, and Adjoining Government Land, Man Kam To, New Territories

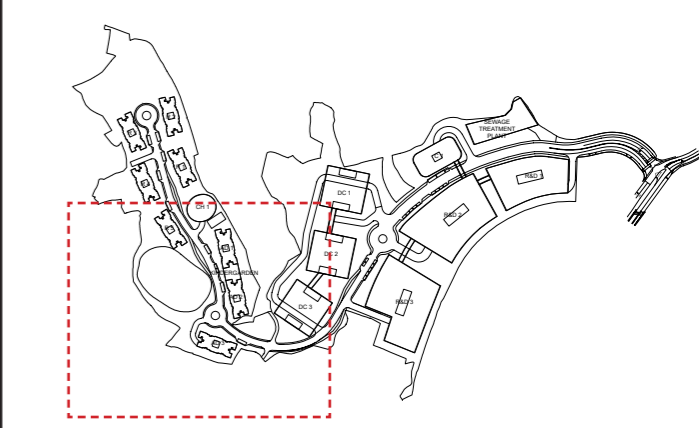
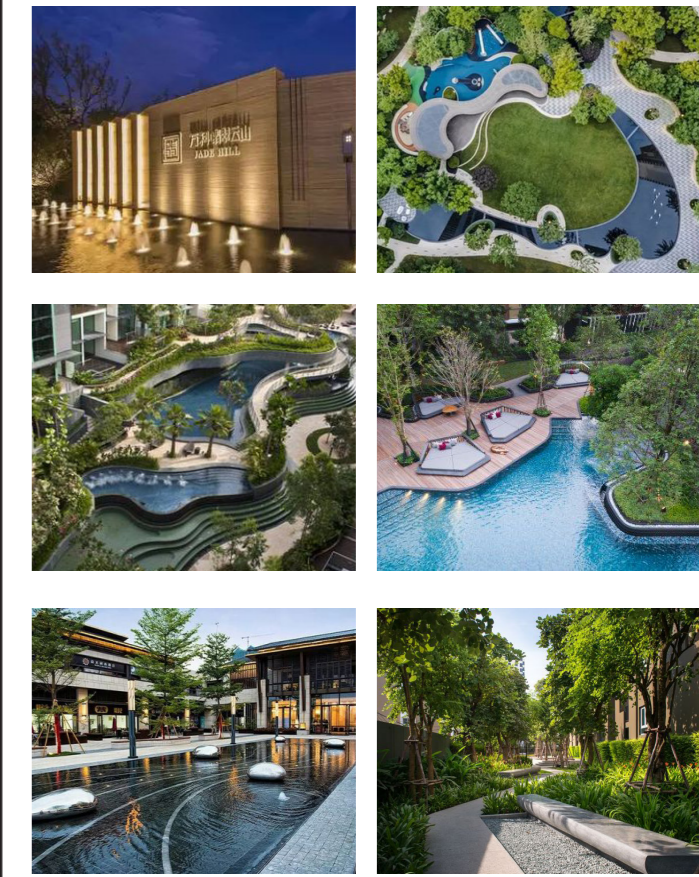
APPROVED
CY



ARUP



REFERENCE IMAGE



KEY PLAN

LEGEND	
DEVELOPMENT SITE BOUNDARY	APPLICATION SITE BOUNDARY
SITE ENTRY	OPEN LAWN AREA
CONTROL POINT	WATER FEATURE & SIGNATURE WALL
BUILDING ENTRY	CHILDREN'S PLAY AREA
BURIAL GROUND ENTRY	POCKET COURTYARD
SWIMMING POOL	FEATURE WALL
SCULPTURE GARDEN	GUARD HOUSE
OUTDOOR GYM	

DRAWING TITLE Landscape Master Plan (Sheet 2 of 5)
DATE OCT 2024
DRAWN EJ
CHECKED RH
APPROVED CY

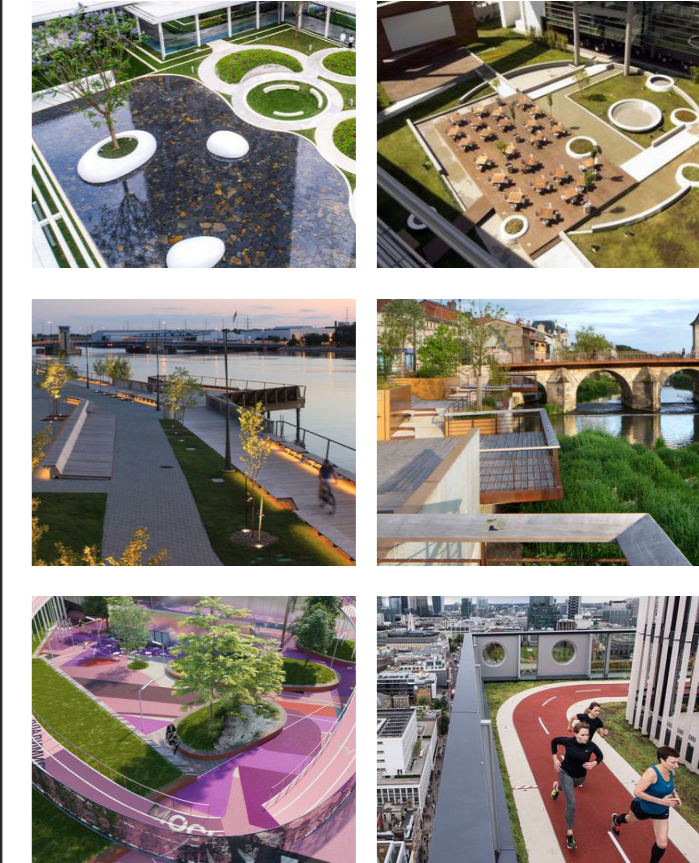
FIGURE NO. FIG 1.5c	SCALE AND ORIENTATION 1:800@A3
JOB TITLE Section 12A Planning Application for Proposed Innovation and Technology Hub at Various Lots in D.D. 82 and D.D. 86, and Adjoining Government Land, Man Kam To, New Territories	

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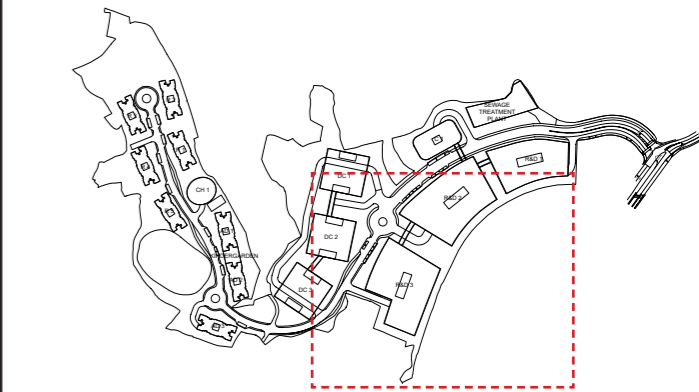


0 10 20 40m
Scale 1:800

REFERENCE IMAGE



PROPOSED WOODLAND COMPENSATION
AREAS TO BE PRESERVED (BASED ON ECOIA FINDINGS)



KEY PLAN

LEGEND	
	DEVELOPMENT SITE BOUNDARY
	APPLICATION SITE BOUNDARY
	SITE ENTRY
	CONTROL POINT
	BUILDING ENTRY
	EVA
	OPEN LAWN AREA
	WATER FEATURE
	MULTI SPORT GROUND

	POCKET COURTYARD
	F&B DECK
	VIEWING DECK
	MULTI-FUNCTIONAL DECK
	RUNNING TRACK
	SOLAR PANEL

DRAWING TITLE
Landscape Master Plan (Sheet 3 of 5)

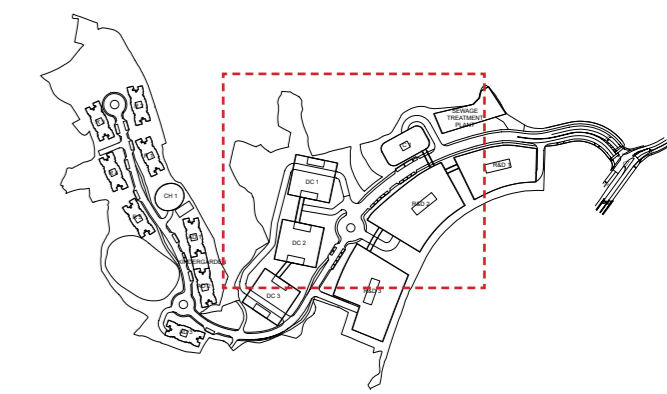
DATE	FIGURE NO.	SCALE AND ORIENTATION
OCT 2024	FIG 1.5d	1:800@A3
DRAWN EJ	JOB TITLE Section 12A Planning Application for Proposed Innovation and Technology Hub at Various Lots in D.D. 82 and D.D. 86, and Adjoining Government Land, Man Kam To, New Territories	
CHECKED RH		
APPROVED CY		



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REFERENCE IMAGE



KEY PLAN

PROPOSED WOODLAND COMPENSATION
 AREAS TO BE PRESERVED (BASED ON ECOIA FINDINGS)

LEGEND		
	APPLICATION SITE BOUNDARY	① OPEN LAWN AREA
	DEVELOPMENT SITE BOUNDARY	② WATER FEATURE
	SITE ENTRY	③ POCKET COURTYARD
	BUILDING ENTRY	④ MULTI-FUNCTIONAL DECK
	EVA	⑤ RUNNING TRACK
		⑥ COMMUNITY FARM
		⑦ SOLAR PANEL

DRAWING TITLE
Landscape Master Plan (Sheet 4 of 5)

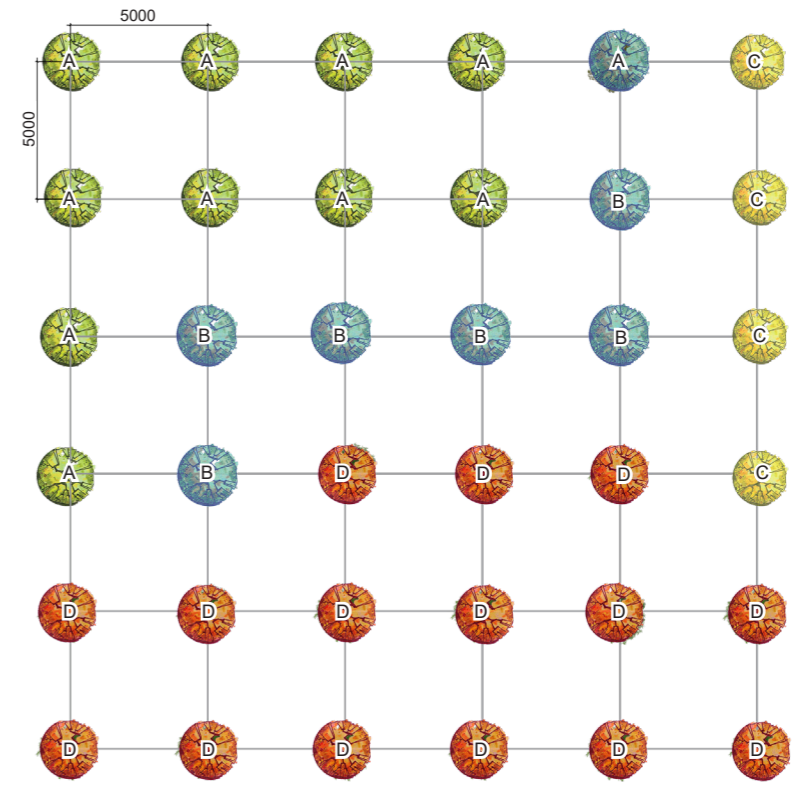
DATE	FIGURE NO.	SCALE AND ORIENTATION
OCT 2024	FIG 1.5e	1:800@A3
DRAWN EJ	JOB TITLE Section 12A Planning Application for Proposed Innovation and Technology Hub at Various Lots in D.D. 82 and D.D. 86, and Adjoining Government Land, Man Kam To, New Territories	
CHECKED RH		
APPROVED CY		



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SCALE 1:2000@A3

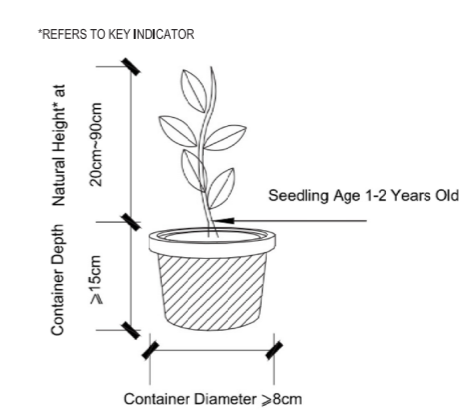


THE PLANTING RATIO OF EACH SEEDLINGS ARE LISTED BELOW:
A (*Ilex rotunda* var. *microcarpa*): 10
B (*Hibiscus tiliaceus*): 7
C (*Cinnamomum burmannii*): 4
D (*Celtis sinensis*): 15

SEEDLING TREE PLANTING MATRIX
SCALE 1:5

Tree ID	Botanical Name	Symbol	Chinese Name	Origin	Specification
A	<i>Ilex rotunda</i> var. <i>microcarpa</i>	Ile.rot.	小果鐵冬青	Native	Seedling Trees
B	<i>Hibiscus tiliaceus</i>	Mic.ner	黃槿	Native	Seedling Trees
C	<i>Cinnamomum burmannii</i>	Cin.bur	陰香	Native	Seedling Trees
D	<i>Celtis sinensis</i>	Cel.sin	朴樹	Native	Seedling Trees

PROPOSED TREE PLANTING SPECIES FOR WOODLAND RESTORATION
N.T.S.



KEY INDICATOR
REFERS TO AN IMPORTANT INDICATION IN MEASURING A PLANT'S GROWTH QUALITY AND SIZES WHICH CRITICALLY RELATES TO THE PRICE. THIS IS THE MAJOR INDICATOR FOR PLANT SPECIFICATION IN NURSERY PRODUCTION. FOR MOST TREES, DIAMETER AT BREAST HEIGHT (DBH) OR METER-HEIGHT DIAMETER IS THE KEY INDICATION OF PLANT GROWTH AND SIZE; FOR MOST PALMS, BARE STEM HEIGHT AND BASE DIAMETER ARE THE KEY INDICATORS (IN PARTICULAR FOR SINGLE-STEM PALMS); FOR SHRUBS AND GROUND COVERS, CONTAINER SIZES WOULD BE THE KEY INDICATORS; AND FOR CLIMBERS, LENGTH OF MAIN STEMS WOULD BE THE KEY INDICATOR.

LEGEND	
	DEVELOPMENT SITE BOUNDARY
	APPLICATION SITE BOUNDARY
	NEW PLANTING TREES
	PROPOSED WOODLAND COMPENSATION
	RETAINED TREES (44 NOS.)
	AREAS TO BE PRESERVED (BASED ON ECOIA FINDINGS)

DRAWING TITLE
Planting Matrix for Proposed Woodland Compensation

DATE
OCT 2024

DRAWN
EJ

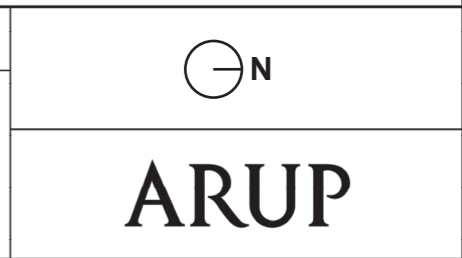
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RH

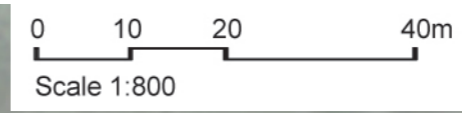
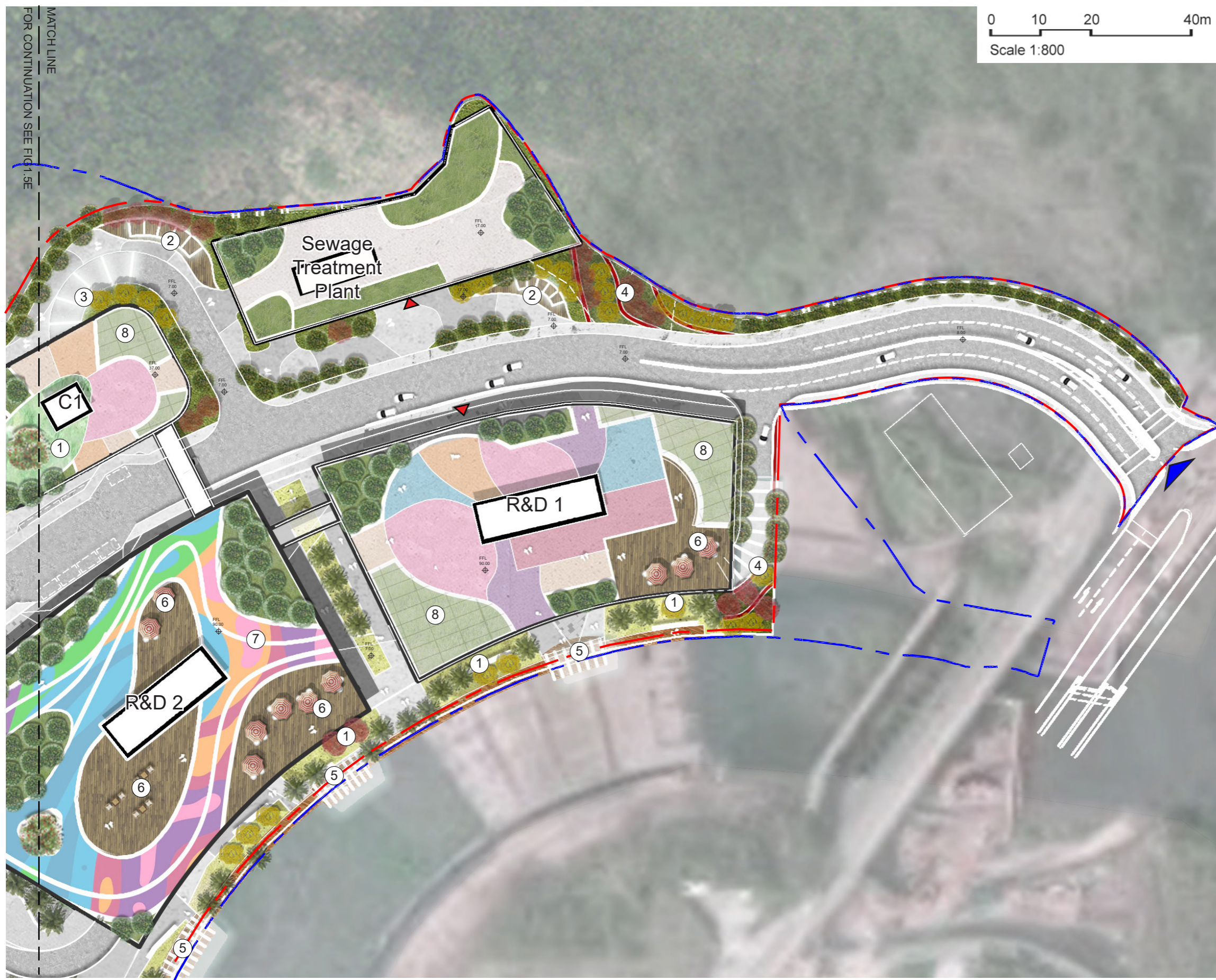
APPROVED
CY

FIGURE NO.
FIG 1.4g

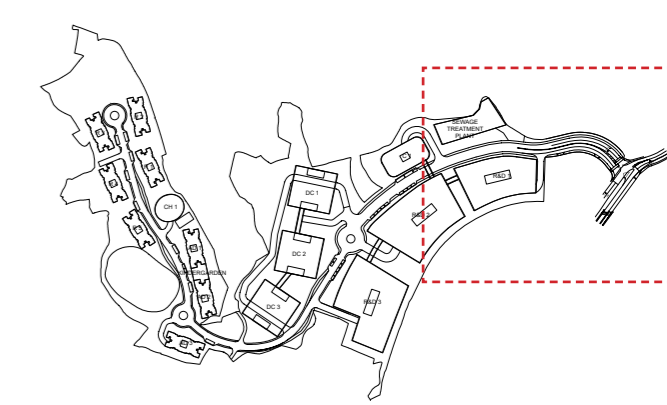
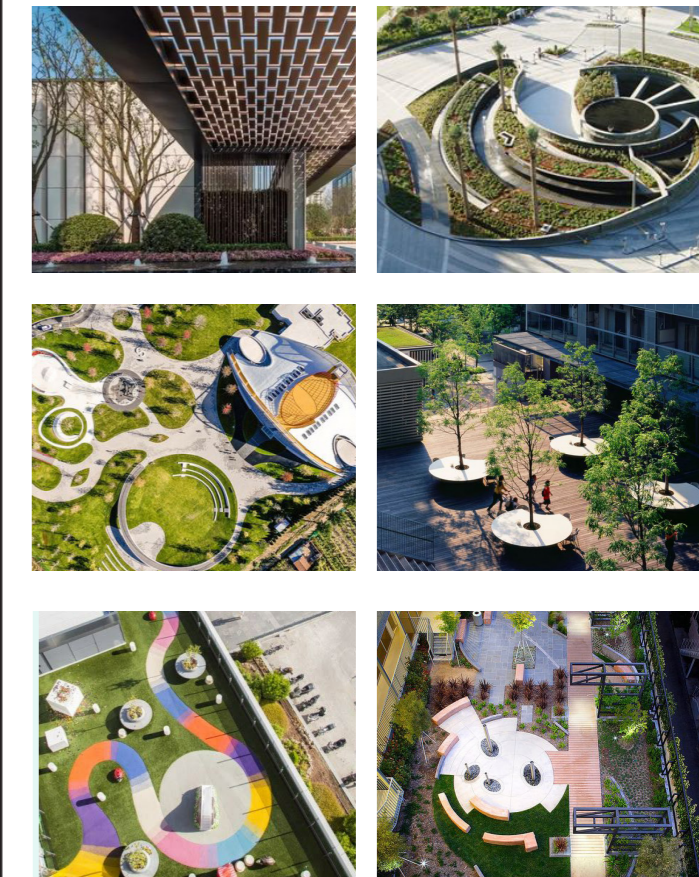
SCALE AND ORIENTATION
NTS

JOB TITLE
Section 12A Planning Application for Proposed Innovation and Technology Hub at Various Lots in D.D. 82 and D.D. 86, and Adjoining Government Land, Man Kam To, New Territories





REFERENCE IMAGE



KEY PLAN

LEGEND		
	APPLICATION SITE BOUNDARY	① OPEN LAWN AREA
	DEVELOPMENT SITE BOUNDARY	② POCKET COURTYARD
	SITE ENTRY	③ AMPHITHEATRE
	CONTROL POINT	④ FEATURE WALL
	BUILDING ENTRY	⑤ VIEWING DECK
		⑥ MULTI-FUNCTIONAL DECK
		⑦ RUNNING TRACK
		⑧ COMMUNITY FARM

DRAWING TITLE	DATE	FIGURE NO.	SCALE AND ORIENTATION
Landscape Master Plan (Sheet 5 of 5)	OCT 2024	FIG 1.5f	1:800@A3
	DRAWN	JOB TITLE	
	EJ	Section 12A Planning Application for Proposed Innovation and Technology Hub at Various Lots in D.D. 82 and D.D. 86, and Adjoining Government Land, Man Kam To, New Territories	
	CHECKED		
	RH		
	APPROVED		
	CY		

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