A/YL-MP/309

此文件在 2021年 6月 1日 收到，城市規劃委員會
只會在收到所有所需資料及文件後才正式確認收到
申請的日期。

This document is received on 1 JUN 2021.
The Town Planning Board will formally acknowledge the date of receipt of the application only upon receipt of all the required information and documents.

Form No. S16-I
表格第 S16-I 號

APPLICATION FOR PERMISSION UNDER SECTION 16 OF THE TOWN PLANNING ORDINANCE (CAP.131)

根據《城市規劃條例》(第131章)第16條遞交的許可申請

Applicable to proposals not involving or not only involving:
適用於建議不涉及或不祇涉及:

(i) Construction of "New Territories Exempted House(s)";
興建「新界豁免管制屋宇」;

(ii) Temporary use/development of land and/or building not exceeding 3 years in rural areas; and
位於鄉郊地區土地上及/或建築物內進行為期不超過三年的臨時用途/發展;及

(iii) Renewal of permission for temporary use or development in rural areas
位於鄉郊地區的臨時用途或發展的許可續期

Applicant who would like to publish the notice of application in local newspapers to meet one of the Town Planning Board's requirements of taking reasonable steps to obtain consent of or give notification to the current land owner, please refer to the following link regarding publishing the notice in the designated newspapers: https://www.info.gov.hk/tpb/en/plan_application/apply.html

申請人如欲在本地報章刊登申請通知，以採取城市規劃委員會就取得現行土地擁有人的同意或通知現行土地擁有人所指定的其中一項合理步驟，請瀏覽以下網址有關在指定的報章刊登通知：https://www.info.gov.hk/tpb/tc/plan_application/apply.html

General Note and Annotation for the Form
填寫表格的一般指引及註解

\# "Current land owner" means any person whose name is registered in the Land Registry as that of an owner of the land to which the application relates, as at 6 weeks before the application is made
「現行土地擁有人」指在提出申請前六星期，其姓名或名稱已在土地註冊處註冊為該申請所關乎的土地的擁有人的人

& Please attach documentary proof 請夾附證明文件

^ Please insert number where appropriate 請在適當地方註明編號

Please fill "NA" for inapplicable item 請在不適用的項目填寫「不適用」

Please use separate sheets if the space provided is insufficient 如所提供的空間不足，請另頁說明

Please insert a「✓」at the appropriate box 請在適當的方格內上加上「✓」號

For Official Use Only 請勿填寫此欄	Application No. 申請編號	A/YL-MP/309
	Date Received 收到日期	1 JUN 2021

1. The completed form and supporting documents (if any) should be sent to the Secretary, Town Planning Board (the Board), 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong.
申請人須把填妥的申請表格及其他支持申請的文件 (倘有)，送交香港北角渣華道 333 號北角政府合署 15 樓城市規劃委員會(下稱「委員會」)秘書收。

2. Please read the "Guidance Notes" carefully before you fill in this form. The document can be downloaded from the Board's website at http://www.info.gov.hk/tpb/. It can also be obtained from the Secretariat of the Board at 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong (Tel: 2231 4810 or 2231 4835), and the Planning Enquiry Counters of the Planning Department (Hotline: 2231 5000) (17/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong and 14/F, Sha Tin Government Offices, 1 Sheung Wo Che Road, Sha Tin, New Territories).
請先細閱《申請須知》的資料單張，然後填寫此表格。該份文件可從委員會的網頁下載 (網址：http://www.info.gov.hk/tpb/)，亦可向委員會秘書處 (香港北角渣華道 333 號北角政府合署 15 樓 – 電話：2231 4810 或 2231 4835)及規劃署的規劃資料查詢處(熱線：2231 5000) (香港北角渣華道 333 號北角政府合署 17 樓及新界沙田上禾輋路 1 號沙田政府合署 14 樓)索取。

3. This form can be downloaded from the Board's website, and obtained from the Secretariat of the Board and the Planning Enquiry Counters of the Planning Department. The form should be typed or completed in block letters. The processing of the application may be refused if the required information or the required copies are incomplete.
此表格可從委員會的網頁下載，亦可向委員會秘書處及規劃署的規劃資料查詢處索取。申請人須以打印方式或以正楷填寫表格。如果申請人所提交的資料或文件副本不齊全，委員會可拒絕處理有關申請。

1. Name of Applicant 申請人姓名/名稱

(☐Mr. 先生 /☐Mrs. 夫人 /☐Miss 小姐 /☐Ms. 女士 /☐Company 公司 /☑Organisation 機構)
World Wide Fund for Nature Hong Kong

2. Name of Authorised Agent (if applicable) 獲授權代理人姓名/名稱（如適用）

(☐Mr. 先生 /☐Mrs. 夫人 /☐Miss 小姐 /☐Ms. 女士 /☑Company 公司 /☐Organisation 機構)
PlanArch Consultants Limited

3. Application Site 申請地點

(a) Full address / location / demarcation district and lot number (if applicable) 詳細地址／地點／丈量約份及地段號碼（如適用）	Government Land along Tam Kon Chau Road in D.D. 101, Mai Po, Yuen Long.
(b) Site area and/or gross floor area involved 涉及的地盤面積及／或總樓面面積	☑Site area 地盤面積 ..... 900 sq.m 平方米 ☑About 約 ☐Gross floor area 總樓面面積 ..... N/A sq.m 平方米 ☑About 約
(c) Area of Government land included (if any) 所包括的政府土地面積（倘有）	..... 900 sq.m 平方米 ☑About 約

(d) Name and number of the related statutory plan(s) 有關法定圖則的名稱及編號	Approved Mai Po & Fairview Park Outline Zoning Plan No. S/YL-MP/6
(e) Land use zone(s) involved 涉及的土地用途地帶	"Conservation Area" & "Village Type Development"
(f) Current use(s) 現時用途	Road (If there are any Government, institution or community facilities, please illustrate on plan and specify the use and gross floor area) (如有任何政府、機構或社區設施，請在圖則上顯示，並註明用途及總樓面面積)

4. "Current Land Owner" of Application Site 申請地點的「現行土地擁有人」

The applicant 申請人 –

☐ is the sole "current land owner"#& (please proceed to Part 6 and attach documentary proof of ownership).
是唯一的「現行土地擁有人」#& (請繼續填寫第 6 部分，並夾附業權證明文件)。

☐ is one of the "current land owners"#& (please attach documentary proof of ownership).
是其中一名「現行土地擁有人」#& (請夾附業權證明文件)。

☐ is not a "current land owner"#.
並不是「現行土地擁有人」#。

☑ The application site is entirely on Government land (please proceed to Part 6).
申請地點完全位於政府土地上（請繼續填寫第 6 部分）。

5. Statement on Owner's Consent/Notification
就土地擁有人的同意/通知土地擁有人的陳述

(a) According to the record(s) of the Land Registry as at ..... (DD/MM/YYYY), this application involves a total of ..... "current land owner(s)"#.
根據土地註冊處截至 ..... 年 ..... 月 ..... 日的記錄，這宗申請共牽涉 ..... 名「現行土地擁有人」#。

(b) The applicant 申請人 –

☐ has obtained consent(s) of ..... "current land owner(s)"#.
已取得 ..... 名「現行土地擁有人」#的同意。

Details of consent of "current land owner(s)"# obtained 取得「現行土地擁有人」#同意的詳情		
No. of 'Current Land Owner(s)' 「現行土地擁有人」數目	Lot number/address of premises as shown in the record of the Land Registry where consent(s) has/have been obtained 根據土地註冊處記錄已獲得同意的地段號碼／處所地址	Date of consent obtained (DD/MM/YYYY) 取得同意的日期 (日/月/年)

(Please use separate sheets if the space of any box above is insufficient. 如上列任何方格的空間不足，請另頁說明)

☐ has notified ..... "current land owner(s)"#
已通知 ..... 名「現行土地擁有人」#。

Details of the "current land owner(s)"# notified 已獲通知「現行土地擁有人」#的詳細資料		
No. of 'Current Land Owner(s)' 「現行土地擁有人」數目	Lot number/address of premises as shown in the record of the Land Registry where notification(s) has/have been given 根據土地註冊處記錄已發出通知的地段號碼／處所地址	Date of notification given (DD/MM/YYYY) 通知日期(日/月/年)

(Please use separate sheets if the space of any box above is insufficient. 如上列任何方格的空間不足，請另頁說明)

☐ has taken reasonable steps to obtain consent of or give notification to owner(s):
已採取合理步驟以取得土地擁有人的同意或向該人發給通知。詳情如下：

Reasonable Steps to Obtain Consent of Owner(s) 取得土地擁有人的同意所採取的合理步驟

☐ sent request for consent to the "current land owner(s)" on _____ (DD/MM/YYYY)#&
於_____(日/月/年)向每一名「現行土地擁有人」#郵遞要求同意書&

Reasonable Steps to Give Notification to Owner(s) 向土地擁有人發出通知所採取的合理步驟

☐ published notices in local newspapers on _____ (DD/MM/YYYY)&
於_____(日/月/年)在指定報章就申請刊登一次通知&

☐ posted notice in a prominent position on or near application site/premises on _____ (DD/MM/YYYY)&
於_____(日/月/年)在申請地點／申請處所或附近的顯明位置貼出關於該申請的通知&

☐ sent notice to relevant owners' corporation(s)/owners' committee(s)/mutual aid committee(s)/management office(s) or rural committee on _____ (DD/MM/YYYY)&
於_____(日/月/年)把通知寄往相關的業主立案法團/業主委員會/互助委員會或管理處，或有關的鄉事委員會&

Others 其他

☐ others (please specify)
其他（請指明）

_____

_____

_____

_____

Note: May insert more than one「✓」.
Information should be provided on the basis of each and every lot (if applicable) and premises (if any) in respect of the application.
註: 可在多於一個方格內加上「✓」號
申請人須就申請涉及的每一地段（倘適用）及處所（倘有）分別提供資料

6. Type(s) of Application 申請類別

☐ Type (i) 第(i)類 Change of use within existing building or part thereof 更改現有建築物或其部分內的用途

☑ Type (ii) 第(ii)類 Diversion of stream / excavation of land / filling of land / filling of pond as required under Notes of Statutory Plan(s) 根據法定圖則《註釋》內所要求的河道改道／挖土／填土／填塘工程

☑ Type (iii) 第(iii)類 Public utility installation / Utility installation for private project 公用事業設施裝置/私人發展計劃的公用設施裝置

☐ Type (iv) 第(iv)類 Minor relaxation of stated development restriction(s) as provided under Notes of Statutory Plan(s) 略為放寬於法定圖則《註釋》內列明的發展限制

☐ Type (v) 第(v)類 Use / development other than (i) to (iii) above 上述的(i)至(iii)項以外的用途／發展

Note 1: May insert more than one 「✓」.
註 1： 可在多於一個方格內加上「✓」號
Note 2: For Development involving columbarium use, please complete the table in the Appendix.
註 2： 如發展涉及靈灰安置所用途，請填妥於附件的表格。

(i) For Type (i) application 供第(i)類申請

(a) Total floor area involved 涉及的總樓面面積	sq.m 平方米		
(b) Proposed use(s)/development 擬議用途/發展	(If there are any Government, institution or community facilities, please illustrate on plan and specify the use and gross floor area) (如有任何政府、機構或社區設施，請在圖則上顯示，並註明用途及總樓面面積)		
(c) Number of storeys involved 涉及層數		Number of units involved 涉及單位數目	
(d) Proposed floor area 擬議樓面面積	Domestic part 住用部分 ..... sq.m 平方米 ☐About 約		
	Non-domestic part 非住用部分..... sq.m 平方米 ☐About 約		
	Total 總計 ..... sq.m 平方米 ☐About 約		

(e) Proposed uses of different floors (if applicable) 不同樓層的擬議用途(如適用) (Please use separate sheets if the space provided is insufficient) (如所提供的空間不足，請另頁說明)	Floor(s) 樓層	Current use(s) 現時用途	Proposed use(s) 擬議用途

(ii) For Type (ii) application 供第(ii)類申請

(a) Operation involved 涉及工程	☐ Diversion of stream 河道改道 ☐ Filling of pond 填塘 Area of filling 填塘面積 ..... sq.m 平方米 ☐About 約 Depth of filling 填塘深度 ..... m 米 ☐About 約 ☐ Filling of land 填土 Area of filling 填土面積 ..... sq.m 平方米 ☐About 約 Depth of filling 填土厚度 ..... m 米 ☐About 約 ☑ Excavation of land 挖土(with back-filling of original material) Area of excavation 挖土面積 .....900..... sq.m 平方米 ☐About 約 Depth of excavation 挖土深度 .....1.0..... m 米 ☐About 約 (Please indicate on site plan the boundary of concerned land/pond(s), and particulars of stream diversion, the extent of filling of land/pond(s) and/or excavation of land) (請用圖則顯示有關土地／池塘界線，以及河道改道、填塘、填土及／或挖土的細節及/或範圍))
(b) Intended use/development 有意進行的用途／發展	Public Utility Installation (Public Utility Pipeline)

(iii) For Type (iii) application 供第(iii)類申請

(a) Nature and scale 性質及規模

☑ Public utility installation 公用事業設施裝置

☐ Utility installation for private project 私人發展計劃的公用設施裝置

Please specify the type and number of utility to be provided as well as the dimensions of each building/structure, where appropriate
請註明有關裝置的性質及數量，包括每座建築物/構築物(倘有)的長度、高度和闊度

Name/type of installation 裝置名稱／種類	Number of provision 數量	Dimension of each installation /building/structure (m) (LxWxH) 每個裝置／建築物／構築物的尺寸 (米) (長 x 闊 x 高)
Public Utility Installation (Public Utility Pipeline)	1 no. of underground water pipe	Diameter of pipe: 0.15m Length of pipeline: 1,500m Please refer to Plan 2 in the planning statement

(Please illustrate on plan the layout of the installation 請用圖則顯示裝置的布局)

(iv) For Type (iv) application 供第(iv)類申請

(a) Please specify the proposed minor relaxation of stated development restriction(s) and **also fill in the proposed use/development and development particulars in part (v) below** –
請列明擬議略為放寬的發展限制**並填妥於第(v)部分的擬議用途/發展及發展細節** –

☐ Plot ratio restriction 地積比率限制	From 由 ..... to 至 .....
☐ Gross floor area restriction 總樓面面積限制	From 由 .....sq. m 平方米 to 至 .....sq. m 平方米
☐ Site coverage restriction 上蓋面積限制	From 由 .....% to 至 ..... %
☐ Building height restriction 建築物高度限制	From 由 .....m 米 to 至 ..... m 米 From 由 ..... mPD 米 (主水平基準上) to 至 .....mPD 米 (主水平基準上) From 由 ..... storeys 層 to 至 ..... storeys 層
☐ Non-building area restriction 非建築用地限制	From 由 .....m to 至 ..... m
☐ Others (please specify) 其他（請註明）	.....

(v) For Type (v) application 供第(v)類申請

(a) Proposed use(s)/development 擬議用途/發展	(Please illustrate the details of the proposal on a layout plan 請用平面圖說明建議詳情)

(b) Development Schedule 發展細節表

Proposed gross floor area (GFA) 擬議總樓面面積	..... sq.m 平方米	☐About 約
Proposed plot ratio 擬議地積比率	.....	☐About 約
Proposed site coverage 擬議上蓋面積	..... %	☐About 約
Proposed no. of blocks 擬議座數	.....	
Proposed no. of storeys of each block 每座建築物的擬議層數	..... storeys 層 ☐ include 包括.....storeys of basements 層地庫 ☐ exclude 不包括.....storeys of basements 層地庫	
Proposed building height of each block 每座建築物的擬議高度	..... mPD 米(主水平基準上) ..... m 米	☐About 約 ☐About 約

☐ Domestic part 住用部分

GFA 總樓面面積	..... sq. m 平方米	☐About 約
number of Units 單位數目	.....	
average unit size 單位平均面積	.....sq. m 平方米	☐About 約
estimated number of residents 估計住客數目	.....	

☐ Non-domestic part 非住用部分

GFA 總樓面面積

☐ eating place 食肆	..... sq. m 平方米	☐About 約
☐ hotel 酒店	..... sq. m 平方米	☐About 約
	(please specify the number of rooms 請註明房間數目)	
☐ office 辦公室	.....sq. m 平方米	☐About 約
☐ shop and services 商店及服務行業	..... sq. m 平方米	☐About 約

☐ Government, institution or community facilities 政府、機構或社區設施

(please specify the use(s) and concerned land area(s)/GFA(s) 請註明用途及有關的地面面積／總樓面面積)

.....

.....

.....

☐ other(s) 其他

(please specify the use(s) and concerned land area(s)/GFA(s) 請註明用途及有關的地面面積／總樓面面積)

.....

.....

.....

☐ Open space 休憩用地

(please specify land area(s) 請註明地面面積)

☐ private open space 私人休憩用地	..... sq. m 平方米	☐ Not less than 不少於
☐ public open space 公眾休憩用地	..... sq. m 平方米	☐ Not less than 不少於

(c) Use(s) of different floors (if applicable) 各樓層的用途 (如適用)

[Block number] [座數]	[Floor(s)] [層數]	[Proposed use(s)] [擬議用途]
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

(d) Proposed use(s) of uncovered area (if any) 露天地方（倘有）的擬議用途

.....

.....

.....

.....

.....

7. Anticipated Completion Time of the Development Proposal 擬議發展計劃的預計完成時間

Anticipated completion time (in month and year) of the development proposal (by phase (if any)) (e.g. June 2023)
擬議發展計劃預期完成的年份及月份 (分期 (倘有)) (例：2023 年 6 月)
(Separate anticipated completion times (in month and year) should be provided for the proposed public open space and Government, institution or community facilities (if any))
(申請人須就擬議的公眾休憩用地及政府、機構或社區設施 (倘有) 提供個別擬議完成的年份及月份)

September 2021

8. Vehicular Access Arrangement of the Development Proposal 擬議發展計劃的行車通道安排

Any vehicular access to the site/subject building? 是否有車路通往地盤／有關建築物？	Yes 是	☐ There is an existing access. (please indicate the street name, where appropriate) 有一條現有車路。(請註明車路名稱(如適用)) ..... ☐ There is a proposed access. (please illustrate on plan and specify the width) 有一條擬議車路。（請在圖則顯示，並註明車路的闊度）
	No 否	☐
Any provision of parking space for the proposed use(s)? 是否有為擬議用途提供停車位？	Yes 是	☐ (Please specify type(s) and number(s) and illustrate on plan) 請註明種類及數目並於圖則上顯示) Private Car Parking Spaces 私家車車位 _____ Motorcycle Parking Spaces 電單車車位 _____ Light Goods Vehicle Parking Spaces 輕型貨車泊車位 _____ Medium Goods Vehicle Parking Spaces 中型貨車泊車位 _____ Heavy Goods Vehicle Parking Spaces 重型貨車泊車位 _____ Others (Please Specify) 其他 (請列明) _____ _____ _____ _____ _____
	No 否	☐
Any provision of loading/unloading space for the proposed use(s)? 是否有為擬議用途提供上落客貨車位？	Yes 是	☐ (Please specify type(s) and number(s) and illustrate on plan) 請註明種類及數目並於圖則上顯示) Taxi Spaces 的士車位 _____ Coach Spaces 旅遊巴車位 _____ Light Goods Vehicle Spaces 輕型貨車車位 _____ Medium Goods Vehicle Spaces 中型貨車車位 _____ Heavy Goods Vehicle Spaces 重型貨車車位 _____ Others (Please Specify) 其他 (請列明) _____ _____ _____ _____ _____
	No 否	☐

9. Impacts of Development Proposal 擬議發展計劃的影響

If necessary, please use separate sheets to indicate the proposed measures to minimise possible adverse impacts or give justifications/reasons for not providing such measures.
如需要的話，請另頁表示可盡量減少可能出現不良影響的措施，否則請提供理據/理由。

Does the development proposal involve alteration of existing building? 擬議發展計劃是否包括現有建築物的改動?	Yes 是	☐ Please provide details 請提供詳情 ....
	No 否	☑
Does the development proposal involve the operation on the right? 擬議發展是否涉及右列的工程? (Note: where Type (ii) application is the subject of application, please skip this section. 註：如申請涉及第(ii)類申請，請跳至下一條問題。)	Yes 是	☐ (Please indicate on site plan the boundary of concerned land/pond(s), and particulars of stream diversion, the extent of filling of land/pond(s) and/or excavation of land) (請用地盤平面圖顯示有關土地／池塘界線，以及河道改道、填塘、填土及／或挖土的細節及/或範圍) ☐ Diversion of stream 河道改道 ☐ Filling of pond 填塘 Area of filling 填塘面積 ..... sq.m 平方米 ☐About 約 Depth of filling 填塘深度 ..... m 米 ☐About 約 ☐ Filling of land 填土 Area of filling 填土面積 ..... sq.m 平方米 ☐About 約 Depth of filling 填土厚度 ..... m 米 ☐About 約 ☐ Excavation of land 挖土 Area of excavation 挖土面積..... sq.m 平方米 ☐About 約 Depth of excavation 挖土深度 .....m 米 ☐About 約
	No 否	☐

Would the development proposal cause any adverse impacts? 擬議發展計劃會否造成不良影響？		
On environment 對環境	Yes 會 ☐	No 不會 ☑
On traffic 對交通	Yes 會 ☐	No 不會 ☑
On water supply 對供水	Yes 會 ☐	No 不會 ☑
On drainage 對排水	Yes 會 ☐	No 不會 ☑
On slopes 對斜坡	Yes 會 ☐	No 不會 ☑
Affected by slopes 受斜坡影響	Yes 會 ☐	No 不會 ☑
Landscape Impact 構成景觀影響	Yes 會 ☐	No 不會 ☑
Tree Felling 砍伐樹木	Yes 會 ☐	No 不會 ☑
Visual Impact 構成視覺影響	Yes 會 ☐	No 不會 ☑
Others (Please Specify) 其他 (請列明) N/A	Yes 會 ☐	No 不會 ☐

Please state measure(s) to minimise the impact(s). For tree felling, please state the number, diameter at breast height and species of the affected trees (if possible)
請註明盡量減少影響的措施。如涉及砍伐樹木，請說明受影響樹木的數目、及胸高度的樹幹直徑及品種(倘可)

Please refer to Planning Statement
.....
.....
.....
.....
.....

10. Justifications 理由

The applicant is invited to provide justifications in support of the application. Use separate sheets if necessary.
現請申請人提供申請理由及支持其申請的資料。如有需要，請另頁說明。

Please refer to Planning Statement

11. Declaration 聲明

I hereby declare that the particulars given in this application are correct and true to the best of my knowledge and belief.
本人謹此聲明，本人就這宗申請提交的資料，據本人所知及所信，均屬真實無誤。

I hereby grant a permission to the Board to copy all the materials submitted in an application to the Board and/or to upload such materials to the Board's website for browsing and downloading by the public free-of-charge at the Board's discretion.
本人現准許委員會酌情將本人就此申請所提交的所有資料複製及/或上載至委員會網站，供公眾免費瀏覽或下載。

Signature 簽署 ..... ☐ Applicant 申請人 / ☑ Authorised Agent 獲授權代理人

BETTY S.F. HO
Name in Block Letters 姓名（請以正楷填寫）

Director
Position (if applicable) 職位 （如適用）

Professional Qualification(s) 專業資格
☐ Member 會員 / ☑ Fellow of 資深會員
☑ HKIP 香港規劃師學會 / ☐ HKIA 香港建築師學會 /
☐ HKIS 香港測量師學會 / ☐ HKIE 香港工程師學會 /
☐ HKILA 香港園境師學會/ ☐ HKIUD 香港城市設計學會 /
☑ RPP 註冊專業規劃師
Others 其他 .....

on behalf of 代表 PlanArch Consultants Limited

☑ Company 公司 / ☐ Organisation Name and Chop (if applicable) 機構名稱及蓋章（如適用）

Date 日期 21/04/2021 (DD/MM/YYYY 日/月/年)

Remark 備註

The materials submitted in an application to the Board and the Board's decision on the application would be disclosed to the public. Such materials would also be uploaded to the Board's website for browsing and free downloading by the public where the Board considers appropriate.
委員會會向公眾披露申請人所遞交的申請資料和委員會對申請所作的決定。在委員會認為合適的情況下，有關申請資料亦會上載至委員會網頁供公眾免費瀏覽及下載。

Warning 警告

Any person who knowingly or wilfully makes any statement or furnish any information in connection with this application, which is false in any material particular, shall be liable to an offence under the Crimes Ordinance.
任何人在明知或故意的情況下，就這宗申請提出在任何要項上是虛假的陳述或資料，即屬違反《刑事罪行條例》。

Statement on Personal Data 個人資料的聲明

1. The personal data submitted to the Board in this application will be used by the Secretary of the Board and Government departments for the following purposes:
委員會就這宗申請所收到的個人資料會交給委員會秘書及政府部門，以根據《城市規劃條例》及相關的城市規劃委員會規劃指引的規定作以下用途：
   (a) the processing of this application which includes making available the name of the applicant for public inspection when making available this application for public inspection; and
   處理這宗申請，包括公布這宗申請供公眾查閱，同時公布申請人的姓名供公眾查閱；以及
   (b) facilitating communication between the applicant and the Secretary of the Board/Government departments.
   方便申請人與委員會秘書及政府部門之間進行聯絡。

2. The personal data provided by the applicant in this application may also be disclosed to other persons for the purposes mentioned in paragraph 1 above.
申請人就這宗申請提供的個人資料，或亦會向其他人士披露，以作上述第 1 段提及的用途。

3. An applicant has a right of access and correction with respect to his/her personal data as provided under the Personal Data (Privacy) Ordinance (Cap. 486). Request for personal data access and correction should be addressed to the Secretary of the Board at 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong.
根據《個人資料(私隱)條例》(第 486 章)的規定，申請人有權查閱及更正其個人資料。如欲查閱及更正個人資料，應向委員會秘書提出有關要求，其地址為香港北角渣華道 333 號北角政府合署 15 樓。

For Developments involving Columbarium Use, please also complete the following:
如發展涉及靈灰安置所用途，請另外填妥以下資料:

Ash interment capacity 骨灰安放容量@

Maximum number of sets of ashes that may be interred in the niches
在龕位內最多可安放骨灰的數量 _____

Maximum number of sets of ashes that may be interred other than in niches
在非龕位的範圍內最多可安放骨灰的數量 _____

Total number of niches 龕位總數 _____

Total number of single niches
單人龕位總數 _____

Number of single niches (sold and occupied)
單人龕位數目 (已售並佔用) _____

Number of single niches (sold but unoccupied)
單人龕位數目 (已售但未佔用) _____

Number of single niches (residual for sale)
單人龕位數目 (待售) _____

Total number of double niches
雙人龕位總數 _____

Number of double niches (sold and fully occupied)
雙人龕位數目 (已售並全部佔用) _____

Number of double niches (sold and partially occupied)
雙人龕位數目 (已售並部分佔用) _____

Number of double niches (sold but unoccupied)
雙人龕位數目 (已售但未佔用) _____

Number of double niches (residual for sale)
雙人龕位數目 (待售) _____

Total no. of niches other than single or double niches (please specify type)
除單人及雙人龕位外的其他龕位總數 (請列明類別) _____

Number. of niches (sold and fully occupied)
龕位數目 (已售並全部佔用) _____

Number of niches (sold and partially occupied)
龕位數目 (已售並部分佔用) _____

Number of niches (sold but unoccupied)
龕位數目 (已售但未佔用) _____

Number of niches (residual for sale)
龕位數目 (待售) _____

Proposed operating hours 擬議營運時間 _____

_____

@ Ash interment capacity in relation to a columbarium means –
就靈灰安置所而言，骨灰安放容量指：
- the maximum number of containers of ashes that may be interred in each niche in the columbarium;
每個龕位內可安放的骨灰容器的最高數目;
- the maximum number of sets of ashes that may be interred other than in niches in any area in the columbarium; and
在該靈灰安置所並非龕位的範圍內，總共最多可安放多少份骨灰；以及
- the total number of sets of ashes that may be interred in the columbarium.
在該骨灰安置所內，總共最多可安放多少份骨灰。

Gist of Application 申請摘要

(Please provide details in both English and Chinese as far as possible. This part will be circulated to relevant consultees, uploaded to the Town Planning Board's Website for browsing and free downloading by the public and deposited at the Planning Enquiry Counters of the Planning Department for general information.)
(請盡量以英文及中文填寫。此部分將會發送予相關諮詢人士、上載至城市規劃委員會網頁供公眾免費瀏覽及下載及存放於規劃署規劃資料查詢處以供一般參閱。)

Application No. 申請編號	(For Official Use Only) (請勿填寫此欄)
Location/address 位置／地址	Government Land along Tam Kon Chau in D.D. 101, Mai Po, Yuen Long
Site area 地盤面積	900 sq. m 平方米 ☑ About 約 (includes Government land of 包括政府土地 900 sq. m 平方米 ☑ About 約)
Plan 圖則	Approved Mai Po Outline Zoning Plan No. S/YL-MP/6
Zoning 地帶	"Conservation Area" & "Village Type Development"
Applied use/ development 申請用途/發展	Public Utility Installation (Public Utility Pipeline) with excavation and back-filling of Land

		sq.m 平方米	Plot Ratio 地積比率
(i) Gross floor area and/or plot ratio 總樓面面積及／或地積比率	Domestic 住用	☐ About 約 ☐ Not more than 不多於	☐About 約 ☐Not more than 不多於
	Non-domestic 非住用	☐ About 約 ☐ Not more than 不多於	☐About 約 ☐Not more than 不多於
(ii) No. of block 幢數	Domestic 住用		
	Non-domestic 非住用		
	Composite 綜合用途		

(iii)	Building height/No. of storeys 建築物高度／層數	Domestic 住用	m 米 ☐ (Not more than 不多於)
			mPD 米(主水平基準上) ☐ (Not more than 不多於)
			Storeys(s) 層 ☐ (Not more than 不多於) (☐*Include 包括*/☐ *Exclude 不包括* ☐ *Carport 停車間* ☐ *Basement 地庫* ☐ *Refuge Floor 防火層* ☐ *Podium 平台*)
		Non-domestic 非住用	m 米 ☐ (Not more than 不多於)
			mPD 米(主水平基準上) ☐ (Not more than 不多於)
			Storeys(s) 層 ☐ (Not more than 不多於) (☐*Include 包括*/☐ *Exclude 不包括* ☐ *Carport 停車間* ☐ *Basement 地庫* ☐ *Refuge Floor 防火層* ☐ *Podium 平台*)
		Composite 綜合用途	m 米 ☐ (Not more than 不多於)
			mPD 米(主水平基準上) ☐ (Not more than 不多於)
			Storeys(s) 層 ☐ (Not more than 不多於) (☐*Include 包括*/☐ *Exclude 不包括* ☐ *Carport 停車間* ☐ *Basement 地庫* ☐ *Refuge Floor 防火層* ☐ *Podium 平台*)
(iv)	Site coverage 上蓋面積		% ☐ About 約
(v)	No. of units 單位數目		
(vi)	Open space 休憩用地	Private 私人	sq.m 平方米 ☐ Not less than 不少於
		Public 公眾	sq.m 平方米 ☐ Not less than 不少於

(vii)	No. of parking spaces and loading / unloading spaces 停車位及上落客貨車位數目	Total no. of vehicle parking spaces 停車位總數 Private Car Parking Spaces 私家車車位 Motorcycle Parking Spaces 電單車車位 Light Goods Vehicle Parking Spaces 輕型貨車泊車位 Medium Goods Vehicle Parking Spaces 中型貨車泊車位 Heavy Goods Vehicle Parking Spaces 重型貨車泊車位 Others (Please Specify) 其他 (請列明) _____ _____	
		Total no. of vehicle loading/unloading bays/lay-bys 上落客貨車位／停車處總數 Taxi Spaces 的士車位 Coach Spaces 旅遊巴車位 Light Goods Vehicle Spaces 輕型貨車車位 Medium Goods Vehicle Spaces 中型貨車位 Heavy Goods Vehicle Spaces 重型貨車車位 Others (Please Specify) 其他 (請列明) _____ _____	

Submitted Plans, Drawings and Documents 提交的圖則、繪圖及文件

	Chinese 中文	English 英文
Plans and Drawings 圖則及繪圖		
Master layout plan(s)/Layout plan(s) 總綱發展藍圖／布局設計圖	☐	☑
Block plan(s) 樓宇位置圖	☐	☐
Floor plan(s) 樓宇平面圖	☐	☐
Sectional plan(s) 截視圖	☐	☐
Elevation(s) 立視圖	☐	☐
Photomontage(s) showing the proposed development 顯示擬議發展的合成照片	☐	☐
Master landscape plan(s)/Landscape plan(s) 園境設計總圖／園境設計圖	☐	☐
Others (please specify) 其他（請註明） N/A	☐	☐
Reports 報告書		
Planning Statement/Justifications 規劃綱領/理據	☐	☑
Environmental assessment (noise, air and/or water pollutions) 環境評估（噪音、空氣及／或水的污染）	☐	☐
Traffic impact assessment (on vehicles) 就車輛的交通影響評估	☐	☐
Traffic impact assessment (on pedestrians) 就行人的交通影響評估	☐	☐
Visual impact assessment 視覺影響評估	☐	☐
Landscape impact assessment 景觀影響評估	☐	☐
Tree Survey 樹木調查	☐	☐
Geotechnical impact assessment 土力影響評估	☐	☐
Drainage impact assessment 排水影響評估	☐	☐
Sewerage impact assessment 排污影響評估	☐	☐
Risk Assessment 風險評估	☐	☐
Others (please specify) 其他（請註明） Ecological Impact Assessment	☐	☑

Note: May insert more than one「✓」. 註：可在多於一個方格內加上「✓」號

Note: The information in the Gist of Application above is provided by the applicant for easy reference of the general public. Under no circumstances will the Town Planning Board accept any liabilities for the use of the information nor any inaccuracies or discrepancies of the information provided. In case of doubt, reference should always be made to the submission of the applicant.

註： 上述申請摘要的資料是由申請人提供以方便市民大眾參考。對於所載資料在使用上的問題及文義上的歧異，城市規劃委員會概不負責。若有任何疑問，應查閱申請人提交的文件。

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PlanArch Consultants Ltd.
建港規劃顧問有限公司

Kowloon, Hong Kong.
Tel : (852)
Fax: (852) _
E-mail:

TPB Ref.: A/YL-MP/309
Our Ref.: pa/yl.mp/1608552

By Hand

Secretary
Town Planning Board
15/F., North Point Government Offices
No. 333, Java Road
North Point, Hong Kong
(Attn.: Mr Raymond KAN)

16 July 2021

Dear Sir,

S16 Application for Proposed Underground Water Pipe associated with Upgrading of a Street Fire Hydrant, and Excavation and Back-filling of Land on Government Land along Tam Kon Chau Road
DD101, Mai Po, Yuen Long

We refer to the F.I. submission dated 12.7.2021 and we would like to replace it with this submission.

We refer to the captioned. S16 submission dated 21 April 2021. Subsequent comments received from AFCD, HyD, and TD are noted. In response to the comments from Government departments, enclosed please find 8 copies of the response to comments together with the revised Ecological Impact Assessment report **(Appendix A)** for your consideration.

In the revised Ecological Impact Assessment report at Appendix A, Figure 2a, 3a and 4a are enlarged for better clarity.

For revised Figure 3a, the major habitat types and species of conservation concern or the location of nests/roosts are shown. Please note that marking the locations of all fauna on Figure 3a is not possible because a majority of them are highly mobile, for example Pallas's squirrel *(Callosciurus erythraeus)*, Small Indian mongoose *(Herpestes javanicus)* and birds and fishes. As species of conservation concern drew particular attention, their locations were noted during surveys and therefore can be shown on Figure 3a.

In addition, some typos in Section 2.7.1 and Table 8 on reptiles, as well as Section 2.5.3 on mammals and Section 2.10.1 on dragonflies are amended.

As requested by DPO/FLSSYLE, enclosed please find 8 sets of plans showing the indicative

location of the new street fire hydrant and the existing location of the water main at Castle Peak Road – Mai Po Section **(Appendix B)**. The new street hydrant will be within the "G/IC" zone and it is regarded as "Public Utility Installation", which is an always-permitted use according to the concerned Outline Zoning Plan. In addition, excavation work in relation to the new street fire hydrant in "G/IC" zone does not require permission of the Town Planning Board.

We would also like to clarify that the proposed underground water pipe associated with upgrading of a street fire hydrant is regarded as "Public Utility Installation (Utility Pipeline)". As mentioned in the submitted planning statement, the proposed use not only is an essential infrastructure to support the upgrading of the Peter Scott Field Studies Centre, but also a crucial provision to serve the local communities to ensure fire safety in the surrounding areas.

Besides, the Peter Scott Field Studies Centre has been serving local communities with meaningful public education programmes on nature conservation in the Mai Po area and sustainable development for decades as it strives to serve local communities throughout the Territory.

Please also be advised that the applicant had a meeting with Hong Kong Bird Watching Society, Conservancy Association, Kadoorie Farm and Botanic Garden and individual birdwatcher John Allcock on 8 July 2021, and the applicant plans to have on-going liaison with local green groups and relevant villagers in the vicinity to facilitate effective communication on the planning and construction of the captioned proposed use.

The above information serves as technical clarification under the section 5(b) of TPB Guideline 32, and we would like to seek an exemption from publication. In case you decide that the above information is accepted but not exempted from publication, we would like to proceed with the application with the further information.

Should you have any questions, please feel free to contact the undersigned.

Thank you for your kind attention.

Yours faithfully,
For and on behalf of
PlanArch Consultants Ltd.

Betty S. F. Ho
w/e.

cc. Alice Cheung DPO/FLSSYLE Email: ayycheung@pland.gov.hk

	Comments	Response
1.	**Agriculture, Fisheries and Conservation Department (AFCD)** **Contact: Ms. Sandra CHOW (Tel: 2150 6924)**	
	a. General Comments	
	(i) The baseline information provided covered less than half of the project area. In the absence of comprehensive baseline information, the potential ecological impact arising from the project cannot be assessed accurately.	Noted. The baseline information submitted is further supplemented by the observation on the application site, for that it falls along the concrete-paved Tam Kon Chau Road within "CA" zone and a small portion falling within the "V" zone near Castle Peak Road (Mai Po Section). The application site is a unified habitat, where there are many commercial fish ponds with intensive human management activities. Human disturbance brought to wildlife there by pedestrians and vehicles using the road and daily management of the ponds are unavoidable. Nevertheless, we recognize the intensive use by heron and egret species especially at drain-down period during harvesting, as proven by previous studies. Thus, fish ponds' ecological value is affected by human management (i.e. their ecological value would increase when the fishermen lower down the water level). No works will be carried out in winter season. For the areas near the egretry at the junction of the Tam Kon Chau Road and Castle Peak Road-Mai Po Section, to ensure no impact will be caused to

	Comments	Response
		the egrets during breeding season and their juveniles in the subsequent months, no works will be carried out between April and June. Should the young egrets leave the nest in July/ August, construction works can only be carried out until then. In fact, it was observed by the applicant that no breeding or young egret at the above-mentioned egretry was found in July 2021. Nevertheless, close monitoring of the breeding egrets and their juveniles will be carried out by the applicant, and agreement from AFCD will be sought on the applicants' observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the egretry.
	(ii) There is no detailed information about the construction method and programme of the proposed works.	Please be advised that the following substantiation is now included in Section 1.2.1 of the revised EcoIA report at Appendix A: "The construction of the proposed underground water pipe associated with the upgrading of a street fire hydrant will be carried out in 4-5 months after obtaining the excavation permit. It will be carried out in 5-6 sections, in which respective excavation work and laying of underground water pipe will be carried out by sections. The construction work will be carried out in non-bird migratory summer season. In addition, no work will be carried out from November to March next year when the ponds are drained in the portion of the pipeline alignment in "CA" zone ; on-site

	Comments	Response
		construction work in the portion in "V" zone will be done between August and October 2022 to avoid the egret breeding season (April to June 2022). Should the young egrets leave the nest in July/ August, construction works can only be carried out until then. Close monitoring of the breeding egrets and their juveniles will be carried out by the applicant, and agreement from AFCD will be sought on the applicants' observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the egretry at the junction of Tam Kon Chau Road and Castle Peak Road – Mai Po Section."
	(iii) Instead of adopting the assessment in the Environmental and Ecological Assessment for Peter Scott Field Studies Centre (SMEC 2019) which is different in works nature, the applicant should make reference to the ecological baseline in the said study, and evaluate the specific potential impacts of the subject project on the ecology.	Noted. The PSFSC EEA report comprised of useful information adopted from a comprehensive ecological survey for the PSFSC with a 500m radius from the facility, which also included the application site. Hence, relevant information from the ecological survey was included in this Ecological Impact Assessment report. The assessment is further supplemented by the observation on the application site, for that it falls along the concrete-paved Tam Kon Chau Road within "CA" zone and a small portion falling within the "V" zone near Castle Peak Road (Mai Po Section). The above clarification is included in revised Sections 1.1.4 in the

	Comments	Response
		revised Ecological Impact Assessment at **Appendix A.**
	b. Specific comments	
	(i) Section 2.1.1: It is unclear how the biodiversity information recorded within the 500m survey area along the road and buffer can be extrapolated with high confidence. It should be understood that a larger wetland area can support higher biodiversity than a smaller area of the same habitat.	Noted. An additional section known as 2.1.3 is included to substantiate the sources adopted for the Ecological Impact Assessment. Below please find the text of Section 2.1.3 for your consideration: "In addition, the assessment is further supplemented by the observation on the application site, for that it falls along the concrete-paved Tam Kon Chau Road within "CA" zone and a small portion falling within the "V" zone near Castle Peak Road (Mai Po Section). The application site is a unified habitat, where there are many commercial fish ponds with intensive human management activities. Human disturbance brought to wildlife there by pedestrians and vehicles using the road and daily management of the ponds are unavoidable. Nevertheless, we recognize the intensive use by heron and egret species especially at drain-down period during harvesting, as proven by previous studies. Thus, fish ponds' ecological value is affected by human management (i.e. their ecological value would increase when the fishermen lower down the water level).

	Comments	Response
		An active egretry is found close to the application site in the "V" zone near the road junction at Tam Kon Chau Road /Castle Road Road (Mai Po Section). The egret breeding season falls within April to June; and young ardeids may use the egretry until July/August. Close monitoring of the breeding egrets and their juveniles will be carried out by the applicant, and agreement from AFCD will be sought on the applicants' observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the egretry at the junction of Tam Kon Chau Road and Castle Peak Road – Mai Po Section."
	(ii) Section 2.1.2: Please provide the assessment period for the flora and fauna survey.	The assessment period for flora and fauna was conducted between November 2016 and December 2017 on project-specific data and the ecological information around PSFSC, with additional data from the Mai Po management plan, and from WWF surveys in 2019 and 2020. The above clarification is included in revised Section 2.1.2 in the revised Ecological Impact Assessment at Appendix A.
	(iii) Figure 3: As the current application site is the new fire hydrant pipeline instead of the Peter Scott Field Studies Centre (PSFSC), please provide habitat map along project boundary of the new fire hydrant pipeline with 500m study area and indication of species of conservation importance.	Please refer to revised Figure 3a at **Appendix A**.

	Comments	Response
	(iv) Section 2.3.2: Please specify the allowable ambient level.	The allowable ambient levels is 75dB(A) according the Noise Control Ordinance (Cap. 400). The above information is included in Section 2.3.2 of the revised Ecological Impact Assessment report at **Appendix A**.
	(v) Section 2.3.9: It is mentioned that "it is unlikely that any additional rainwater draining into the stream from the PSFSC will have a significant negative impact on the ecosystem". It seems that the assessment is not relevant to the proposed project. Please clarify and assess the water quality impact of the current project.	Noted. Amendments to Section 2.3.9 is underlined as follows: "During heavy rains and storm events the rainwater from the vicinity will eventually drain and flow through the watercourses in this habitat complex, and out into the Shenzhen River. It is unlikely that any additional rainwater draining into the stream from the proposed underground water pipe associated with the upgrading of a street fire hydrant will have a significant negative impact on the ecosystem since it is located underground the application site will be back-filled with original excavated materials."
	(vi) Section 2.3.10 (first sentence): Please clarify whether the small area of wooded area as shown in Figure 2 is outside or inside the project site.	Noted and please be advised that the application site is outside the secondary woodland area. Please refer to the revised 2.3.10. and revised Figure 2a in the revised Ecological Impact Assessment report at **Appendix A**.
	(vii) Section 2.6.1: Please confirm that works must take place, instead of "preferably take place", during the summer non-migratory season (April-October) and avoidance of	Noted. The below underlined text is included in the revised Section 2.6.1 in

	Comments	Response
	wintering season should be clearly stated as a mitigation measure.	the revised Ecological Impact Assessment report at **Appendix A.** "Mai Po is noted for harbouring tens of thousands of migratory waterbirds that use the wetlands from November to March, and other passerines that use reedbeds, shrublands, and wooded habitats. Several of these species are highly threatened and endangered and are more intolerant of disturbance. Therefore, construction work will take place during the summer non-migratory season, so that the migratory birds will not be impacted. Construction work during wintering season will be avoided as a mitigation measure. Instead, in summer only the non-migratory birds are considered. The one exception is the Indian Cuckoo (Cuculus micropterus), which is a summer visitor."
	(viii) Section 2.6.3 and Table 7: (a) Apart from "non-migratory bird species", information of other birds should also be presented. (b) The Mai Po Village egretry is located in close proximity to the proposed southern end of the pipeline. It should be included in the assessment.	Since the project will be carried out during the summer (non-migratory season), the winter migrant data is irrelevant here. Nevertheless, in view of the fact that there is an active egretry within the pipeline alignment in the "Village Type Development" zone ("V")/ near the road junction at Tam Kon Chau Road/ Castle Peak Road- Mai Po Section, no work will be carried out from April 2022 to June 2022 at this location. Should the young egrets leave the nest in July/August, construction works can only be carried out until then.

	Comments	Response
		Close monitoring will be carried out by the applicant, and agreement from AFCD will be sought on applicant's observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the above-mentioned egretry. The above information is included in the revised Section 2.6.3 of the revised Ecological Impact Assessment at **Appendix A**.
	(ix) Section 2.9.1 and Figure 3: Only two butterfly species are shown in Figure 3, as opposed to 3 rare / very rare species shown in Table 10. Please rectify the discrepancy.	Noted and revised Paragraph 2.9.1, Table 10 and Figure 3 are included in the revised Ecological Impact Assessment Report at **Appendix A**.
	(x) Section 3.2.2 and Figure 4: The information on the detailed modelling of noise level and potential impacts on the gei wai for PSFSC project is irrelevant and the works nature and scale are not comparable while the proposed pipeline is actually outside the PSFSC and along the Tam Kon Chau Road. The commercial fishponds/brackish marsh along the proposed pipeline will be subject to disturbance arising from the construction activities of the project. Please provide relevant assessment as appropriate.	Noted and revised Figure 4a is included in the revised Ecological Impact Assessment Report at **Appendix A**. The below revised text is also included in Section 3.2.2 in the Revised Ecological Impact Assessment Report at **Appendix A**. "Proposed mitigation measures such as the use of QPME, the limited extent of the works, the restriction of works hours, etc., will be adopted during construction to mitigate potential impacts to the habitat near the commercial fishponds/waterway along the proposed underground water pipe. In the event of heavy rains or a typhoon, adequate precautions will be carried out to prevent piled soil from washing into the watercourses and to ensure that no additional pollution loading into the Deep Bay Area. The proposed works

	Comments	Response
		site inside or in the proximity of nearby habitats should be temporarily isolated, such as by placing of sandbags. In addition, excavated material should be covered up by tarpaulin to avoid being washed into nearby habitats by rain. In addition, the applicant will closely monitor the construction work to ensure that no adverse impact will be caused to the nearby habitats."
	(xi) Section 4.2.1: Please provide information on the construction method and programme and explain how the potential impact on the WCA and its biodiversity is avoided/minimized.	Noted and the below information is included in the revised Section 4.2.1 in the revised Ecological Impact Assessment report at **Appendix A**. "The proposed underground water pipe associated with the upgrading of a street fire hydrant will be in compliance with the requirements of FSD and WSD, and other relevant statutory requirements to ensure no adverse impact will be caused to the surrounding areas. The construction work will be carried out in 4-5 months after obtaining the excavation permit. It will be carried out in 5-6 sections, in which respective excavation work and laying of underground water pipe will be carried out by sections. The construction work will be carried out in summer non-migratory season. Excavation permit will be obtained from DLO/YL prior to

	Comments	Response
		commencement of the excavation works on public roads."
	(xii) Section 4.3.1: Please confirm if the "ladder-like structure" will be provided (instead of "can provide"). If affirmative, please provide the details.	Noted. The following text is included in Section 4.3.1 of the revised Ecological Impact Assessment report at **Appendix A**. "A simple structure will be provided, and it will be like a log with bark leaning against the side of the excavation so that animals can use to crawl out, should they fall in."
	(xiii) Section 4.4.1: (a) Please specify the restricted works hour for avoiding disturbance to the night roosting ardeids next to PSFSC. (b) Mitigation for disturbance to the Mai Po Village egretry should also be included. For example, works at the southern 100 m of proposed pipeline would only conducted when ardeids are not breeding at the egretry.	Noted. The below text is included in the revised Section 4.4.1 in the revised Ecological Impact Assessment at **Appendix A**. (a) To avoid disturbance to the night roosting ardeid, construction work will be carried out from 0800 to 1730, which is at least one hour after sunrise and over one hour before sunset in summer non-migratory season. (b) Noted. In view of the fact that there is an active egretry within the pipeline alignment in the "Village Type Development" zone ("V")/ near the road junction at Tam Kon Chau Road/ Castle Peak Road- Mai Po Section, no work will be carried out from April 2022 to June 2022 at this location. Should the young egrets leave the nest in July/August, construction works can only be carried out until then. Close monitoring will be carried out by the applicant, and

	Comments	Response
		agreement from AFCD will be sought on applicant's observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the above-mentioned egretry.
	(xiv) Section 4.10.1: (a) Please clarify if there is any precautionary measure for mitigating the potential impacts to the wildlife in the "impact zone from noise at 106m" and "direct impact zone from the presence of people and related activity at 25m". (b) It is noted that the details on mitigation measures (e.g. the use of QPME, the restriction of works hours, and construction work in summer non-migratory season etc.) are missing. Please supplement as appropriate.	(a) and (b) Noted and the followings are included in the revised Section 4.10.1 in the revised Ecological Impact Assessment report at **Appendix A**: "Extrapolating this model to the hydrant and pipeline construction site justifies a 100 m buffer for appropriate noise attenuation. We do acknowledge that much of the habitat along either side of Tam Kon Chau Road is open ground fishponds, and sound can carry further. But these habitats are mostly commercial fishponds that encounter regular disturbance from human activity and vehicle traffic along the road. Extrapolating this model to the pipeline construction site can justify a 100 m radius for appropriate noise attenuation. Therefore, it is reasonable to: • set the impact zone from noise caused by machinery during excavation and building at 100 m, • set the direct impact from the presence of people and related activity at 25m, a reasonable distance based on flight distances of wildlife in the area that is already habituated to

	Comments	Response
		human presence (Figure 2). • Adoption of other mitigation measures such as the use of QPME, the limited extent of the works, the restriction of works hours, close monitoring the construction work by the applicant to ensure that no adverse impact will be caused to the surrounding habitats.
	(xv)Section 4.10.2: (a) Please provide the approximate duration of excavation. (b) Please provide details on the sectioning of the works, e.g. how long each section would be and if works would be conducted at one section at any one time only.	Noted and the below information is included in the revised Section 4.10.2 in the revised Ecological Impact Assessment report at **Appendix A**. "The proposed underground water pipe associated with the upgrading of a street fire hydrant will be in compliance with the requirements of FSD and WSD, and other relevant statutory requirements to ensure no adverse impact will be caused to the surrounding areas. The construction work will be carried out in 4-5 months after obtaining the excavation permit. It will be carried out in 5-6 sections, in which respective excavation work and laying of underground water pipe will be carried out by sections. The construction work will be carried out in summer non-migratory season. Excavation permit will be obtained from DLO/YL prior to

	Comments	Response
		commencement of the excavation works on public roads."
	(xvi) Section 4.12.1 & 4.12.2: Please provide details of the mitigations to be undertaken during the event of heavy rains and typhoon to ascertain there will be no additional pollution loading into Deep Bay area.	Noted and the below underlined text is included in the revised Section 4.12.1 in the revised Ecological Impact Assessment report at **Appendix A**. In the event of heavy rains or a typhoon, adequate precautions will be carried out to prevent piled soil from washing into the watercourses and to ensure that no additional pollution loading into the Deep Bay Area. The proposed works site inside or in the proximity of nearby habitats should be temporarily isolated, such as by placing of sandbags. In addition, excavated material should be covered up by tarpaulin to avoid being washed into nearby habitats by rain.
	(xvii) Section 5: Please confirm if all construction will be completed in the summer season 2021 (i.e. until Oct 2021) outside the bird migratory season.	Noted and it is confirmed all construction works will be completed outside the bird migratory season (i.e., until October 2021). If the works cannot be completed in 2021, then the construction work for the portion in "CA" zone will be done in April to June 2022 and the portion in "V" zone will be done between August and October 2022. The above information is included in the revised Section 5 in the Ecological Impact Assessment report.
	c. Other comments	

	Comments	Response
	(i) Information on the recognized sites of conservation importance within/in proximity to the project site including the WCA, WBA, Ramsar Site, SSSI and egretry etc. should be provided.	Noted. Section 1.1.1 is revised as follows and it is included in the revised Ecological Impact Assessment report at Appendix A. "The project site is located within WBA, WCA and Ramsar Site and near to the site, there are one night roost for ardeids and one egretry. The site is not within "Site of Special Scientific Interest" ("SSSI") zone on the concerned Outline Zoning Plan. The Peter Scott Field Studies Centre (PSFSC), situated at the end of Tam Kon Chau Road, falls within a Government, Institution or Community (G/IC) zone, along with the Hong Kong Police Force's Pak Hok Chau Operational Base, insularized within a Conservation Area ("CA" zone) (Figure 1). The Mai Po Site of Special Scientific Interest (SSSI), that includes Mai Po Nature Reserve, lies to the east."
	(ii) Typos are noted in various sections. Please amend accordingly.	Noted.
2.	**Transport Department** **Contact: Mr. TSE Ho Hang (Tel: 2399 2727)**	
	(i) The subject site is connected to Castle Peak Road – Mai Po via a section of Tam Kon Chau Road which is not managed by Transport Department. The land status of the local access should be clarified with the Lands Department by the applicant. Moreover, the management and maintenance responsibilities of the local access should be clarified with the	Noted. Should the application be approved by the Town Planning Board, the applicant shall clarify the management and maintenance responsibilities of the local access with the relevant lands and maintenance authorities accordingly.

<table>
<tr><th></th><th>Comments</th><th>Response</th></tr>
<tr><td></td><td>relevant lands and maintenance authorities accordingly.</td><td></td></tr>
<tr><td></td><td>(ii) Please be informed that all vehicles of 10m or above are currently prohibited to enter Tam Kon Chau Road.</td><td>Noted.</td></tr>
<tr><td></td><td>(iii) The applicant should specify the type(s) of construction vehicle allowed for entering the subject site.</td><td rowspan="2">Please be advised that the construction works for the proposed underground water pipe associated with a new street fire hydrant will only involve transportation of a small excavator, equipment and pipes by one 5.5-ton lorry crane vehicle, as well as one 5.5m^3 concrete truck mixer, to access the application site via Tam Kon Chau Road and carry out the construction works for 4-5 months.

In view of the small scale of construction work to be involved, it is estimated that the trip generation will be minimal – please refer to the below table for details:

<table><tr><th></th><th>Roundtrips to Application Site</th><th>Proposed arrival time of work vehicle</th></tr><tr><td>Use of one 5.5 tons lorry crane vehicle</td><td>2-4 roundtrips per month</td><td>Between 10am and 4pm (off-peak hours)</td></tr><tr><td>Use of one 5.5m^3 concrete truck mixer</td><td>1-2 roundtrips per month</td><td>Between 10am and 4pm (off-peak hours)</td></tr></table>
Both the loading/unloading activities and pouring of concrete will be completed quickly on-site and will leave application site once the work is finished.</td></tr>
<tr><td></td><td>(iv) The applicant should provide details of trip generation for the proposed construction works and demonstrate the traffic generated from the subject site would not have traffic impact on Castle Peak Road – Mai Po.</td></tr>
</table>

	Comments	Response
		Workers will only take public transportation and then walk to the application site. Therefore, there will be no other traffic trips or car parking on daily basis during construction. Since low traffic trip generation is expected, the construction work for the proposed use at the application site would not have traffic impact on Castle Peak Road – Mai Po Section.
3.	**Highways Department** **Contact: Ms. Patsy CHEUNG (Tel: 2762 4185)**	
	(i) Tam Kon Chau Road is not maintained by HyD;	Noted.
	(ii) Please request the applicant to clarify whether there is a proposed vehicular access to the site. If no vehicular access to the site is proposed and the application is approved, you are recommended to highlight in the reply to the applicant that the application is approved on the understanding that there is and will be no vehicular access to/from the site. Otherwise, the proposed access arrangement of the application site should be commented and approved by TD;	Please be advised that the application site is the proposed excavation area for the laying of pipes. Since the application site is located on Tam Kon Chau Road, the small excavator, equipment, materials and tools will be transported/ dropped off near the application site on Tam Kon Chau Road to carry out the works. It is noted that the proposed access arrangement would be subject to Transport Department's agreement.

	Comments	Response
	(iii) Adequate drainage measures should be provided to prevent surface water running from the site to the nearby public roads and drains.	Noted. Good site practice will be implemented during construction and contractors will follow all applicable mitigation measures specified in ProPECC PN 1/94 to ensure no adverse impact will be caused to the surrounding areas.

Appendix A

Ecological Impact Assessment

Provision of upgrade to public street Fire Hydrant and Provisioning Water Supply Pipeline at Tam Kon Chau Road, Yuen Long on Government Land DD Lot 101

Dr. Mark Shea

Director, China Hong Kong Ecology Consultants Ltd.

July 2021

Contents

Tables

Figures

1. Introduction

1.1. Preamble

1.1.1. The project site is located within WBA, WCA and Ramsar Site and near to the site, there are one night roost for ardeids and one egretry. The site is not within "Site of Special Scientific Interest" ("SSSI") zone on the concerned Outline Zoning Plan.

1.1.2. The Peter Scott Field Studies Centre (PSFSC), situated at the end of Tam Kon Chau Road, falls within a Government, Institution or Community (G/IC) zone, along with the Hong Kong Police Force's Pak Hok Chau Operational Base, insularized within a Conservation Area ("CA" zone) (Figure 1). The Mai Po Site of Special Scientific Interest (SSSI), that includes Mai Po Nature Reserve, lies to the east.

1.1.3. The PSFSC is now being upgraded to a state-of-the art education and training facility to meet the needs of a 21st Century conservation field centre, and to support the visitors to Mai Po and conservation professionals from Hong Kong and the region who will undergo training in wetland management.

1.1.4. In line with the strategy to ensure stringent conformity to environmental standard and safeguards during construction and subsequent operation, a comprehensive assessment of the environment and ecology (EEA) has been completed. The EEA findings are there will be minimal impact to the surrounding areas and measures to mitigate any impact.

The PSFSC EEA report comprised of useful information adopted from a comprehensive ecological survey for the PSFSC with a 500m radius from the facility, which also included the application site. Hence, relevant information from the ecological survey was included in this Ecological Impact Assessment report.

The assessment is further supplemented by the observation on the application site, for that it falls along the concrete-paved Tam Kon Chau Road within "CA" zone and a small portion falling within the "V" zone near Castle Peak Road (Mai Po Section).

1.1.5. The rebuild of PSFSC includes upgrading the existing public street fire hydrant and the water provisioning pipeline extending from the WSD's water main at Castle Peak Road – Mai Po section, along Tam Kon Chau to PSFSC (**Figure 2a**).

1.1.6. The Fire Services Department (FSD) requires a street fire hydrant system in accordance with para. 5.25 of the FSI Code to issue the Fire Services Certificate (F.S. 161) to upgrade the system. According to the Water Supplies Department (WSD), there is limited capacity of the water distribution system to install a new pedestal hydrant to replace the current swan neck street fire hydrant, which is not considered a standard street fire hydrant to meet the standard FSI Code. The new system will be a two-outlet street fire hydrant, as requested by WSD.

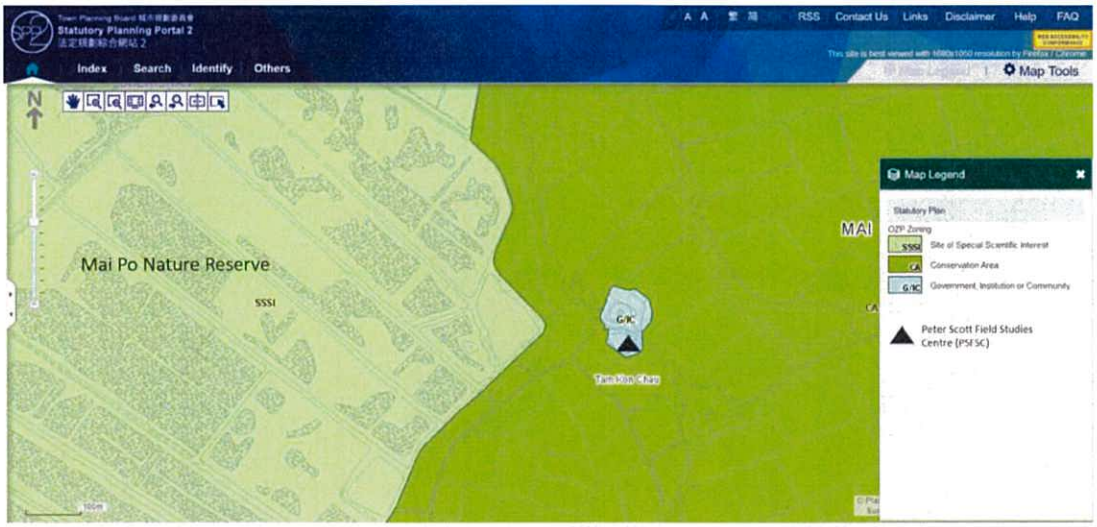


Figure 1. Location of the Peter Scott Field Studies Centre, embedded within the Government, Institution or Community (GI/C) zone, in relation to the Conservation Area (CS) and Site of Special Scientific Interest (SSSI). Map source: https://www2.ozp.tpb.gov.hk/gos/

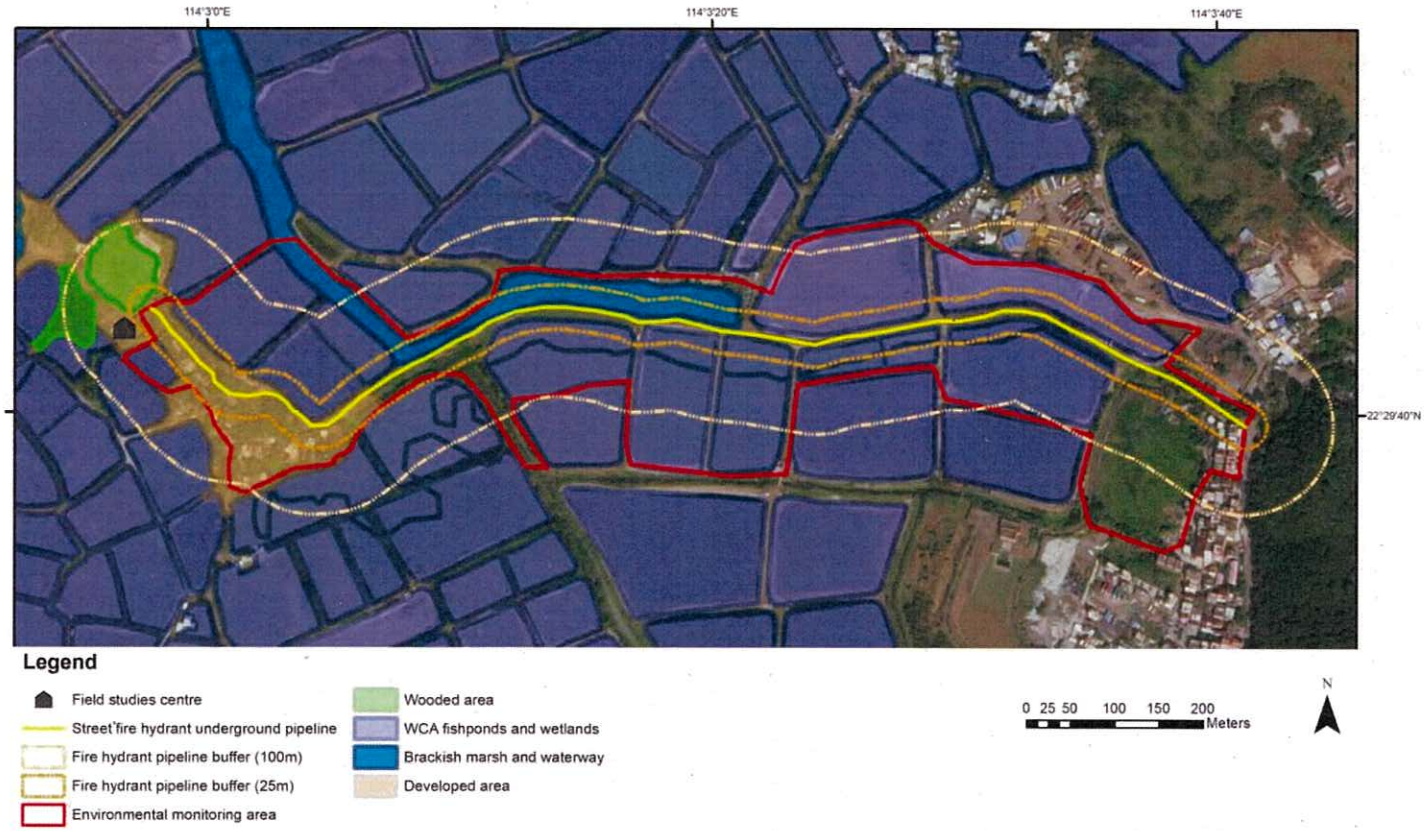


Figure 2a. Project area showing the proposed PSFSC fire hydrant pipeline. The 25m and 100 m contours are shown to identify the extents of anthropogenic disturbance zones for presence and human activity and for noise attenuation from heavy machinery, respectively.

•The 25 m buffer from the proposed pipeline identifies the distance of direct impact on wildlife species from the presence of people and related activity, a reasonable distance based on flight distances of wildlife in the area that is already habituated to human presence

•The 100 m buffer from the proposed pipeline identifies the impact zone from noise caused by machinery during excavation, based on noise attenuation models created and tested under the ecological and environmental impact assessment (SMEC 2019).

•The environmental monitoring area from the fire hydrant pipeline construction demarcated by the red polygon shows the fishponds and the complex of marsh/natural watercourse habitats that could become impacted by spillage of soil and other construction-related pollutants. These are adjacent ponds that are individually and physically bounded and separated by bunds, preventing the spread to adjacent ponds, and the marsh/stream complex.

1.2. Design of the fire hydrant pipeline upgrade

1.2.1. The new system will be an underground water pipe linking the town main at Castle Peak Road (Mai Po Section) to the new street fire hydrant near the PSFSC. The new street fire hydrant will have a water pipe with adequate water pressure and will comply with current FSI Code. The water pipe will be 150mm in diameter, and the proposed alignment is about 1,500m long. The excavation area is limited to be only 0.6m wide and 1,500m long, and about 1.0m deep. Upon the installation of the proposed facilities, the water pipe will be covered with the original excavation material.

The construction of the proposed underground water pipe associated with the upgrading of a street fire hydrant will be carried out in 4-5 months after obtaining the excavation permit. It will be carried out in 5-6 sections, in which respective excavation work and laying of underground water pipe will be carried out by sections.

The construction work will be carried out in non-bird migratory summer season to minimize potential impacts to the habitats in the surrounding areas. In addition, no work will be carried out from November to March next year when the ponds are drained in the portion of the pipeline alignment in "CA" zone ; on-site construction work in the portion in "V" zone will be done between August and October 2022 to avoid the egret breeding season (April to June 2022). Should the young egrets leave the nest in July/ August, construction works can only be carried out until then.

Close monitoring of the breeding egrets and their juveniles will be carried out by the applicant, and agreement from AFCD will be sought on the applicants' observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the egretry at the junction of Tam Kon Chau Road and Castle Peak Road – Mai Po Section.

1.2.2. Since the proposed FS hydrant and water supply pipe utility installation involves some land excavation works in the roadway of the conservation area ("CA" zone), permission is being sought from Town Planning Board (TPB) under Section 16 (S.16) of the Town Planning Ordinance.

1.2.3. This report provides a review of the Environmental and Ecological Assessment (2019) and an analysis of the biodiversity surveys and ecological impacts on the flora, fauna, and major ecosystems from the proposed project with recommendations for mitigations during project implementation.

2. Results and Potential Ecological Impacts

2.1. Literature Review

2.1.1. An Environmental and Ecological Assessment prepared in 2019 (SMEC 2019) for the redevelopment of the PSFSC identified seven major landuse/land cover types within a 500 m radius of the project site; namely brackish gei wai, rain-fed ponds, commercial fishponds, brackish marsh, natural watercourse, wooded areas, and developed areas (Figure 3a). While this 500 m radius of study does not cover the entire extent of the water supply line, the similarity of habitats along the pipeline (**Figures 2a and 3a**) can allow an extrapolation of the biodiversity information recorded within this 500 m survey area along the road and buffer with high confidence.

2.1.2. The biodiversity assessment included a survey of flora and fauna, which was conducted between November 2016 and December 2017 on project-specific data and the ecological information around PSFSC, with additional data from the Mai Po management plan, and from WWF surveys in 2019 and 2020. The faunal groups surveyed included mammals, birds, reptiles, amphibians, fishes, Odonates (dragonflies), and butterflies. Together, these groups of flora and fauna are sufficient to assess the ecological impact of the proposed construction of the drainage pipe and can act as proxies for other taxonomic groups.

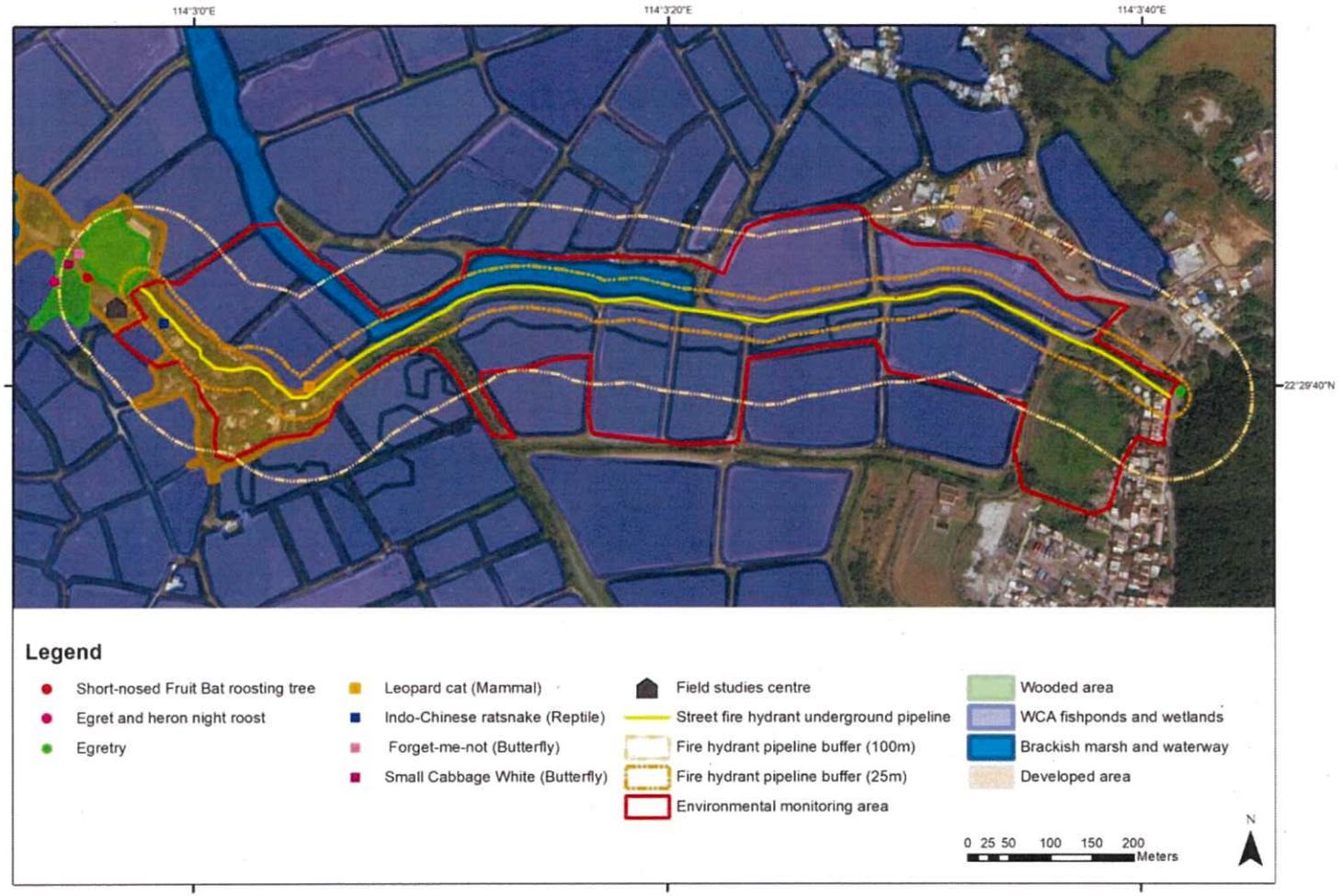
2.1.3. In addition, the assessment is further supplemented by the observation on the application site, for that it falls along the concrete-paved Tam Kon Chau Road within "CA" zone and a small portion falling within the "V" zone near Castle Peak Road (Mai Po Section).

The application site is a unified habitat, where there are many commercial fish ponds with intensive human management activities. Human disturbance brought to wildlife there by pedestrians and vehicles using the road and daily management of the ponds are unavoidable. Nevertheless, we recognize the intensive use by heron and egret species especially at drain-down period during harvesting, as proven by previous studies. Thus, fish ponds' ecological value is affected by human management (i.e. their ecological value would increase only when the fishermen lower down the water level).

An active egretary is found close to the application site in the "V" zone near the road junction at Tam Kon Chau Road /Castle Road Road (Mai Po Section). The egret breeding season falls within April to June; and young ardeids may use the egretry until July/August.

Close monitoring of the breeding egrets and their juveniles will be carried out by the applicant, and agreement from AFCD will be sought on the applicants' observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the egretry at the junction of Tam Kon Chau Road and Castle Peak Road – Mai Po Section.

Figure 3a. Major habitat types and species of conservation importance identified within the 100 m and 25m zones of the construction area for the proposed use



2.2. Overview

2.2.1. Overall, none of the faunal species found in the major habitats can be considered either territorial or highly philopatric to that small area of impact. Thus, it is unlikely that excavating along the proposed fire hydrant pipeline will have direct and permanent impacts on the fauna. Because the excavation will be along a paved area, there will be no impact on vegetation and floral species.

2.2.2. The area to be excavated is mostly along Tam Kon Chau Road; a developed area with regular vehicular traffic and human presence and activity. Thus, most wildlife in this area is habituated to higher ambient noise levels and human activity.

2.3. Major habitats

Brackish Gei Wai and Rain-fed Ponds in the Mai Po Nature Reserve

2.3.1. The gei wai and rainfed ponds are in the Mai Po Nature Reserve, which is over 150 m from the nearest point of the project area. These represent some of the most important habitats in the Mai Po Inner Deep Bay Ramsar site and support the important biodiversity in Mai Po.

2.3.2. An ecological assessment of the brackish gei wai and rainfed ponds in the Mai Po Nature Reserve by the Environmental and Ecological Assessment (2019)[1] is given in **Table 1**. Overall, the excavation site is over 150 m from these habitats and will not cause any direct physical damage to these habitats. Any noise will likely get attenuated to allowable ambient level of 75dB(A) (i.e., based on Noise Control Ordinance (Cap.400)).

Table 1. Ecological values and ranking of the brackish gei wai and rain-fed ponds in the project area. Table from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

Criteria	MPNR Brackish Gei Wai and Rain-fed Pond
Naturalness	Originally a modified habitat mosaic but actively managed to enhance its natural features.
Diversity	High diversity of fauna, especially birds, moderate diversity of flora.
Rarity	Actively managed wetlands are few in Hong Kong and MPNR is much the largest, thus rendering it unique in a Hong Kong context and rare in a regional context.
Re-creatability	Potentially re-creatable, especially if baseline conditions include existing coastal wetland habitats such as fish ponds, though some habitats such as mangroves would take some time to reach maturity and resource inputs would be high.
Fragmentation	Not fragmented.
Ecological linkage	Strong ecological linkages to other habitats in the Ramsar Site.
Potential value	Despite its high existing value, ongoing active management has the potential to increase value incrementally.
Nursery/breeding ground	Significant breeding ground, especially for wetland birds and some aquatic invertebrates and fish.
Age	Actively managed as a nature reserve for just over 30 years.
Abundance/richness of wildlife	Bird diversity and abundance are high to very high especially during migration and winter seasons. Other faunal groups are also more abundant and diverse than in most Deep Bay wetland areas.
Ecological value	**Very High Ecological Value.**

Commercial Fishponds in the Wetland Conservation Area

2.3.3. Fishponds are the dominant habitat in the project area (**Figure 2a**). Most are actively maintained for pisciculture, and includes stocking, grow-out, and harvesting of fish. Pond management includes

[1] SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

managing and monitoring of water quality and re-profiling ponds as necessary. Bund vegetation is regularly managed and is mostly maintained with very low vegetation. The dominant plant species are common grasses and ruderal herbs, with scattered trees. Vehicular traffic along some bunds is present. These bunds have been strengthened by import of fill material, limiting the colonisation of vegetation. Dogs are often present, creating an additional source of disturbance to wildlife. There are some community ponds and these ponds are not actively managed as commercial fishponds. Thus, the landscape of commercial fishponds is highly managed and are sites of high anthropogenic activity.

2.3.4. An ecological assessment of the Commercial Fishponds by the Environmental and Ecological Assessment (2019) is given in **Table 2**. Overall, the excavation will not cause any direct physical damage to these fishponds. Any impact on fauna from noise and anthropogenic activity associated with the excavation and building works should not add significantly to the ambient anthropogenic disturbances.

Table 2. Ecological values and ranking of the commercial fishponds in the project area. Table from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

Criteria	Active Fish Pond	Abandoned Fish Pond
Naturalness	Man-made habitat with high levels of human activity.	Man-made habitat but now with low levels of human disturbance.
Diversity	Low habitat and vegetation diversity but moderate diversity of fauna, especially birds.	Diversity of vegetation and microhabitats higher than in managed ponds, similar overall faunal diversity but species composition differs.
Rarity	Fish ponds are a common habitat in the Deep Bay area, but are becoming less common throughout Hong Kong. Active fish ponds at Lut Chau are important for Collared Crow (globally Near-threatened).	Fish ponds are a common habitat in the Deep Bay area, but are becoming less common throughout Hong Kong. Blocks of contiguous abandoned fish ponds with such low levels of human disturbance as those to the south of Pak Hok Chau are unusual.
Re-creatability	Easily re-creatable.	Easily re-creatable.
Fragmentation	Not fragmented.	Not fragmented.
Ecological linkage	Ponds show strong ecological linkage to nearby wetland habitats, including abandoned ponds and intertidal rivers.	Ponds show strong ecological linkage to nearby fish ponds and other wetland habitats.
Potential value	Value could be increased by more ecologically-friendly management methods. The MAs may be effective in this respect. However, value may also decrease if fisheries management becomes more intensive.	Value could be increased by more ecologically-friendly management methods. However, value may also decrease if fisheries management is resumed and becomes intensive.
Nursery/breeding ground	No significant nursery or breeding grounds, but used by foraging egrets from Mai Po Village and Mai Po Lung Village egretries.	No significant nursery or breeding grounds known but doubtless supports breeding wetland-dependent fauna including disturbance-sensitive species.
Age	Not known but moderately old.	Not known but moderately old.
Abundance/richness of wildlife	Some waterbird species, notably ardeids, are routinely present in moderate numbers and may be abundant during pond-drain down. Low abundance and diversity of other fauna (dragonflies and amphibians).	Abundance generally of waterbirds typically lower than in active ponds but this is partly a function of species using this habitat being more solitary than those which favour active ponds; other faunal groups, such as amphibians, generally more abundant and diverse than in managed ponds.
Ecological value	In their current state these ponds attract moderate numbers and diversity of wetland species, although some wetland birds are present in good numbers and the ecological linkages are good; these active ponds are therefore considered currently to be of moderate to high importance. However, given their scale and location and their ecological linkages to MPNR, there is considerable potential to improve these ponds by MAs and similar means and taking this potential value into account these ponds are considered to be of **High Ecological Value.**	These abandoned ponds support smaller numbers of birds of conservation importance than active ponds. However, taking into account their value for other wetland fauna, the fact that they support a different suite of wetland birds to active ponds, the relatively large area and its freedom from disturbance, these ponds are considered to be of **High Ecological Value.**

Brackish Marshes and Natural Watercourses

2.3.5. Brackish marshes and streamshave been combined in **Figure 2a**. The stream can be identified by the line of trees/mangroves in the map. The stream discharges into the Shenzhen River to the north of Tam Kon Chau.

2.3.6. This complex of habitats is influenced by tidal fluxes, and is periodically inundated and flushed by the brackish water from the bay. The fauna in this habitat complex includes bird species such as ardeids, rails and wetland-dependent or associated passerines, such as Oriental Reed, Black-browed Reed and Dusky Warblers.

2.3.7. The marshes in Mai Po also support the Mai Po bent-winged firefly (*Pteroptyx maipo*), a species considered endemic to Deep Bay; however, it is unclear if the species was recorded from the mangroves in this habitat complex.

2.3.8. The ecological evaluation of Brackish Marshes and Natural Watercourses by the Environmental and Ecological Assessment (2019) is given in **Table 3**.

2.3.9. During heavy rains and storm events the rainwater from the vicinity will eventually drain and flow through the watercourses in this habitat complex, and out into the Shenzhen River. It is unlikely that any additional rainwater draining into the stream from the proposed underground water pipe associated with the upgrading of a street fire hydrant will have a significant negative impact on the ecosystem since it is located underground the application site will be back-filled with original excavated materials.

Table 3. Ecological values and ranking of the brackish marshes and natural watercourses in the project area. Table from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

Criteria	Brackish Marshes and Natural Watercourses
Naturalness	Natural habitat with few recent anthropogenic influences.
Diversity	Low diversity of microhabitat types but reasonably high faunal diversity, especially birds and invertebrates.
Rarity	Habitat is relatively rare in Hong Kong, and many areas are threatened by anthropogenic activities and succession. Most species using this habitat are not rare but some are habitat specialists, notably Bent-winged Firefly.
Re-creatability	Could be re-created at a suitable location by restoring channelised watercourse and adjacent habitats.
Fragmentation	Not fragmented.
Ecological linkage	Ecologically linked to mudflats and mangrove and fish pond areas, but upstream linkages are blocked by channelised watercourse and urban development.
Potential value	Could be enhanced by conservation management and reduction in pollution load to watercourses.
Nursery/breeding ground	No significant nursery or breeding grounds.
Age	Not known.
Abundance/richness of wildlife	High abundance and diversity of wetland birds and some invertebrate groups.
Ecological value	Considered to be of **High Ecological Value**.

Wooded Area

2.3.10. The application site is outside the secondary woodland area near Tam Kon Chau Road (**Figure 2a**). The wooded area is dominated by naturally regenerated native tree species, especially *Ficus microcarpa* that attracts several frugivorous bird species, including a colony of Azure-winged Magpies (*Cyanopica cyanus*), an exotic species to Hong Kong. A pair of Chinese Blackbirds (*Turdus mandarinus*), a winter visitor, has been documented breeding around the PSFSC since at least 2007 (SMEC 2019). A *Livistona chinensis* tree in this wooded area is utilised as a roost site by Short-nosed Fruit Bat (SMEC 2019).

2.3.11. An ecological evaluation of the Wooded Area by the Environmental and Ecological Assessment (2019) is given in **Table 4**.

2.3.12. This habitat is considered to be of Moderate Ecological Value (**Table 4**), but overall, the excavation will not cause any physical damage to the wooded area since the physical works will occur along the road.

Table 4. Ecological values and ranking of the Wooded Area in the project area. Table from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

Criteria	Wooded Area
Naturalness	Naturally regenerated but some anthropogenic influences and planted / exotic species present.
Diversity	Low diversity of woody flora and resident fauna due to small size but visited by a relatively high diversity of migratory birds on a casual basis.
Rarity	Disturbed secondary woodland is a common habitat in Hong Kong.
Re-creatability	Can be re-created in suitable locations, although trees would take a long time to reach maturity.
Fragmentation	Internally fragmented by buildings; fragmented from other woodland habitats by wetland areas.
Ecological linkage	Utilised as roosting sites by birds foraging in adjacent wetland areas; wooded area north of PSFSC was formerly utilised by breeding Chinese Pond Herons.
Potential value	Value will increase naturally over time as trees mature; areas around PSFSC could be increased if brought under conservation management.
Nursery/breeding ground	Wooded area north of PSFSC formerly used by breeding Chinese Pond Herons, currently used by breeding Azure-winged Magpies and Chinese Blackbird and roosting Short-nosed Fruit Bats.
Age	Uncertain but many trees are large.
Abundance/richness of wildlife	Low abundance but moderate diversity of fauna, notably birds.
Ecological value	Most trees are native but small areas and disturbance compromises the habitat value to some extent, thus assessed as of **Moderate Ecological Value**.

Developed Areas

2.3.13. The project area lies within the developed area. The area consists of small groups of domestic and farm structures along Tam Kok Chau Road (**Figure 2a**). The environs of domestic structures around Tam Kon Chau Road are well vegetated with ornamental trees and shrubs and fruit trees which attract several birds and butterflies that are nevertheless mostly common and widespread in Hong Kong.

2.3.14. An ecological evaluation of the Developed Areas by the Environmental and Ecological Assessment (2019) is given in **Table 5**.

2.3.15. The excavation works for the proposed fire hydrant pipeline will construct along the road in this area. But, because all fauna recorded in this habitat are common and widespread, and not considered philopatric or territorial, significant impacts from the construction work is highly unlikely.

Table 5. Ecological values and ranking of the Developed Area in the project area. Table from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

Criteria	Developed Area
Naturalness	An artificial, man-made habitat.
Diversity	A low to moderate diversity of vegetation managed for cultivation and ornamental purposes around houses.
Rarity	A common habitat in Hong Kong.
Re-creatability	Easily re-creatable.
Fragmentation	Most developed areas in the Study Area are rather fragmented and do not pose a significant barrier to faunal movement.
Ecological linkage	No significant ecological linkages.
Potential value	Little scope for an increase in ecological value.
Nursery/breeding ground	Some structures are used by breeding White-shouldered Starlings and perhaps by bats.
Age	Most areas occupied by structures have been developed for many years, with little recent change in the areas and extent of development. However, there has been an increase in the area occupied by on-farm structures in recent years, especially to the south of Tam Kon Chau Road.
Abundance/richness of wildlife	Moderate abundance and diversity of bird and butterfly species associated with domestic and farm structures; most species are habitat-generalists but the locally distributed White-shouldered Starling appears to be largely dependent upon anthropogenic breeding sites in Hong Kong.
Ecological value	In general, developed areas are considered to be of **Low Ecological Value**, however the domestic structures and their environs at Tam Kon Chau Road are considered to be of **Low to Moderate Ecological Value** in view of their importance to breeding White-shouldered Starlings.

2.4. Flora and Vegetation

2.4.1. The proposed excavation site lies along a concrete-paved road. The beginning of the road has two small wooded patches on either side with trees that include Macaranga tanarius var. tomentosa, Ficus subpisocarpa, Melia azedarach, Celtis sinensis and Ficus microcarpa, but the open sections further east (Figure 2a) are lined with a verge with ruderal herbs and grasses, such as Bidens alba, Chloris barbata and Panicum maximum, and shrubs such as Lantana camara and Ligustrum sinense.

2.5. Mammals

2.5.1. A Chinese Fan Palm (Livistona chinensis) adjacent to Pond 182 and Pak Hok Chau Public Toilet was identified as a Short-nosed Fruit Bat (Cynopterus sphinx) roosting site, with about 14 individuals. Juveniles among this group indicated that this was a maternity roost. Although the Short-nosed Fruit Bat is protected locally under Cap.170, it is considered very common in Hong Kong, and is very widely distributed in urban and countryside areas throughout Hong Kong (AFCD 2017). Since the roosting bats seem habituated to existing disturbance levels, it is unlikely that the excavation will cause much impact to this bat colony. Surveys after construction of the field studies centre began indicate that the bats are still using the roosting site. Many of the other bats that have been recorded from Mai Po will also be expected to use the project area, but because they are nocturnal, it is very unlikely that the construction work will affect these species. The surveys did not locate any roosting areas of these bats.

2.5.2. Other mammals recorded from the 500 m study area include the Leopard Cat (Prionailurus bengalensis), Pallas's squirrel (Callosciurus erythraeus), and the Small Indian mongoose (*Herpestes javanicus*).

2.5.3. While the evidence of leopard cat presence was of scat recorded along Tam Kon Chau Road (Figure 3a), it is likely that this species is more widely distributed in the study area, including in proximity to the pipeline excavation site and the hydrant construction site. However, the species is a habitat generalist, is nocturnal, and even prefers habitat that is moderately human-modified (Wu et al 2020). Thus, it is very likely that any leopard cats close to the project area will adapt and not be affected by any daytime disturbance cause by construction as they are nocturnal species.

2.5.4. The Small Indian mongoose has an extensive global range distribution and has been introduced into areas outside its natural range where it has thrived. The species was first definitely recorded in Hong Kong in the 1980s, but is now considered to be abundant in the Mai Po Nature Reserve, and widespread throughout the central and northern New Territories (Dudgeon and Corlett 2004). The species adapts well to disturbance (Pei et al. 2010), and any project-related impacts to animals in the vicinity will likely be minimal and impermanent.

2.5.5. The Pallas's Squirrel is an introduced species in Hong Kong and is common[2] The squirrels are mostly found in the wooded areas, on trees, and will not be significantly affected by the excavation work.

2.5.6. There are other species that have been recorded from Mai Po Nature Reserve (Table 6, WWF 2019) that have not been recorded during the mammal surveys. Many of these species could occur in the project site. Species such as the Small Indian civet (Viverricula indica) and East Asian porcupine (Hystrix brachyura) are largely nocturnal, seeking dens and other refugia during the daytime. Thus, any activity related to excavation and construction will not have a significant impact on these species.

2.5.7. Among the rodents, the Lesser Rice-field Rat (Rattus losea) and Ryukyu Mouse (Mus caroli) have been recorded from the Mai Po area only. While the former is considered common, the latter is rare, but both have extensive range distributions across Asia and are listed as Least Concern in the IUCN Red List.3

2.5.8. Another species that should be of concern is the Eurasian otter (Lutra lutra). However, there have not been any records of otters from the project area. Recent camera trap surveys (albeit since 2021) in the fishponds close to PSFSC have also not confirmed the presence of otters close to the hydrant area.

Table 6. List of mammal species recorded by WWF in the area (WWF 2019).

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION IN HK	CONSERVATION STATUS
Musk Shrew	*Suncus murinus*	Fairly widely distributed in countryside areas throughout Hong Kong.	(LC)
Leschenault's Rousette	*Rousettus leschenaulti*	Fairly widely distributed in countryside areas throughout Hong Kong.	LC, (LC)
Short-nosed Fruit Bat	*Cynopterus sphinx*	Very widely distributed in urban and countryside areas throughout Hong Kong.	Cap. 170, (LC), I
Intermediate Horseshoe Bat	*Rhinolophus affinis*	Widely distributed in countryside areas throughout Hong Kong.	Cap. 170, LC, (LC)
Least Horseshoe Bat	*Rhinolophus pusillus*	Widely distributed in countryside areas throughout Hong Kong.	Cap. 170, PRC, (LC)
Horsfield's Myotis	*Myotis horsfieldii*	Found in Shek Kong, Pak Tam Chung, Fung Yuen, Plover Cove, Pat Sin Leng and Shing Mun Country Parks.	Cap. 170, PRC, (LC)
Chinese Noctule	*Nyctalus plancyi*	Fairly widely distributed in countryside areas throughout Hong Kong.	Cap. 170, PRC, (LC)
Japanese Pipistrelle	*Pipistrellus abramus*	Widely distributed throughout Hong Kong.	Cap. 170, (LC)
Least Pipistrelle	*Pipistrellus tenuis*	Ten-something records found in Nam Chung,	Cap. 170, (LC)

[2] https://www.afcd.gov.hk/english/conservation/hkbiodiversity/database/popup_record.php?id=3769&lang=en#conservation

[3] https://www.iucnredlist.org

		Sheung Wo Hang, Lin Ma Hang, Plover Cove Country Park, Yuen Long, Shek Pik, Deep Water Bay, Ho Pui and Ho Chung.	
Chinese Pipistrelle	*Hypsugo pulveratus*	Only several records in the countryside areas at Ting Kau, Ma On Shan and Lin Ma Hang, and several records of stray individuals inside buildings.	Cap. 170, LC, (LC)
Lesser Bamboo Bat	*Tylonycteris pachypus*	Fairly widely distributed in countryside areas throughout Hong Kong.	Cap. 170, LC, (LC)
Lesser Yellow Bat	*Scotophilus kuhlii*	Fairly widely distributed in countryside areas throughout Hong Kong.	Cap. 170, LC, (LC)
Greater Bent-winged Bat	*Miniopterus magnater*	Data deficient.	Cap. 170, PRC, (LC)
Lesser Bent-winged Bat	*Miniopterus pusillus*	Fairly widely distributed in countryside areas throughout Hong Kong.	Cap. 170, PRC, (LC)
Greater Bandicoot Rat	*Bandicota indica*	Found in Mai Po, Pat Sin Leng Country Park and on Lantau.	LC, (LC)
Chestnut Spiny Rat	*Niviventer fulvescens*	Widely distributed in countryside areas throughout Hong Kong.	(LC)
Indochinese Forest Rat	*Rattus andamanensis*	Widely distributed in countryside areas throughout Hong Kong.	(LC)
Lesser Rice-field Rat	*Rattus losea*	Recorded in Mai Po area.	(LC)
Ryukyu Mouse	*Mus caroli*	Found only in Mai Po and Hong Kong Wetland Park.	(LC)
East Asian Porcupine	*Hystrix brachyura*	Very widely distributed in countryside areas throughout Hong Kong, except for Lantau Island.	PGC, (LC)
Eurasian Otter	*Lutra lutra*	Restricted to Mai Po, Hoo Hok Wai, and nearby areas.	Cap.586, Cap.170, RC, (NT), VU
Small Indian Civet	*Viverricula indica*	Very widely distributed in countryside areas throughout Hong Kong, except for Lantau Island.	Cap. 170, (LC)
Small Asian Mongoose	*Herpestes javanicus*	Fairly widely distributed in countryside areas in the New Territories.	Cap. 170, (LC)
Leopard Cat	*Prionailurus bengalensis*	Widely distributed in countryside areas throughout Hong Kong, except for Lantau Island.	Cap.586, Cap.170, (LC), VU
Wild Boar	*Sus scrofa*	Very widely distributed in countryside areas throughout Hong Kong.	(LC)
Introduced species:			
Rhesus Macaque	*Macaca mulatta*	Mainly distributed in Kam Shan, Shing Mun and Tai Po Kau; also found in Ma On Shan, Sai Kung, Tai Lam Country Parks and the North District.	Cap.586, Cap.170, (LC), VU
Brown Rat	*Rattus norvegicus*	Widely distributed in urban areas associated with human activity.	(LC)
Roof Rat	*Rattus rattus*	Widely distributed in urban areas associated with	(LC)

		human activity.	
Asian House Rat	*Rattus tanezumi*	Fairly widely distributed in countryside areas throughout Hong Kong.	(LC)
House Mouse	*Mus musculus*	Widely distributed in urban areas associated with human activity.	(LC)
Domestic Dog	*Canis lupus familiaris*	Widely distributed in urban and countryside areas throughout Hong Kong.	N/A
Domestic Cat	*Felis catus*	Widely distributed in urban and countryside areas throughout Hong Kong.	N/A
Domestic Water Buffalo	*Bubalus bubalis*	Found in Kam Tin, and the southern part of Lantau Island.	N/A

Key:

-Cap. 586: Species under protection of Endangered Species of Animals and Plants Ordinance (Cap. 586)

-Cap. 170: Species under protection of Wild Animals Protection Ordinance (Cap. 170)

-Fellowes et al. (2002): RC=Regional Concern; LC=Local Concern; PRC=Potential Regional Concern; PGC= Potential Global Concern

-IUCN Red List of Threatened Species Status: (LC)=Least Concern; (NT)= Near Threatened

-China Red Data Book Status: I= Indeterminate; VU= Vulnerable

2.6. Birds

2.6.1. Mai Po is noted for harbouring tens of thousands of migratory waterbirds that use the wetlands from November to March, and other passerines that use reedbeds, shrublands, and wooded habitats. Several of these species are highly threatened and endangered and are more intolerant of disturbance. Therefore, construction work will take place during the summer non-migratory season, so that the migratory birds will not be impacted. Construction work during wintering season will be avoided as a mitigation measure.

Instead, in summer only the non-migratory birds are considered. The one exception is the Indian Cuckoo (Cuculus micropterus), which is a summer visitor.

2.6.2. The surveys have encompassed a 500 m buffer area that includes most of the Mai Po Nature Reserve. Birds travel over relatively large areas that transcend the proposed project area and many of the birds that have been recorded from the study area of a 500 m buffer from PSFSC can be expected to occur along the hydrant and pipeline project area. However, it is important to note that many of these birds would be associated with wetlands, including fishponds. The birds that habitually use these fishponds would already be habituated to disturbance and human activity associated with fishpond management, vehicular traffic along the road, including noise from heavy vehicles along Castle Peak Road.

Overall, 50 resident bird species (including the summer migrant) have been recorded from the project area (**Table 7**). All species are common, abundant, and widespread in Hong Kong and the

Mai Po area. Most are found in degraded habitats that are subjected to anthropogenic disturbances and impacts, and forage, live, and even nest close to buildings and other human-use areas. For example, during the early surveys there was a pair of White-shouldered Starlings nesting on the electricity supply pylon outside the PSFSC site boundary and an egret roost in the trees next to the PSFSC forecourt. During April 2019, about 74-84 Little Egrets, 25 to 33 Chinese Pond Herons, 6 Great Egrets and 1 Cattle Egret were observed recorded flying to a night roost in the trees adjacent to the PSFSC forecourt. Since the project will be carried out during the summer (non-migratory season), the winter migrant data are irrelevant here.

There is an egretry at the intersection of the Castle Peak Road and Tam Kon Chau Road (please refer to Figure 3a for the location). Both roads are used by heavy vehicles, and the egretry is also surrounded by busy human habitation, including stone-based construction premises. Therefore it is highly unlikely that any additional noise and activity from the excavation work for the hydrant will cause further disturbance to the egrets.

2.6.3. Overall, 50 resident bird species (including the summer migrant) have been recorded from the project area (Table 7). All species are common, abundant, and widespread in Hong Kong and the Mai Po area. Most are found in degraded habitats that are subjected to anthropogenic disturbances and impacts, and forage, live, and even nest close to buildings and other human-use areas. For example, during the early surveys there was a pair of White-shouldered Starlings nesting on the electricity supply pylon outside the PSFSC site boundary and an egret roost in the trees next to the PSFSC forecourt. During April 2019, about 74-84 Little Egrets, 25 to 33 Chinese Pond Herons, 6 Great Egrets and 1 Cattle Egret were observed recorded flying to a night roost in the trees adjacent to the PSFSC forecourt.

Since the project will be carried out during the summer (non-migratory season), the winter migrant data is irrelevant here.

Nevertheless, in view of the fact that there is an active egretry within the pipeline alignment in the "Village Type Development" zone ("V")/ near the road junction at Tam Kon Chau Road/ Castle Peak Road- Mai Po Section, no work will be carried out from April 2022 to June 2022 at this location. Should the young egrets leave the nest in July/August, construction works can only be carried out until then.

Close monitoring will be carried out by the applicant, and agreement from AFCD will be sought on applicant's observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the above-mentioned egretry.

Table 7. List of non-migratory bird species recorded from the project area

COMMON NAME	SCIENTIFIC NAME	WETLAND DEPENDENT?	DISTRIBUTION IN HK	CONSERVATION STATUS
Besra	*Accipiter virgatus*	N	Common resident and migrant in shrubland and wooded areas	Cap.586, Cap.170, (LC)
Sooty-headed Bulbul	*Pycnonotus aurigaster*	N	Common resident in open country habitats away from urban and marshy areas	Cap.170, (LC)
Red-whiskered	*Pycnonotus*	N	Abundant resident in most habitats except	Cap.170, (LC)

Bulbul	*jocosus*		woodland interior	
Chinese Bulbul	*Pycnonotus sinensis*	N	Abundant all year, with migrants and winter visitors occurring, present in nearly all habitats, the most abundant and widespread species in HK	Cap.170, (LC)
Greater Coucal	*Centropus sinensis*	N	Widespread and common resident in lowland shrubland areas	Cap.170, (LC), VU
Large-billed Crow	*Corvus macrorhynchos*	N	Common resident of open rural and wooded urban-edge habitats	Cap.170, (LC)
Collared Crow	*Corvus torquatus*	Y	Locally common resident, mainly in coastal areas	Cap.170, LC, (NT)
Indian Cuckoo	*Cuculus micropterus*	N	Locally common spring and summer visitor to open woodland habitats	Cap.170, (LC)
Large Hawk-cuckoo	*Hierococcyx sparverioides*	N	Locally common spring and summer visitor to closed-canopy shrubland and woodland	Cap.170, (LC)
Spotted Dove	*Spilopelia chinensis*	N	Abundant resident in diverse habitats in urban and rural areas	Cap.170, (LC)
Eurasian Collared Dove	*Streptopelia decaocto*	N	Locally common breeding resident in northwest NT	Cap.170, (LC)
Great Egret	*Ardea alba*	Y	Abundant, present all year in wetlands, mainly in the Deep Bay area	Cap.170, PRC, (LC)
Intermediate Egret	*Egretta intermedia*	Y	Uncommon, present all year, though rather few in summer, mainly in freshwater wetlands in the Deep Bay area	Cap.170, RC, (LC)
Eastern Cattle Egret	*Bubulcus coromandus*	Y	Common in widespread freshwater wetlands and short grassland areas, with winter, migrant and breeding populations	Cap.170, LC, (LC)
Little Egret	*Egretta garzetta*	Y	Abundant, present all year in wetland areas throughout HK, mostly in the Deep Bay area	Cap.170, PRC, (LC)
Swinhoe's White-eye	*Zosterops simplex*	N	Abundant and widespread resident of urban and rural wooded habitats with increased numbers in winter	Cap.170, (LC)
Asian Brown Flycatcher	*Muscicapa dauurica*	N	Common autumn passage migrant and winter visitor to open and closed-canopy woodland areas	Cap.170, (LC)
Little Grebe	*Tachybaptus ruficollis*	Y	Common all year with higher numbers in winter, on ponds and pools primarily in Deep Bay wetland areas	Cap.170, LC, (LC)
Grey Heron	*Ardea cinerea*	Y	Common in wetlands and some coastal areas, mainly in the Deep Bay area, present all year with highest numbers in winter and very low numbers in summer	Cap.170, PRC, (LC)
Purple Heron	*Ardea purpurea*	Y	Uncommon and present all year in the Deep	Cap.170, RC, (LC)

			Bay area with peak numbers during migration, 8 counts in 2016	
Chinese Pond Heron	*Ardeola bacchus*	Y	Common in wetlands and damp areas, with winter, migrant and breeding populations	Cap.170, PRC, (LC)
Striated Heron	*Butorides striata*	Y	Locally common summer visitor to the Deep Bay area but more widespread on migration and in winter at scattered coastal and inland sites	Cap.170, LC, (LC)
Black-crowned Night Heron	*Nycticorax nycticorax*	Y	Common resident and migrant mainly in Deep Bay wetlands and at scattered breeding colonies, mostly around Starling Inlet and Tolo Harbour	Cap.170, LC, (LC)
Common Kingfisher	*Alcedo atthis*	Y	Common and present all year in wetland areas	Cap.170, (LC)
Pied Kingfisher	*Ceryle rudis*	Y	Common resident in fishpond and other wetland areas, especially Deep Bay	Cap.170, (LC)
White-throated Kingfisher	*Halcyon smyrnensis*	Y	Common and present all year, mostly in wetland areas	Cap.170, LC, (LC)
Black-winged Kite	*Elanus caeruleus*	N	Uncommon visitor to open country throughout the year	Cap.586, Cap.170, LC, (LC), VU
Black Kite	*Milvus migrans*	N	Abundant, present all year and widespread, with increased numbers in winter between October and March	Cap.586, Cap.170, RC, (LC)
Asian Koel	*Eudynamys scolopaceus*	N	Common and widespread, recorded in all months though less frequently in winter, from urban and rural areas with trees	Cap.170, (LC)
Masked Laughingthrush	*Garrulax perspicillatus*	N	Abundant resident in diverse urban and rural lightly-wooded habitats	Cap.170, (LC)
Azure-winged Magpie	*Cyanopica cyanus*	N	Locally common breeding resident since 2003	Cap.170, (LC)
Oriental Magpie	*Pica serica*	N	Common resident of open country and urban edge habitats	Cap.170, (LC)
Red-billed Blue Magpie	*Urocissa erythrorynchа*	N	Common resident of closed-canopy shrubland	Cap.170, (LC)
Scaly-breasted Munia	*Lonchura punctulata*	N	Abundant resident in open-country grassy habitats	Cap.170, (LC)
Crested Myna	*Acridotheres cristatellus*	N	Abundant resident of lowland habitats including urban areas	Cap.170, (LC)
Common Myna	*Acridotheres tristis*	N	Locally common resident of open-country areas in the northwest and central NT	Cap.170, (LC)
Collared Scops Owl	*Otus lettia*	N	Common and widespread resident in lowland areas of closed-canopy shrubland and woodland	Cap.586, Cap.170, (LC)

Asian Barred Owlet	*Glaucidium cuculoides*	N	Common though locally-distributed resident with most records from forest and open-country areas in the north and central NT	Cap.586, Cap.170, (LC)
Little Ringed Plover	*Charadrius dubius*	Y	Common and present all year in lowland areas near water, scarce breeder	Cap.170, LC, (LC)
Yellow-bellied Prinia	*Prinia flaviventris*	N	Abundant resident in a variety of non-woodland habitats	Cap.170, (LC)
Plain Prinia	*Prinia inornata*	N	Locally common resident in grassy and reed habitats	Cap.170, (LC)
Oriental Magpie Robin	*Copsychus saularis*	N	Abundant resident in urban and rural areas, including mangrove	Cap.170, (LC)
Common Sandpiper	*Actitis hypoleucos*	Y	Common and widespread in wetlands, present all year though few in summer	Cap.170, (LC)
Long-tailed Shrike	*Lanius schach*	N	Common resident in open country habitats	Cap.170, (LC)
Greater Painted-snipe	*Rostratula benghalensis*	Y	Locally common resident breeding species, in freshwater marsh and wet agricultural areas, 15 recorded this year	Cap.170, LC, (LC)
Black-collared Starling	*Gracupica nigricollis*	N	Common resident of open-country, village edge and urban habitats	Cap.170, (LC)
Common Tailorbird	*Orthotomus sutorius*	N	Widespread and common resident in diverse shrubland and wooded habitats	Cap.170, (LC)
Cinereous Tit	*Parus cinereus*	N	Common resident in open and closed-canopy woodland, shrubland and parkland areas	Cap.170, (LC)
White Wagtail	*Motacilla alba*	N	A widespread species although most records and high counts from northwest NT	Cap.170, (LC)
White-breasted Waterhen	*Amaurornis phoenicurus*	Y	Common resident in low-lying, damp areas throughout Hong Kong, probably also with some migrants.	Cap.170, (LC)

Key:

-Cap. 586: Species under protection of Endangered Species of Animals and Plants Ordinance (Cap. 586)

-Cap. 170: Species under protection of Wild Animals Protection Ordinance (Cap. 170)

-Fellowes et al. (2002): RC=Regional Concern; LC=Local Concern; PRC=Potential Regional Concern;

-IUCN Red List of Threatened Species Status: (LC)=Least Concern; (NT)= Near Threatened

-China Red Data Book Status: VU= Vulnerable

2.7. Reptiles

2.7.1. Four reptile species of were recorded in the project area (**Table 8**), Bowring's Gecko, Changeable Lizard, Long-tailed Skink, and Indo-Chinese rat snake (**Figure 3a**). Many other

species of reptiles have been recorded from the Mai Po Nature Reserve, and several of these species could occur in the immediate and proximate project area since most species are widely distributed in Hong Kong and are found in degraded habitats, such as in the project area. This is especially true for the snakes that follow small rodent prey, which occur at higher densities close to human habitation. Although the vibrations associated with the excavation could affect the reptiles, it is likely that they will move away from the immediate vicinity during the construction period but will return when the work is completed.

Table 8. List of reptiles expected to occur in the study area. List is derived from the Mai Po Nature Reserve management plan, 2019-2024. The species listed in bold text were recorded from the project area during the surveys.

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION IN HK	CONSERVATION STATUS
Bowring's Gecko	***Hemidactylus bowringii***	Widely distributed throughout Hong Kong.	(LC)
Changeable Lizard	***Calotes versicolor***	Widely distributed throughout Hong Kong.	N/A
Grass Lizard	*Takydromus sexlineatus*	Widely distributed throughout Hong Kong.	(LC)
Chinese Skink	*Plestiodon chinensis*	Widely distributed throughout Hong Kong.	(LC)
Long-tailed Skink	***Eutropis longicaudata***	Widely distributed throughout Hong Kong.	(LC)
Reeve's Smooth skink	*Scincella reevesii*	Widely distributed in woodlands throughout Hong Kong.	N/A
Banded Krait	*Bungarus fasciatus*	Locally restricted in Hong Kong.	RC, (LC), EN
Burmese python	*Python bivittatus*	Widely distributed throughout Hong Kong.	Cap.586, Cap.170, PRC, (VU), CE
Checkered Keelback	*Xenochrophis flavipunctatus*	Widely distributed in the New Territories and Lantau Island.	(LC)
Chinese Cobra	*Naja atra*	Common and widely distributed in Hong Kong.	Cap.586, PRC, (VU), VU
Chinese Water Snake	*Enhydris chinensis*	Locally common, mainly occurs in Deep Bay and central New Territories.	(LC), LC
Common Blind Snake	*Ramphotyphlops braminus*	Widely distributed throughout Hong Kong.	N/A
Common Rat Snake	*Ptyas mucosus*	Widely distributed throughout Hong Kong.	Cap.586, PRC, EN
Copperhead Racer	*Coelognathus radiatus*	Widely distributed throughout Hong Kong.	PRC, (LC), EN
Indo-chinese rat snake	***Ptyas korros***	Widely distributed throughout Hong Kong.	PRC, EN
King Cobra / Hamadryad	*Ophiophagus hannah*	Widely distributed throughout Hong Kong.	Cap.586, PRC, (VU), CE
Mangrove Water Snake	*Enhydris bennettii*	Restricted in distribution in Hong Kong.	LC

Many-banded Krait	*Bungarus multicinctus*	Widely distributed throughout Hong Kong.	PRC, (LC), VU
Taiwan Kukri Snake	*Oligodon formosanus*	Widely distributed throughout Hong Kong.	(LC)
Chinese Soft-shelled Turtle	*Pelodiscus sinensis*	Locally found in reservoirs and fishponds in Deep Bay area.	Cap.170, GC, (VU), VU
Malaysian Box Turtle	*Cuora amboinensis*	Introduced to Hong Kong	Cap.586, (VU)
Red-eared Slider	*Trachemys scripta*	Introduced to Hong Kong	Cap.170, (LC)
Reeve's Turtle	*Mauremys reevesii*	Widespread in the territory. Used to be a common but sightings have been rare.	Cap.586, Cap.170, GC, (EN), CD

Key:

-Cap. 586: Species under protection of Endangered Species of Animals and Plants Ordinance (Cap. 586)

-Cap. 170: Species under protection of Wild Animals Protection Ordinance (Cap. 170)

-Fellowes et al. (2002): RC=Regional Concern; LC=Local Concern; PRC=Potential Regional Concern; GC=Global Concern

-IUCN Red List of Threatened Species Status: (LC)=Least Concern; (NT)= Near Threatened

-China Red Data Book Status: CD= Conservation Dependent; VU=Vulnerable; EN=Endangered; CE= Critically Endangered

2.8. Amphibians

2.8.1. Five amphibian species (four frogs and one toad) were recorded in the Study Area (**Table 9**). Three other frog species have been recorded from Mai Po Nature Reserve (**Table 9**) and can be expected to occur in the project area. All species are common, widespread, and are of Least Concern. Although three records of the Asian Common Toad and one of Günther's Frog have been recorded from 'Developed Areas' all other records are from the wetlands. It is highly unlikely that the project excavation limited to the paved, developed area will affect the amphibian populations. It is highly unlikely that the project excavation limited to the paved, developed area will affect the amphibian populations.

Table 9. List of amphibians expected to occur in the study area. List is derived from the Mai Po Nature Reserve management plan, 2019-2024. The species listed in bold text were recorded from the project area during the surveys.

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION IN HK	CONSERVATION STATUS
Asian Common Toad	***Duttaphrynus melanostictus***	Widely distributed in Hong Kong.	(LC)
Asiatic Painted Frog	***Kaloula pulchra***	Widely distributed in Hong Kong.	(LC)
Günther's Frog	***Hylarana guentheri***	Widely distributed in Hong Kong.	(LC)
Ornate Pigmy Frog	***Microhyla fissipes***	Widely distributed in Hong Kong.	(LC)
Paddy Frog	***Fejervarya limnocharis***	Widely distributed in Hong Kong.	(LC)
Spotted	*Kalophrynus*	Widely distributed from low to moderate	(LC)

Narrow-mouthed Frog	*interlineatus*	altitudes in northern and central New Territories.	
Brown Tree Frog	*Polypedates megacephalus*	Widely distributed in Hong Kong.	(LC)
Chinese Bullfrog	*Hoplobatrachus rugulosus*	Widely distributed in Lantau Island and New Territories.	PRC, (LC)

Key:

-Fellowes et al. (2002): PRC=Potential Regional Concern

-IUCN Red List of Threatened Species Status: (LC)=Least Concern

2.9. Butterflies

2.9.1. A total of 57 species of butterflies (including a complex of small blues that are difficult to identify to species) were recorded from the EEA Study Area (Table 10). Most are common in Hong Kong and widespread across the Territory (AFCD 2017). None are of particular conservation importance, except for two species; Forget-me-not (Catochrysops strabo), which are considered Very Rare in Hong Kong and listed as Species of Conservation Concern (AFCD 2017), and Small Cabbage White (Pieris rapa) which is considered to be Rare. These species were in the wooded area near the G/IC site (Figure 3a). Since the excavation will not remove or impact any vegetation in the wooded area, the works will have no impact on these butterflies.

Table 10. Butterfly species recorded from the study area, and their status in Hong Kong. Information from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.
Conservation Status based on AFCD database.https://www.afcd.gov.hk/english/conservation/hkbiodiversity/database

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION IN HK	RARITY	CONSERVATION STATUS
Angled Castor	*Ariadne*	Widely distributed throughout Hong Kong	Common	N/A
Blue Tiger	*Tirumala limniace*	Widely distributed throughout Hong Kong	Common	N/A
Blue-spotted Crow	*Euploea midamus*	Widely distributed throughout Hong Kong	Very Common	N/A
Bush Hopper	*Ampittia dioscorides*	Widely distributed in abandoned paddy field throughout Hong Kong	Uncommon	N/A
Chestnut Angle	*Odontoptilum angulatum*	Widely distributed in shrubland and woodland throughout Hong Kong	Common	N/A
Chinese Dart	*Potanthus confucius*	Widely distributed in grassland throughout Hong Kong	Uncommon	N/A
Chinese Peacock	*Papilio bianor*	Widely distributed throughout Hong Kong	Common	N/A
Common Bluebottle	*Graphium sarpedon*	Widely distributed throughout Hong Kong	Very Common	N/A
Common Five-ring	*Ypthima baldus*	Widely distributed in grassland throughout Hong Kong	Very Common	N/A
Common Grass Yellow	*Eurema hecabe*	Widely distributed throughout Hong Kong	Common	N/A
Common Hedge Blue	*Acytolepis puspa*	Widely distributed throughout Hong Kong	Common	N/A
Common Indian Crow	*Euploea core*	Widely distributed throughout Hong Kong	Common	(LC)
Common Jay	*Graphium doson*	Widely distributed throughout Hong Kong	Common	N/A
Common Mapwing	*Cyrestis thyodamas*	Widely distributed in woodland area throughout Hong Kong	Common	N/A
Common Mime	*Chilasa clytia*	Widely distributed throughout Hong Kong	Common	N/A
Common Mormon	*Papilio polytes*	Widely distributed throughout Hong Kong	Very Common	N/A
Common Palmfly	*Elymnias hypermnestra*	Widely distributed in coast and urban parks throughout Hong Kong	Common	N/A
Common Sailer	*Neptis hylas*	Widely distributed throughout Hong Kong	Very Common	N/A
Common Sergeant	*Athyma perius*	Widely distributed throughout Hong Kong	Uncommon	N/A
Common Tiger	*Danaus genutia*	Widely distributed throughout Hong Kong	Common	N/A
Dark-brand Bush Brown	*Mycalesis mineus*	Widely distributed in woodland throughout Hong Kong	Very Common	N/A
Five-dot Sergeant	*Parathyma sulpitia*	Widely distributed in woodland area throughout Hong Kong	Common	N/A
Forget-me-not	***Catochrysops strabo***	**Pui O, Tai Po Kau, Fung Yuen, Shing Mun, Sha Lo Wan**	**Very Rare**	N/A
Formosan Swift	*Borbo cinnara*	Widely distributed in open grassland and abandoned field throughout Hong Kong	Common	N/A
Glassy Tiger	*Parantica aglea*	Widely distributed throughout Hong Kong	Common	N/A
Great Egg-fly	*Hypolimnas bolina*	Widely distributed throughout Hong Kong	Common	N/A
Great Mormon	*Papilio memnon*	Widely distributed throughout Hong Kong	Very Common	N/A
Great Orange Tip	*Hebomoia glaucippe*	Widely distributed throughout Hong Kong	Common	N/A

Greenish Palm Dart	*Telicota ancilla*	Widely distributed in grassland and shrubland throughout Hong Kong	Uncommon	N/A
Grey Pansy	*Junonia atlites*	Widely distributed in abandoned grassland and abandoned agricultural field throughout Hong Kong	Common	N/A
Indian Cabbage White	*Pieris canidia*	Widely distributed throughout Hong Kong	Very Common	N/A
Large Faun	*Faunis eumeus*	Widely distributed in woodland throughout Hong Kong	Common	N/A
Lemon Emigrant	*Catopsilia pomona*	Widely distributed throughout Hong Kong	Common	N/A
Lime Butterfly	*Papilio demoleus*	Widely distributed throughout Hong Kong	Common	N/A
Long-tailed Blue	*Lampides boeticus*	Widely distributed in abandoned field throughout Hong Kong	Common	N/A
Mottled Emigrant	*Catopsilia pyranthe*	Widely distributed throughout Hong Kong	Very Common	N/A
Pale Grass Blue	*Pseudozizeeria maha*	Widely distributed throughout Hong Kong	Very Common	N/A
Paris Peacock	*Papilio paris*	Widely distributed throughout Hong Kong	Very Common	N/A
Plain Tiger	*Danaus chrysippus*	Lung Kwu Tan, Tong Fuk, Tai Ho, Tung Chung, Pak Tam Chung	Uncommon	N/A
Plum Judy	*Abisara echerius*	Widely distributed throughout Hong Kong	Very Common	N/A
Purple Sapphire	*Heliophorus epicles*	Widely distributed throughout Hong Kong	Common	N/A
Red Helen	*Papilio helenus*	Widely distributed throughout Hong Kong	Very Common	N/A
Red-base Jezebel	*Delias pasithoe*	Widely distributed throughout Hong Kong	Very Common	N/A
Red-ring Skirt	*Hestina assimilis*	Widely distributed in woodland throughout Hong Kong	Common	N/A
Rustic	*Cupha erymanthis*	Widely distributed throughout Hong Kong	Very Common	N/A
Short-banded Sailer	*Phaedyma columella*	Widely distributed in woodland area throughout Hong Kong	Common	N/A
Silver Streak Blue	*Iraota timoleon*	Common and widespread throughout Hong Kong	Uncommon	N/A
Small Blues	*N/A*	N/A	N/A	N/A
Small Cabbage White	*Pieris rapa*	**Shep Mun Kap, Fan Lau, Ngong Ping, Kam Tin, Ho Chung, Luk Keng, Tuen Mun Ash Lagoon**	**Rare**	N/A
South China Bush Brown	*Mycalesis zonata*	Widely distributed in woodland throughout Hong Kong	Common	N/A
Spangle	*Papilio protenor*	Widely distributed throughout Hong Kong	Very Common	N/A
Straight Five-ring	*Ypthima lisandra*	Widely distributed throughout Hong Kong.	Common	N/A
Tailed Cupid	*Everes lacturnus*	Widely distributed throughout Hong Kong	Common	N/A
Tailed Jay	*Graphium agamemnon*	Widely distributed throughout Hong Kong	Common	N/A
Tawny Rajah	*Charaxes bernardus*	Widely distributed throughout Hong Kong	Common	N/A
Three-spot Grass Yellow	*Eurema blanda*	Widely distributed throughout Hong Kong	Common	N/A
Transparent 6-line Blue	*Nacaduba kurava*	Widely distributed throughout Hong Kong	Common	N/A

Key:
-IUCN Red List of Threatened Species Status: (LC)=Least Concern

2.10. Dragonflies

2.10.1. A total of 7 dragonfly species were recorded from the commercial fishponds and gei wai in the EEA study area (**Table 11**). All of the recorded species are either abundant or common in Hong Kong (AFCD 2017). None are of particular conservation importance, except for Scarlet Basker (*Urothemis signata signata*), which was considered to be of Local Concern but was recorded outside the project area.

Table 11. Dragonflies recorded from the EEA.

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION IN HK	RARITY	CONSERVATION STATUS
Asian Amberwing	*Brachythemis contaminata*	Widely distribute in weedy ponds and sluggish streams	Abundant	(LC)
Crimson Darter	*Crocothemis servilia*	Widely distribute in cultivated areas, ponds and marshes throughout the New Territories	Abundant	(LC)
Common Flangetail	*Ictinogomphus pertinax*	Widely distribute in ponds throughout Hong Kong	Common	(LC)
Green Skimmer	*Orthetrum sabina*	Widely distribute in all wetland habitats throughout Hong Kong	Abundant	(LC)
Wandering Glider	*Pantala flavescens*	Widely distribute in all wetland habitats throughout Hong Kong	Abundant	(LC)
Variegated Flutterer	*Rhyothemis variegata*	Widely distribute in marshes, ponds and tanks throughout Hong Kong	Common	(LC)
Scarlet Basker	*Urothemis signata*	Common in areas containing abandoned fish ponds throughout Hong Kong	Common	LC, (LC)

Key:

-Fellowes et al. (2002): LC=Local Concern

-IUCN Red List of Threatened Species Status: (LC)=Least Concern

2.11. Fishes

2.11.1. Fish surveys are limited. The species recorded (**Table 12**) suggests that the surveys were conducted in the streams and brackish water *gei wai*, rather than the freshwater commercial fishponds. The freshwater ponds immediately adjacent to the proposed excavation (**Figure 2a**) are used for commercial fisheries. However, since there is a small extent of marsh and stream mid-way along the water supply pipeline (**Figure 2a**). And care should still be taken to ensure there are no impact from soil, oil, and other pollutants from spilling or being washed into this habitat.

Table 12. Fishes recorded from wetlands in the Mai Po Brackish Marsh/ Waterway area			
COMMON NAME	**SCIENTIFIC NAME**	**DISTRIBUTION IN HK**	**CONSERVATION STATUS**
Mud Sleeper	*Butis koilomatodon*	Recorded in estuary of Lantau.	N/A
N/A	*Wuhanlinigobius polylepis*	N/A	N/A
Speckled Goby	*Redigobius bikolanus*	N/A	(LC)
N/A	*Gobiopterus macrolepis*	N/A	EN
N/A	*Elops sp.*	N/A	N/A
N/A	*Pseudogobius taijiangensis*	N/A	N/A
Javanese Fatnose Goby	*Pseudogobius javanicus*	A widespread species occurring in estuaries and coastal waters of Hong Kong.	N/A
Yellowstripe Goby	*Mugilogobius chulae*	Records from coastal environmental throughout Hong Kong.	(LC)
Four-eyeed Sleeper	*Bostrychus sinensis*	Records from a few streams in Sai Kung and on Lantau Island.	(LC)

Key:

-IUCN Red List of Threatened Species Status: (LC)=Least Concern

-China Species Red List: EN= Endangered

3. Potential environmental Impact

3.1.1. Potential environmental impacts from the construction may include noise, air, and water pollution. The Environmental and Ecological Assessment (SMEC 2019) has assessed these impacts and proposed appropriate mitigations.

3.2. Noise

3.2.1. The model for noise monitoring and mitigation conducted under the Environmental and Ecological Assessment (SMEC 2019) shows that the noise levels from construction can attenuate from the 86 dB in the core of the construction site to about 75 dB(A) within 120 m in the northern sections of the study area even under unmitigated conditions (**Figure 4a**). This analysis was based on noise emissions from heavy machinery, whereas the excavation for the pipe can be done by lighter, QPME (Quality Powered Mechanical Equipment) excavators, which are notably quieter.

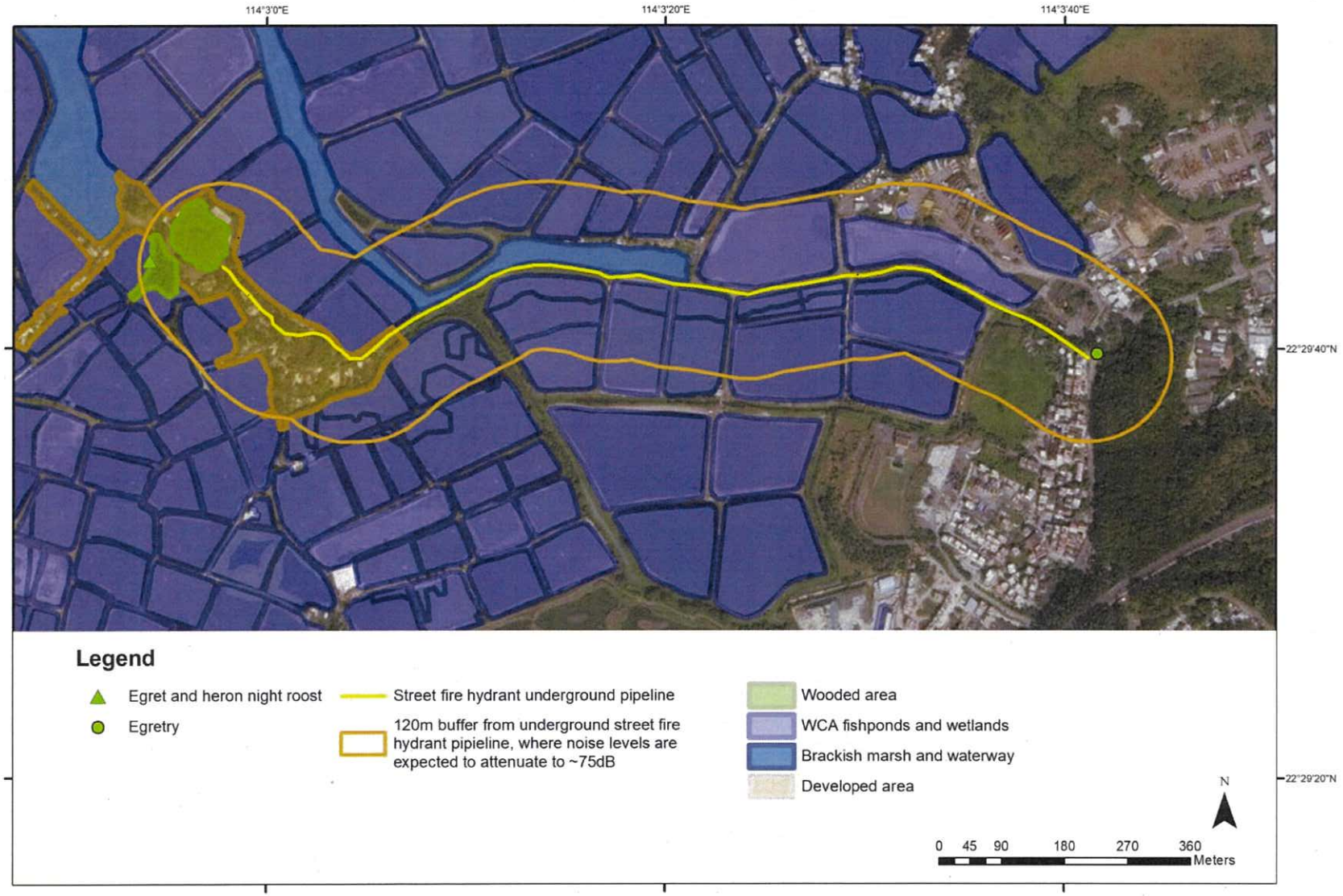
3.2.2. Detailed modeling of noise levels from the construction at the PSFSC shows that levels will become attenuated to below allowable levels within 100 m, and are unlikely to cause significant ecological impacts to the gei wai (SMEC 2019). The commercial fishponds and wooded area immediately adjacent to the construction and excavation of proposed pipeline will encounter some noise levels

during the day when construction activity happens, but these areas are already impacted by noise from anthropogenic activity, including vehicular traffic (SMEC 2019), and the fauna will already be habituated. Noise reaching into the brackish marshes and natural watercourses will become attenuated because of the trees and other dense vegetation.

Proposed mitigation measures such as the use of QPME, the limited extent of the works, the restriction of works hours, etc., will be adopted during construction to mitigate potential impacts to the habitat near the commercial fishponds/waterway along the proposed underground water pipe. In the event of heavy rains or a typhoon, adequate precautions will be carried out to prevent piled soil from washing into the watercourses and to ensure that no additional pollution loading into the Deep Bay Area. The proposed works site inside or in the proximity of nearby habitats should be temporarily isolated, such as by placing of sandbags. In addition, excavated material should be covered up by tarpaulin to avoid being washed into nearby habitats by rain. In addition, the applicant will closely monitor the construction work to ensure that no adverse impact will be caused to the nearby habitats.

3.2.3. Thus, it is highly unlikely that noise from the construction and excavation will impact the wildlife in the project area.

Figure 4a: Proposed street fire hydrant underground pipeline's 120m-buffer for attenuation of noise level to 75dB(A)



3.3. Air Pollution

3.3.1. Mitigation measures to ensure air quality is maintained during the PSFSC rebuild according to acceptable and permissible levels will also be applied to the construction of the FS pipeline along Tam Kon Chau Road.

3.3.2. The assessment of air quality during demolition and rebuild of PSFSC showed generally low concentrations of RSP and FSP off-site during the works, making it unlikely to cause any ecological impacts from dust. Such dust emissions from the excavations will be expected to be less than from the demolition of the building, which has now been completed.

3.3.3. Good practice and mitigation measures to be implemented during the demolition and construction stages of the PSFSC are relevant to this FS pipeline excavation project, and include the following (SMEC 2019):

- Regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.
- Frequent watering for particularly dusty areas and areas close to ASRs.
- Open stockpiles shall be avoided or covered.
- Tarpaulin covering of all dusty vehicle loads transported to and from the Site.

3.4. Water pollution

3.4.1. Water quality impacts from the construction site could arise from the following (SMEC 2019):

- General construction activities.
- Construction site runoff.
- Construction works near waterbodies.
- Runoff and erosion of exposed bare soil and earth, drainage channel, earth working area and stockpiles.
- Accidental spillage.
- Sewage effluent from construction workforce.

4. Mitigation Measures

4.1. Avoidance

4.1.1. All proposed works are based on the WSD's and FSD's technical specifications. To minimize the impact to the ecology and the environment, and to ensure no disturbance to the wildlife that uses the Conservation Area, the scale and extent of excavation will be kept to the bare minimum.

4.1.2. The proposed construction works, include excavation for the pipe, and back-filling of land, and laying of the proposed underground water pipe. The extent of works area will be carried out along an existing concrete-paved road in Government land. Thus, there will be no loss of wetland area, and no impact on the ecology and function of the wetlands in this part of the Wetland Conservation Area.

4.1.3. The fire hydrant pipeline will be installed underground to avoid any adverse impact to visual quality of the area and landscape.

4.2. Minimisation

4.2.1. The proposed hydrant and underground water supply pipe project is a well-thought out proposal in terms of the design, scale and extent of work, and construction method, to ensure that no adverse impact will be caused to the Wetland Conservation Area (WCA) and its biodiversity.

The proposed underground water pipe associated with the upgrading of a street fire hydrant will be in compliance with the requirements of FSD and WSD, and other relevant statutory requirements to ensure no adverse impact will be caused to the surrounding areas.

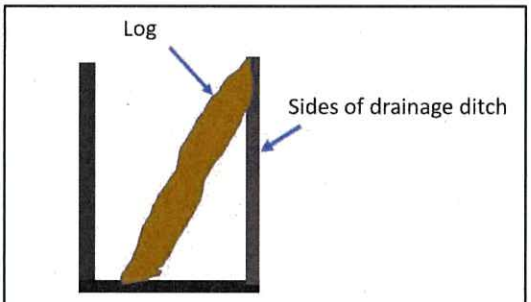
The construction work will be carried out in 4-5 months after obtaining the excavation permit. It will be carried out in 5-6 sections, in which respective excavation work and laying of underground water pipe will be carried out by sections. The construction work will be carried out in summer non-migratory season.

Excavation permit will be obtained from DLO/YL prior to commencement of the excavation works on public roads.

4.2.2. All relevant statutory requirements for the construction and implementation of the proposed hydrant and underground water supply pipe project will be complied with. Implementation of mitigation measures, such as covering open/exposed ground, covered construction C&D material storage areas, and provision of waterproof general waste receptacles etc. will be adopted. In addition, the Works Contractor shall follow good site practice and be responsible for the design construction, operation and maintenance of applicable mitigation measures specified in ProPECC PN 1/94 for construction site drainage during construction. Since location, construction methods and approaches for the proposed use have been carefully considered to prevent/minimize any potential impacts to wildlife and the surrounding environment, no adverse impact on visual quality, drainage, environment and ecology is envisaged.

4.3. Mitigation for Mammals

4.3.1. The contractor can provide a 'ladder-like structure' from the bottom of the excavated ditch to the top so that any animals (especially mammals) that may fall in, or purposefully enter in search of food, can climb out to safely. Hence, a simple structure will be provided, and it will be like a log with bark leaning against the side of the excavation so that animals can use to crawl out, should they fall in. The contractor will check the excavation trench each day, prior to commencing work, to ensure that no mammals, reptiles or amphibians have fallen into it and are unable to get out. If any are present, they should be netted out prior to commencing work. Below please find the indicative diagram showing the "Ladder-like structure" for reference.



Cross section of drainage ditch with log leaned against the side (of the ditch) to form a ramp for animals to climb out. A log with bark intact will allow better grip, allowing animals to climb out more easily.

4.4. Mitigation for Birds

4.4.1. Because the birds that use this area are habituated to human activity, are not highly philopatric or territorial to the small area of excavation along the paved road, no specific mitigation is deemed necessary. According to Mai Po Nature Reserve field staff the birds commonly found in the area are not disturbed by human presence, and birds such as egrets may actually follow the diggers, in search of food that is unearthed. Surveys indicate that even with the noise and activity from construction in the Field Studies Centre many birds—from waterbirds such as Grey herons, egrets, cormorants, and grebes to passerines--are still active with no indication of being disturbed and no mitigation measures are necessary. The works can be scheduled in the day time starting at least one hour after sunrise and end one hour before sunset.

To avoid disturbance to the night roosting ardeid next to PSFSC, construction work will be carried out from 0800 to 1730, which is at least one hour after sunrise and over one hour before sunset in summer non-migratory season.

In view of the fact that there is an active egretry within the pipeline alignment in the "Village Type Development" zone ("V")/ near the road junction at Tam Kon Chau Road/ Castle Peak Road- Mai Po

Section, no work will be carried out from April 2022 to June 2022 at this location. Should the young egrets leave the nest in July/August, construction works can only be carried out until then.

Close monitoring will be carried out by the applicant, and agreement from AFCD will be sought on applicant's observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the above-mentioned egretry.

4.5. Mitigation for Reptiles

4.5.1. The contractor will check the excavation trench each day, prior to commencing work, to ensure that no mammals, reptiles or amphibians have fallen into it and are unable to get out. If any are present, they should be netted out prior to commencing work.

4.6. Mitigation for Amphibians

4.6.1. It is highly unlikely that the project excavation limited to the paved, developed area will affect the amphibian populations. The contractor will check the excavation trench each day, prior to commencing work, to ensure that no mammals, reptiles or amphibians have fallen into it and are unable to get out. If any are present, they should be netted out prior to commencing work.

4.7. Mitigation for Butterflies

4.7.1. Since the excavation will not remove or impact any vegetation in the wooded area, the works will have no impact on these butterflies. Given that there is already relatively heavy noise and human activity along the road, any additional noise and human activity resulting from the excavation is not expected to affect these butterflies. Moreover, although these species are considered rare in Hong Kong, they have extensive global range distributions.

4.8. Mitigation for dragonflies

4.8.1. **Table 6** provides a list of the dragonflies that were recorded from the commercial fishponds immediately around the excavation site for the pipeline, and omits the species that were found in the gei wai. The gei wai are over 150 m at the closest point of excavation work, and this work will not pose any significant levels of disturbance to them. Any noise levels from the excavation project that reach the gei wai should be well within the levels experienced from the heavier machinery that are used to periodically excavate gei wai as part of regularly Mai Po habitat management. Moreover, there will be no conversion of wetland and pond habitat, including of the emergent vegetation along the pond edges or bunds. No deterioration of water quality is expected, especially with measures to prevent soil spillover into the ponds that could affect the nymphs, with appropriate actions (described later) to be taken to control any such eventuality.

4.9. Mitigation for Fish

4.9.1. The only potential impact from the excavation work is excavated soil temporarily piled along the site being washed or falling into the ponds. However, mitigations such as covering the soil piles and removing excess rubble and soil will avoid such impacts. Because the excavation machinery will be QPME excavators, which are considered environmentally safe, there will be little risk from oil and grease pollution.

4.10. Mitigation for Noise

4.10.1. Extrapolating this model to the hydrant and pipeline construction site justifies a 100 m buffer for appropriate noise attenuation. We do acknowledge that much of the habitat along either side of Tam Kon Chau Road is open ground fishponds, and sound can carry further. But these habitats are mostly commercial fishponds that encounter regular disturbance from human activity and vehicle traffic along the road. Extrapolating this model to the pipeline construction site can justify a 100 m radius for appropriate noise attenuation. Therefore, it is reasonable to:

- set the impact zone from noise caused by machinery during excavation and building at 100 m,
- set the direct impact from the presence of people and related activity at 25 m, a reasonable distance based on flight distances of wildlife in the area that is already habituated to human presence (Figure 2a).
- Adoption of other mitigation measures such as the use of QPME, the limited extent of the works, the restriction of works hours, close monitoring the construction work by the applicant to ensure that no adverse impact will be caused to the surrounding habitats.

4.10.2. The proposed underground water pipe associated with the upgrading of a street fire hydrant will be in compliance with the requirements of FSD and WSD, and other relevant statutory requirements to ensure no adverse impact will be caused to the surrounding areas.

The construction work will be carried out in 4-5 months after obtaining the excavation permit. It will be carried out in 5-6 sections, in which respective excavation work and laying of underground water pipe will be carried out by sections. The construction work will be carried out in summer non-migratory season.

Excavation permit will be obtained from DLO/YL prior to commencement of the excavation works on public roads.

4.11. Mitigation for Air

4.11.1. Good practice and mitigation measures to be implemented during the demolition and construction stages of the PSFSC, and relevant to this project, includes the following (SMEC 2019):

- Regular watering , as necessary , to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.
- Frequent watering , as necessary , for particularly dusty areas and areas close to ASRs.
- Open stockpiles shall be avoided or covered.
- Tarpaulin covering of all dusty vehicle loads transported to and from the Site.

4.12. Mitigation for Water

4.12.1. Other types and sources of water pollution from the PSFSC site have also been identified in the Environmental and Ecological Assessment (SMEC 2019). In the event of heavy rains or a typhoon, adequate precautions will be carried out to prevent piled soil from washing into the watercourses and to ensure that no additional pollution loading into the Deep Bay Area. The proposed works site inside or in the proximity of nearby habitats should be temporarily isolated, such as by placing of sandbags. In addition, excavated material should be covered up by tarpaulin to avoid being washed into nearby habitats by rain.

These mitigations will also be applied to the FS pipeline construction to ensure there is no pollution of the fishponds and the natural watercourses. These will include covering the excavated piles to prevent them from dispersing, collapsing, and getting washed into the ponds or the waterway.

4.12.2. The immediate area that can be affected is shown by the 'environmental monitoring area from fire hydrant pipeline construction' demarcated by the red polygon in **Figure 2a.** This area should be monitored each day to ensure that no excavated material is entering them. In the event of heavy rains or a typhoon, adequate precautions should be taken to prevent piled soil does not get washed into the fishponds and watercourses.

5. Summary

- The Peter Scott Field Studies Centre (PSFSC) will be upgraded to a state-of-the art education and training facility to meet the needs of a 21st Century conservation field centre.
- To ensure stringent conformity to environmental safeguards during construction and subsequent operation, an Ecolia has been developed with appropriate mitigations to ensure that any impacts to the environment and ecology of the surrounding areas are minimal.
- The FS pipeline excavation in Tam Kon Chau Road will include upgrading the existing street fire hydrant and the water provisioning pipeline extending from WSD's water main at Castle Peak Road – Mai Po section, along Tam Kon Chau Road to PSFSC (**Figure 2a**) to meet the requirements of the Fire Services Department (FSD) and the Water Supplies Department (WSD).

- The new street fire hydrant will have a water pipe with adequate water pressure and will comply with current FSI Code. The water pipe will be 150mm in diameter, and the proposed alignment is about 1,500m long.
- The excavation area will be 0.6m wide and 1,500m long, and about 1.0m deep. Upon the installation of the proposed facilities, the water pipe will be covered with the original material type.
- The excavation is in Tam Kon Chau road is outside the Mai Po Nature Reserve and in the WCA areas are already impacted by noise from anthropogenic activity, including vehicular traffic (SMEC 2019), and the fauna will already be habituated. Mai Po Reserve is not impacted and remains an important re-fueling stop and a wintering home for hundreds of thousands of migratory waterbirds that use East Asian-Australasian Flyway. It is also a refuge for other non-migratory, wetland-associated biodiversity of Hong Kong.
- To minimize the impact to the ecology and the environment of Mai Po, the construction of the fire hydrant pipeline will follow stringent protocols and mitigations. All construction works will be completed outside the bird migratory season (i.e., until October 2021). If the works cannot be completed in 2021, then the construction work for the portion in "CA" zone will be done in April to June 2022 and the portion in "V" zone will be done between August and October 2022.
- An Environmental and Ecological Assessment prepared in 2019 (SMEC 2019) for the rebuild of the PSFSC included a survey of flora and fauna in this study area.
- Almost all of the species recorded—or expected to occur (based on other surveys from MPNR)—in the project area are common, widespread in Hong Kong, and are habituated to relatively high levels of anthropogenic disturbances.
- Based on knowledge of the ecology and behaviour of the species in the project area, this analysis sets the impact zone from noise and other anthropogenic disturbances caused by the excavation at 100 m; a distance considered adequate based on: a) the existing anthropogenic disturbances; b) ecology and habituation of species, which are all widespread, common, and live close or in human habitation; and c) that none of the faunal species in the major habitats are either territorial or highly philopatric to that small area of impact.
- The ponds adjacent to the project area and marsh/natural water courses are identified as an area of potential direct impact from pollution by soil and rubble that could spillover or get washed into them.
- Because the excavation will be along a paved area, there will be no impact on vegetation and floral species.

However, the following practices are suggested during construction:

- Contractor shall follow good site practice and be responsible for the design construction, operation and maintenance of applicable mitigation measures specified in ProPECC PN 1/94 for construction site drainage during construction.
- Good site practice in line with EPD's requirements will be implemented during construction.
- The recommended use of QPME excavators can minimize the noise levels.

- Provide a 'ladder-like structure' from the bottom of the section of excavated ditch to the top so that any animals (especially mammals) that may fall in, or purposefully enter in search of food, can climb out to safety.
- Check the excavation trench each day, prior to commencing work, to ensure that no reptiles or amphibians have fallen into it and are unable to get out. If any are present, they should be netted out prior to commencing work.
- Ensure that all soil from the excavation piled along the construction site is covered to prevent being washed away or falling into the ponds, especially during rains.

6. References

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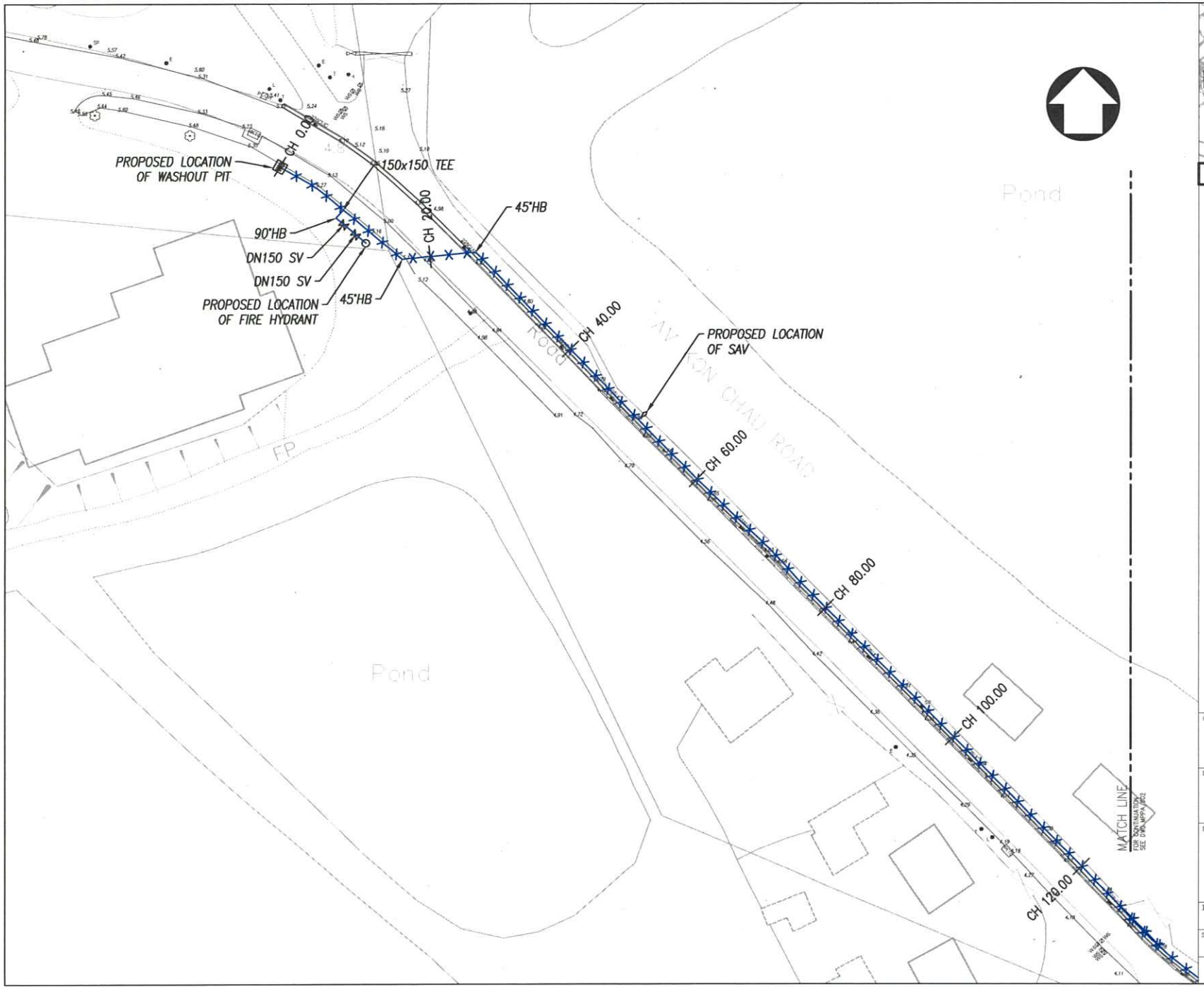
Pei, K.J.C., Lai, Y.C., Corlett, R.T. and Suen, K.Y., 2010. The larger mammal fauna of Hong Kong: species survival in a highly degraded landscape. Zoological Studies, 49(2), pp.253-264.

SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

Wu, J., Wang, J., Zhu, Y., Bu, X., Xiang, R., Lu, Q., Cui, S., Hao, Y., Sheng, Y. and Meng, X., 2020. Summer habitat selection and impacts of human disturbance on leopard cats (Prionailurus bengalensis), Ecosystem Health and Sustainability, p.1856630.

WWF 2019. Mai Po Nature Reserve Management Plan: 2019-2024.



INDEX PLAN

LEGEND:

- BURIED PIPE
- WO — PROPOSED WASH OUT PUMP PIT
- PROPOSED SLUICE VALVE
- PROPOSED SINGLE AIR VALVE
- PROPOSED FIRE HYDRANT

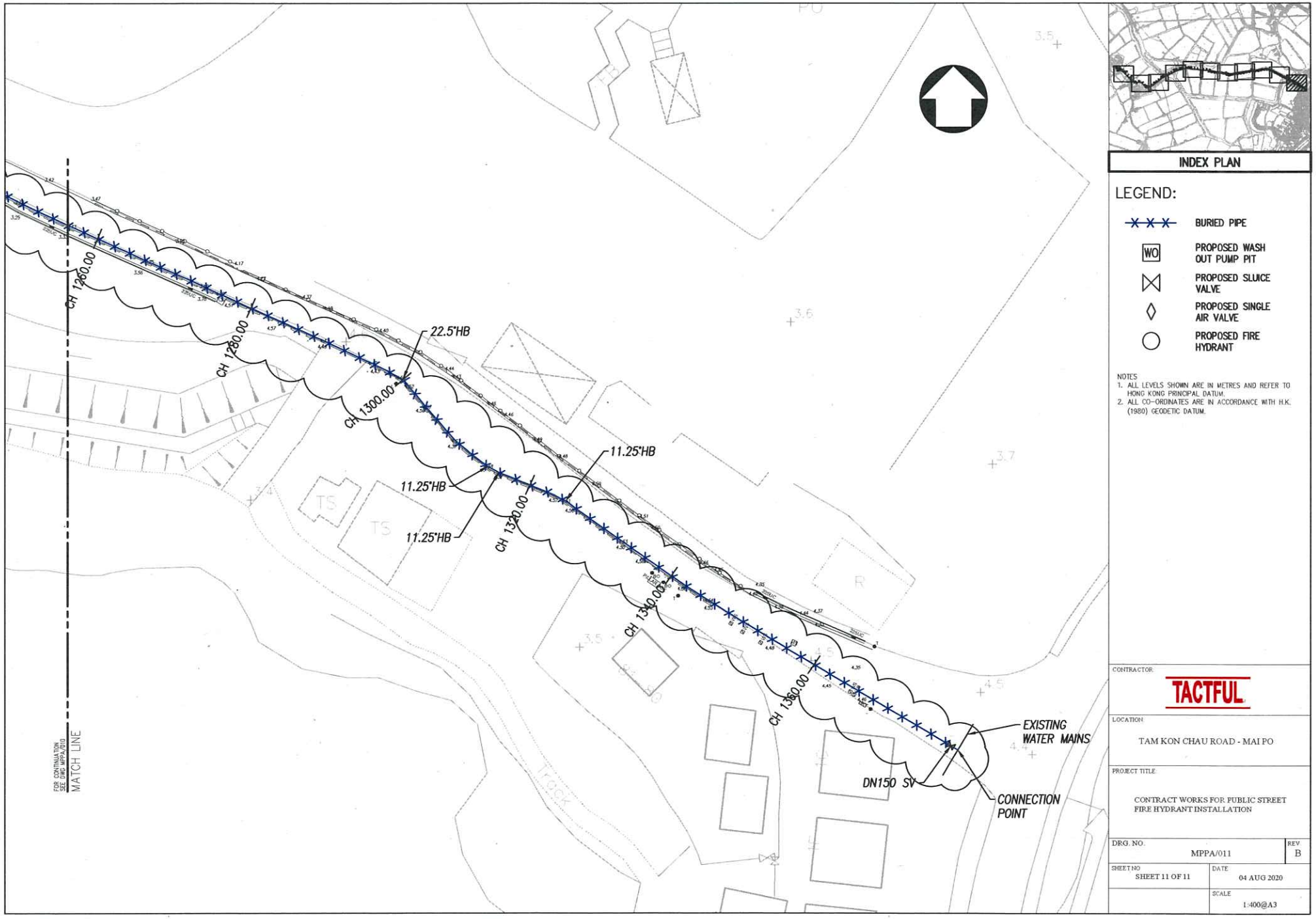
NOTES
1. ALL LEVELS SHOWN ARE IN METRES AND REFER TO HONG KONG PRINCIPAL DATUM.
2. ALL CO-ORDINATES ARE IN ACCORDANCE WITH H.K. (1980) GEODETIC DATUM.

CONTRACTOR
TACTFUL

LOCATION
TAM KON CHAU ROAD - MAI PO

PROJECT TITLE
CONTRACT WORKS FOR PUBLIC STREET FIRE HYDRANT INSTALLATION

DRG. NO.	REV
MPPA/001	B
SHEET NO: SHEET 1 OF 11	DATE: 04 AUG 2020
	SCALE: 1:400@A3



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CONTRACTOR: TACTFUL

LOCATION: TAM KON CHAU ROAD - MAI PO

PROJECT TITLE: CONTRACT WORKS FOR PUBLIC STREET FIRE HYDRANT INSTALLATION

DRG. NO.	REV.
MPPA/011	B

SHEET NO	DATE
SHEET 11 OF 11	04 AUG 2020
	SCALE: 1:400@A3

PlanArch Consultants Ltd.
建港規劃顧問有限公司

Kowloon, Hong Kong.
Tel : (852)
Fax: (852) .

TPB Ref.: A/YL-MP/309
Our Ref.: pa/yl.mp/1608552

By Hand

Secretary
Town Planning Board
15/F., North Point Government Offices
No. 333, Java Road
North Point, Hong Kong
(Attn.: Mr Raymond KAN)

18 August 2021

Dear Sir,

S16 Application for Proposed Underground Water Pipe associated with Upgrading of a Street Fire Hydrant, and Excavation and Back-filling of Land on Government Land along Tam Kon Chau Road
DD101, Mai Po, Yuen Long

We refer to the F.I. submission dated 16 July 2021 and the subsequent comments received from AFCD.

In response to the comments from AFCD, enclosed please find 8 copies of the response to comments together with the updated Ecological Impact Assessment report **(Appendix A)** for your consideration.

The above information serves as technical clarification under the section 5(b) of TPB Guideline 32, and we would like to seek an exemption from publication. In case you decide that the above information is accepted but not exempted from publication, we would like to proceed with the application with the further information.

Should you have any questions, please feel free to contact the undersigned.

Thank you for your kind attention.

Yours faithfully,
For and on behalf of
PlanArch Consultants Ltd.

Betty S. F. Ho
w/e.

cc. Alice Cheung DPO/FLSSYLE Email: ayycheung@pland.gov.hk

	Comments	Response
1.	**Agriculture, Fisheries and Conservation Department (AFCD)** **Contact: Ms. Sandra CHOW (Tel: 2150 6924)**	
(a)	Section 1.1.1 - To provide an overview of the ecological conditions of the project site and its surrounding environment, brief information of the recognized sites of conservation importance within/in proximity of the project site should be provided.	Noted. Section 1.1.1 in the further revised Ecological Impact Assessment at Appendix A has also been revised accordingly.
(b)	Section 1.1.4 - The second paragraph implies that the survey conducted under the PSFSC EEA study entirely covers the project site under the current application but in fact it only covers part of it. Please clarify. - Please elaborate how the "observation on the application site" was conducted (with dates and frequency) as compared with a standard ecological survey, and what comprehensive ecological baseline information was obtained by such observation.	Noted. The sentence is now changed to " The PSFSC EEA report comprised of useful information adopted from a comprehensive ecological survey for the PSFSC with a 500m radius from the facility, which also included part of the application site" in the further revised Ecological Impact Assessment report. Additional information about the "observation on the application site" is also provided in Section 1.1.4.
(c)	Section 1.2.1, 3rd paragraph - Please revise to "...on-site construction work in the portion in "V" zone will avoid the ardeids breeding season (approximately March to August). Construction works will only be carried out after the breeding season and before wintering season, i.e. between August and October."	Noted and the paragraph was amended in the Report.
(d)	Figure 3a	Noted and Figure 3a was revised and it is now known as Figure

	Comments	**Response**
	- Some habitats are missing from the figure. Please revise. - It is noted that the title of the figure is incorrectly put as "*Major habitat types and species of conservation importance identified within the 500 m zone of the field studies centre construction site*". Please rectify. - While "Fire hydrant pipeline buffer (500m)" is listed in the legend, the boundary of this 500m zone along the proposed pipeline is not found. Please check and revise.	3b.
(e)	Section 2.1.3, 3rd paragraph - Please revise to "*An active egretry is found close to the application site in the "V" and "SSSI" zone near the road junction at Tam Kon Chau Road /Castle Road Road (Mai Po Section). The ardeids breeding season falls within March to August; and young ardeids may use the egretry until August.*"	Noted and the paragraph was amended in the Report.
(f)	Section 2.3.2 - Please explain how the ambient level under the Noise Control Ordinance is applicable to ecological impact assessment of habitats / wildlife.	Noted and Section 2.3.2 is revised and included in the enclosed further revised Ecological Impact Assessment report at Appendix A.
(g)	Section 2.3.9 - It is stated that "*It is unlikely that any additional rainwater draining into the stream from the proposed underground water pipe associated with the upgrading of a street fire hydrant will not have a significant negative impact on the ecosystem...*". It sounds	Noted and the revised Section 2.3.9 is included in the revised Ecological Impact Assessment report at Appendix A.

	Comments	**Response**
	there will be significant negative impact. Please clarify.	
(h)	Section 2.6.1, 1st paragraph; Section 4.2.1, 3rd paragraph - Please specify the months for summer non-migratory season.	Noted. The summer non-migratory season is within April to October. This information is now included in Section 2.6.1 (first paragraph) and Section 4.2.1 (third paragraph) for clarity.
(i)	Section 2.6.1, 2nd paragraph - Please add Large Hawk Cuckoo on top of Indian Cuckoo.	Noted and the paragraph was amended in the Report.
(j)	Section 2.6.3, 3rd paragraph - Please revise to "*...no work will be carried out from March until the breeding activity is over at this location. Construction works will only be commenced after all the young ardeids leave the egretry in August (need to confirm prior to commencement of works).*"	Noted and the paragraph was amended in the Report.
(k)	Section 3.2.2 - It seems that this section is related to the impact assessment of the construction of PSFSC rather than the proposed project. The assessment on the commercial fishponds/brackish marsh along the proposed pipeline which will be subject to disturbance arising from the construction activities of this project is still missing. Please review and supplement the relevant assessment accordingly.	Noted and the paragraph was amended in the Ecological Impact Assessment Report at Appendix A.

	Comments	**Response**
(l)	Section 4.4.1, 1st paragraph - Please delete the first sentence as mitigation measures for birds are necessary.	Noted and the first sentence of Section 4.4.1 was deleted in the Ecological Impact Assessment Report at Appendix A.
(m)	Section 4.4.1, 2nd paragraph - Sunset time will be before 1830 in September and October. To avoid works one hour before sunset, it is advised that works near the night roost shall cease by 1700 in September and October.	Noted and the construction time was amended to "0800 to 1700"in the 2nd paragraph in Section 4.4.1 in the Ecological Impact Assessment Report at Appendix A.
(n)	Section 4.4.1, 3rd paragraph - Please revise to "*...no work will be carried out from March until the breeding activity is over at this location. Construction works will only be commenced after all the young ardeids leave the egretry in August (need to confirm prior to commencement of works).*".	Noted and the paragraph was amended in the Ecological Impact Assessment Report at Appendix A.
(o)	Section 5, 7th bullet, last sentence - Please revise to "*... the portion in "V" zone will be done between August and October 2022, depending of the breeding activity of ardeids at the Mai Po Village egretry. Construction works near the ardeids night roost near PSFSC will also cease one hour before sunset.*"	Noted and the paragraph was amended in the Ecological Impact Assessment Report at Appendix A.

Appendix A

Ecological Impact Assessment

Provision of upgrade to public street Fire Hydrant and Provisioning Water Supply Pipeline at Tam Kon Chau Road, Yuen Long on Government Land DD Lot 101

Dr. Mark Shea

Director, China Hong Kong Ecology Consultants Ltd.

August 2021

Contents

Tables

Figures

1. Introduction

1.1. Preamble

1.1.1. This ecological impact assessment is prepared for a S16 application for the proposed underground water pipe associated with upgrading of a street fire hydrant on Tam Kon Chau Road as public utility installation. The proposed underground water pipe alignment ("the project site") is about 1,500m in length and 0.6m in width. The total area for the project site is about 900sq.m., and it is located on Tam Kon Chau Road, which is a paved rural vehicular road frequently used by nearby residents and businesses.

The project site straddles between "Village Type Development" ("V") zone (i.e., about 130m in length) and "Conservation Area" ("CA") zone (i.e., about 1,370m in length) according to the approved Mai Po and Fairview Park Outline Zoning Plan No. S/YL-MP/6. The proposed underground water pipe is to be connected to a street fire hydrant to be upgraded near the Peter Scott Field Studies Centre site.

The project will involve works within the Mai Po Inner Deep Bay Ramsar Site, Wetland Conservation Area (WCA) and Wetland Buffer Area (WBA). Mai Po Inner Deep Bay Ramsar Site was designated by the Government in 1995, under the "Convention on Wetlands of International Importance especially as Waterfowl Habitat" (the Ramsar Convention). The Wetland Conservation Area (WCA) covers all existing contiguous and adjoining active/abandoned fishponds in the landward part of the Ramsar Site. The Wetland Buffer Area (WBA) is an approximately 500m wide strip of land along the landward side of the WCA designated to protect the ecological integrity of the fishponds and wetlands within the WCA, and to prevent developments that would have a negative off-site impact on the ecological value of fishponds.

However, as mentioned in the above paragraph that Tam Kong Chau Road is a paved rural vehicular road frequently used the public, therefore the ecological value of the project site and its vicinity is relatively low.

While one night roost for ardeids can be found near the Peter Scott Field Studies Centre and one egretry is situated on a tree near the road junction at Tam Kon Chau Road/ Castle Peak Road – Mai Po Section, project site is not within "Site of Special Scientific Interest" ("SSSI") on the concerned Outline Zoning Plan.

1.1.2. The Peter Scott Field Studies Centre (PSFSC), situated at the end of Tam Kon Chau Road, falls within a Government, Institution or Community (G/IC) zone, along with the Hong Kong Police Force's Pak Hok Chau Operational Base, insularized within a Conservation Area ("CA" zone) (Figure 1). The Mai Po Site of Special Scientific Interest (SSSI), that includes Mai Po Nature Reserve, lies to the east.

1.1.3. The PSFSC is now being upgraded to a state-of-the art education and training facility to meet the needs of a 21st Century conservation field centre, and to support the visitors to Mai Po and conservation professionals from Hong Kong and the region who will undergo training in wetland management.

1.1.4. In line with the strategy to ensure stringent conformity to environmental standard and safeguards during construction and subsequent operation, a comprehensive assessment of the environment and ecology (EEA) has been completed. The EEA findings are there will be minimal impact to the surrounding areas and measures to mitigate any impact.

The PSFSC EEA report comprised of useful information adopted from a comprehensive ecological survey for the PSFSC with a 500m radius from the facility, which also included part of the application site. Hence, relevant information from the ecological survey was included in this Ecological Impact Assessment report.

The assessment is further supplemented by the monthly observations conducted from June to September 2020 and in April 2021 on the application site, along a standard transect which falls along the concrete-paved Tam Kon Chau Road within "CA" zone and a small portion falling within the "V" zone near Castle Peak Road (Mai Po Section) and also bunds of the nearby fish ponds. Mammals, dragonflies and birds were observed with binoculars, and please refer to Table 6, Table 7 and Table 11 for the observation results.

1.1.5. The rebuild of PSFSC includes upgrading the existing public street fire hydrant and the water provisioning pipeline extending from the WSD's water main at Castle Peak Road – Mai Po section, along Tam Kon Chau to PSFSC (**Figure 2a**).

1.1.6. The Fire Services Department (FSD) requires a street fire hydrant system in accordance with para. 5.25 of the FSI Code to issue the Fire Services Certificate (F.S. 161) to upgrade the system. According to the Water Supplies Department (WSD), there is limited capacity of the water distribution system to install a new pedestal hydrant to replace the current swan neck street fire hydrant, which is not considered a standard street fire hydrant to meet the standard FSI Code. The new system will be a two-outlet street fire hydrant, as requested by WSD.

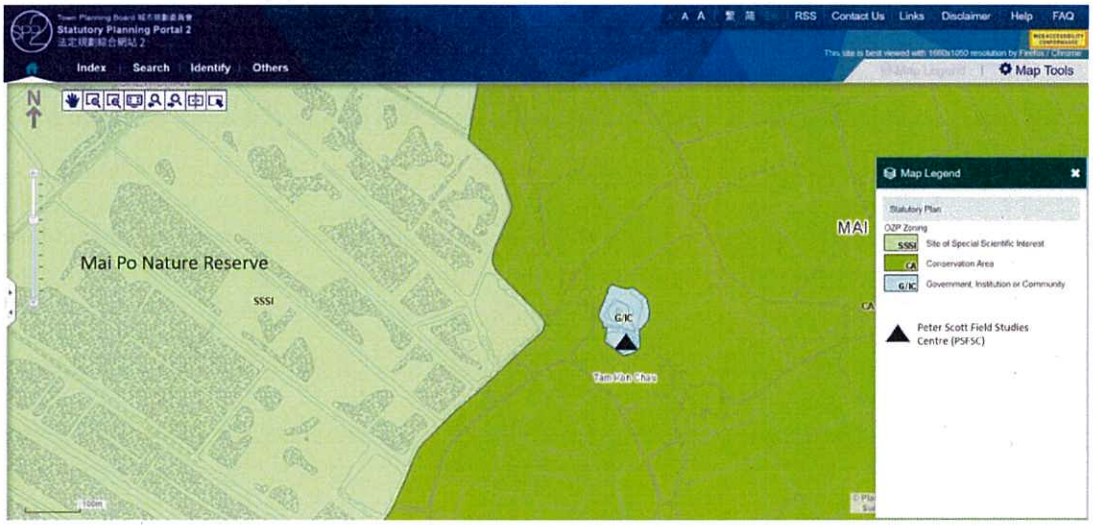


Figure 1. Location of the Peter Scott Field Studies Centre, embedded within the Government, Institution or Community (GI/C) zone, in relation to the Conservation Area (CS) and Site of Special Scientific Interest (SSSI). Map source: https://www2.ozp.tpb.gov.hk/gos/

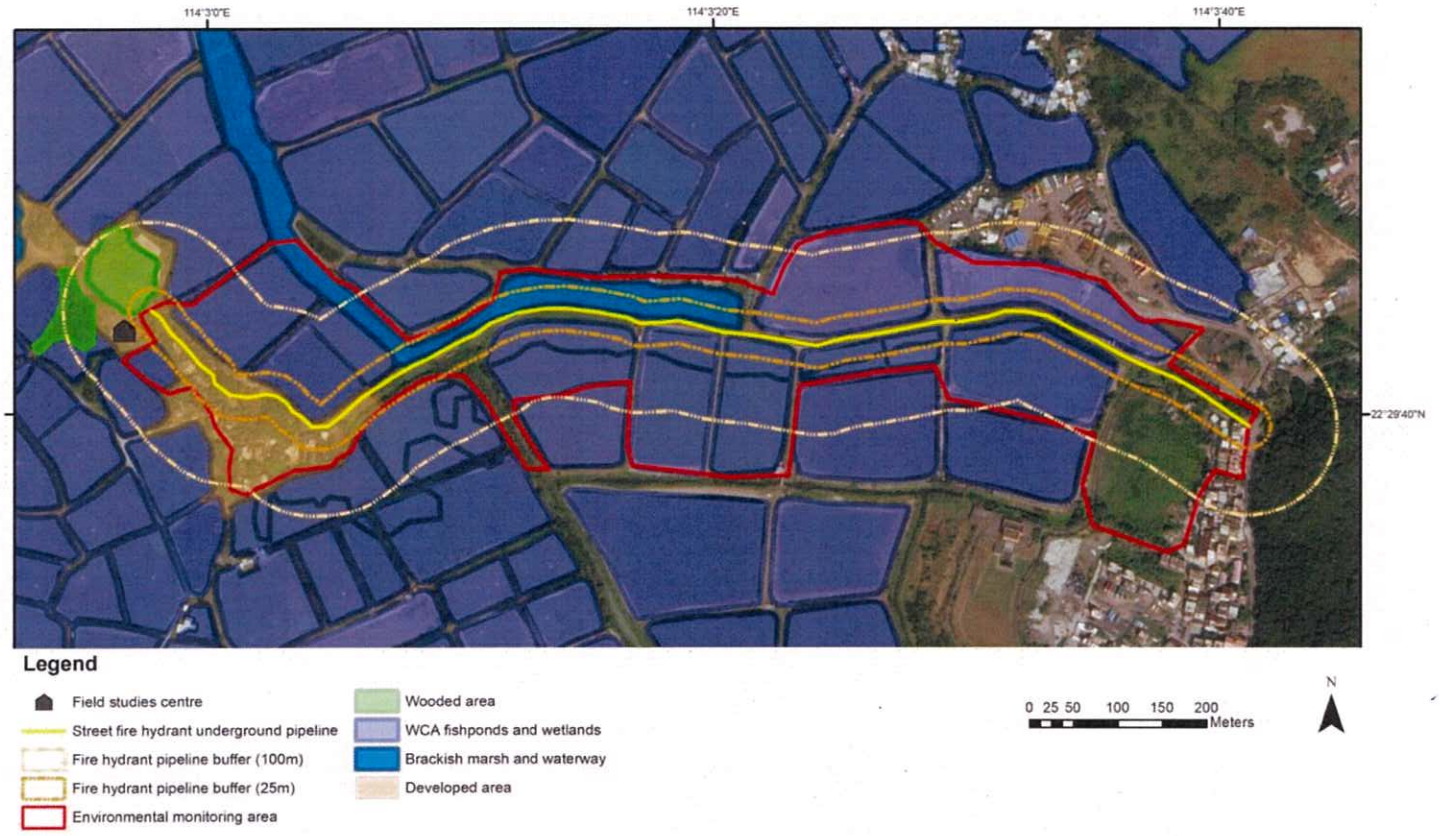


Figure 2a. Project area showing the proposed PSFSC fire hydrant pipeline. The 25m and 100 m contours are shown to identify the extents of anthropogenic disturbance zones for presence and human activity and for noise attenuation from heavy machinery, respectively.

•The 25 m buffer from the proposed pipeline identifies the distance of direct impact on wildlife species from the presence of people and related activity, a reasonable distance based on flight distances of wildlife in the area that is already habituated to human presence

•The 100 m buffer from the proposed pipeline identifies the impact zone from noise caused by machinery during excavation, based on noise attenuation models created and tested under the ecological and environmental impact assessment (SMEC 2019).

•The environmental monitoring area from the fire hydrant pipeline construction demarcated by the red polygon shows the fishponds and the complex of marsh/natural watercourse habitats that could become impacted by spillage of soil and other construction-related pollutants. These are adjacent ponds that are individually and physically bounded and separated by bunds, preventing the spread to adjacent ponds, and the marsh/stream complex.

1.2. Design of the fire hydrant pipeline upgrade

1.2.1. The new system will be an underground water pipe linking the town main at Castle Peak Road (Mai Po Section) to the new street fire hydrant near the PSFSC. The new street fire hydrant will have a water pipe with adequate water pressure and will comply with current FSI Code. The water pipe will be 150mm in diameter, and the proposed alignment is about 1,500m long. The excavation area is limited to be only 0.6m wide and 1,500m long, and about 1.0m deep. Upon the installation of the proposed facilities, the water pipe will be covered with the original excavation material.

The construction of the proposed underground water pipe associated with the upgrading of a street fire hydrant will be carried out in 4-5 months after obtaining the excavation permit. It will be carried out in 5-6 sections, in which respective excavation work and laying of underground water pipe will be carried out by sections.

The construction work will be carried out in non-bird migratory summer season to minimize potential impacts to the habitats in the surrounding areas. In addition, no work will be carried out from November to March next year when the ponds are drained in the portion of the pipeline alignment in "CA" zone ; on-site construction work in the portion in "V" zone will avoid the ardeids breeding season (approximately March to August). Construction works will only be carried out after the breeding season and before wintering season, i.e. between August and October.

Close monitoring of the breeding egrets and their juveniles will be carried out by the applicant, and agreement from AFCD will be sought on the applicants' observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the egretry at the junction of Tam Kon Chau Road and Castle Peak Road – Mai Po Section.

1.2.2. Since the proposed FS hydrant and water supply pipe utility installation involves some land excavation works in the roadway of the conservation area ("CA" zone), permission is being sought from Town Planning Board (TPB) under Section 16 (S.16) of the Town Planning Ordinance.

1.2.3. This report provides a review of the Environmental and Ecological Assessment (2019) and an analysis of the biodiversity surveys and ecological impacts on the flora, fauna, and major ecosystems from the proposed project with recommendations for mitigations during project implementation.

2. Results and Potential Ecological Impacts

2.1. Literature Review

2.1.1. An Environmental and Ecological Assessment prepared in 2019 (SMEC 2019) for the redevelopment of the PSFSC identified seven major landuse/land cover types within a 500 m radius of the project site; namely brackish gei wai, rain-fed ponds, commercial fishponds, brackish marsh, natural watercourse, wooded areas, and developed areas (Figure 3b). While this 500 m radius of study does not cover the entire extent of the water supply line, the similarity of habitats along the pipeline (**Figures 2a and 3a**) can allow an extrapolation of the biodiversity information recorded within this 500 m survey area along the road and buffer with high confidence.

2.1.2. The biodiversity assessment included a survey of flora and fauna, which was conducted between November 2016 and December 2017 on project-specific data and the ecological information around PSFSC, with additional data from the Mai Po management plan, and from WWF surveys in 2019 and 2020. The faunal groups surveyed included mammals, birds, reptiles, amphibians, fishes, Odonates (dragonflies), and butterflies. Together, these groups of flora and fauna are sufficient to assess the ecological impact of the proposed construction of the drainage pipe and can act as proxies for other taxonomic groups.

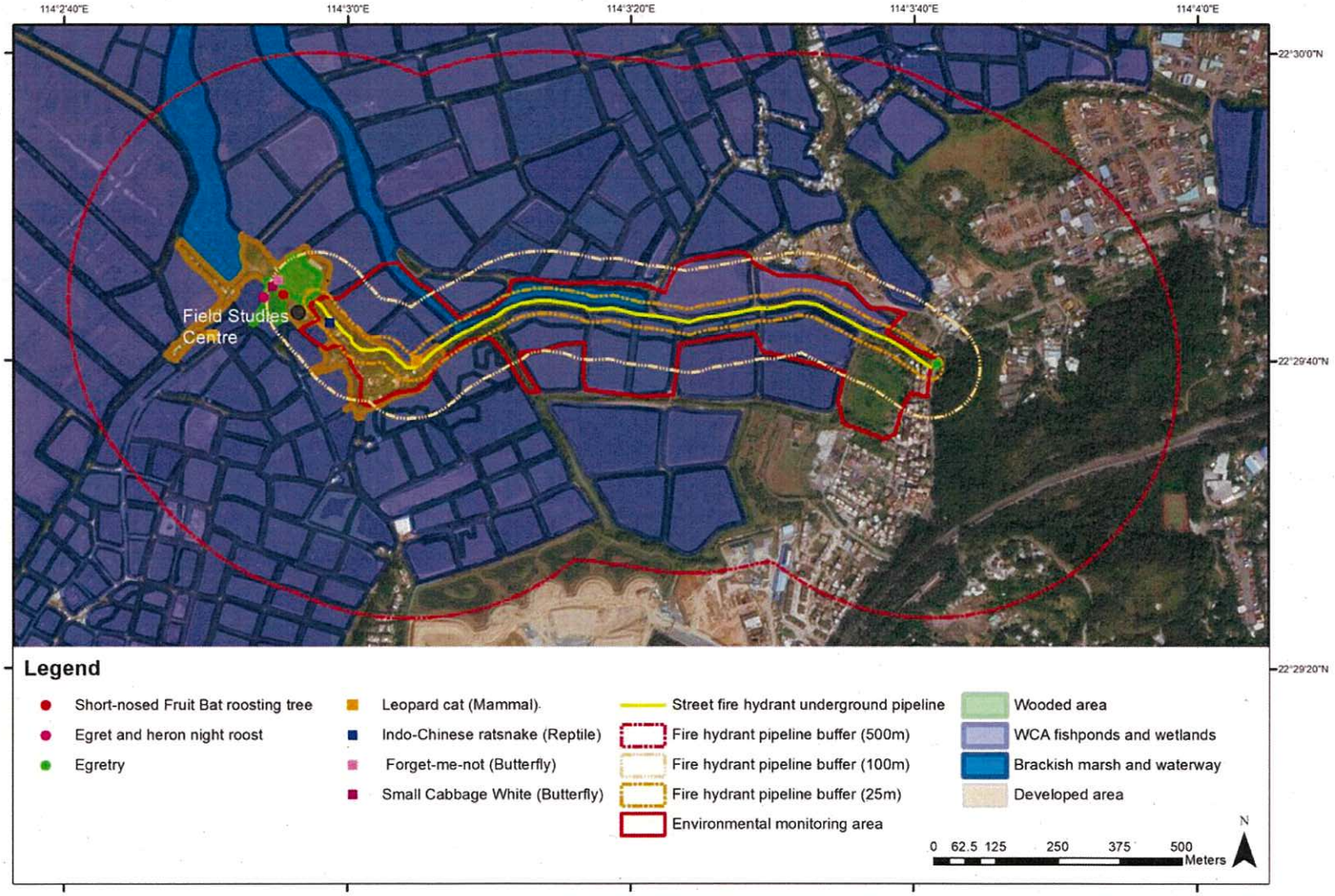
2.1.3. In addition, the assessment is further supplemented by the observations on the application site, for that it falls along the concrete-paved Tam Kon Chau Road within "CA" zone and a small portion falling within the "V" zone near Castle Peak Road (Mai Po Section).

The application site is a unified habitat, where there are many commercial fish ponds with intensive human management activities. Human disturbance brought to wildlife there by pedestrians and vehicles using the road and daily management of the ponds are unavoidable. Nevertheless, we recognize the intensive use by heron and egret species especially at drain-down period during harvesting, as proven by previous studies. Thus, fish ponds' ecological value is affected by human management (i.e. their ecological value would increase only when the fishermen lower down the water level).

An active egretry is found close to the application site in the "V" and "SSSI" zone near the road junction at Tam Kon Chau Road /Castle Road Road (Mai Po Section). The ardeids breeding season falls within March to August; and young ardeids may use the egretry until August.

Close monitoring of the breeding egrets and their juveniles will be carried out by the applicant, and agreement from AFCD will be sought on the applicants' observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the egretry at the junction of Tam Kon Chau Road and Castle Peak Road – Mai Po Section.

Figure 3b. Major habitat types and species of conservation importance identified within the 500 m zone of the construction site for the proposed use



2.2. Overview

2.2.1. Overall, none of the faunal species found in the major habitats can be considered either territorial or highly philopatric to that small area of impact. Thus, it is unlikely that excavating along the proposed fire hydrant pipeline will have direct and permanent impacts on the fauna. Because the excavation will be along a paved area, there will be no impact on vegetation and floral species.

2.2.2. The area to be excavated is mostly along Tam Kon Chau Road; a developed area with regular vehicular traffic and human presence and activity. Thus, most wildlife in this area is habituated to higher ambient noise levels and human activity.

2.3. Major habitats

Brackish Gei Wai and Rain-fed Ponds in the Mai Po Nature Reserve

2.3.1. The gei wai and rainfed ponds are in the Mai Po Nature Reserve, which is over 150 m from the nearest point of the project area. These represent some of the most important habitats in the Mai Po Inner Deep Bay Ramsar site and support the important biodiversity in Mai Po.

2.3.2. An ecological assessment of the brackish gei wai and rainfed ponds in the Mai Po Nature Reserve by the Environmental and Ecological Assessment (2019)[1] is given in **Table 1**. Overall, the excavation site is over 150 m from these habitats and will not cause any direct physical damage to these habitats. Since only excavation work will be involved with no piling work and the applicant will strive to implement all possible mitigation measures to minimize potential noise impact to the surrounding habitats, any noise will likely get attenuated to below the acceptable ambient level of 75dB(A).

Table 1. Ecological values and ranking of the brackish gei wai and rain-fed ponds in the project area. Table from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

Criteria	MPNR Brackish Gei Wai and Rain-fed Pond
Naturalness	Originally a modified habitat mosaic but actively managed to enhance its natural features.
Diversity	High diversity of fauna, especially birds, moderate diversity of flora.
Rarity	Actively managed wetlands are few in Hong Kong and MPNR is much the largest, thus rendering it unique in a Hong Kong context and rare in a regional context.
Re-creatability	Potentially re-creatable, especially if baseline conditions include existing coastal wetland habitats such as fish ponds, though some habitats such as mangroves would take some time to reach maturity and resource inputs would be high.
Fragmentation	Not fragmented.
Ecological linkage	Strong ecological linkages to other habitats in the Ramsar Site.
Potential value	Despite its high existing value, ongoing active management has the potential to increase value incrementally.
Nursery/breeding ground	Significant breeding ground, especially for wetland birds and some aquatic invertebrates and fish.
Age	Actively managed as a nature reserve for just over 30 years.
Abundance/richness of wildlife	Bird diversity and abundance are high to very high especially during migration and winter seasons. Other faunal groups are also more abundant and diverse than in most Deep Bay wetland areas.
Ecological value	**Very High Ecological Value.**

Commercial Fishponds in the Wetland Conservation Area

2.3.3. Fishponds are the dominant habitat in the project area (**Figure 2a**). Most are actively maintained for pisciculture, and includes stocking, grow-out, and harvesting of fish. Pond management includes managing and monitoring of water quality and re-profiling ponds as necessary. Bund vegetation is

[1] SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

regularly managed and is mostly maintained with very low vegetation. The dominant plant species are common grasses and ruderal herbs, with scattered trees. Vehicular traffic along some bunds is present. These bunds have been strengthened by import of fill material, limiting the colonisation of vegetation. Dogs are often present, creating an additional source of disturbance to wildlife. There are some community ponds and these ponds are not actively managed as commercial fishponds. Thus, the landscape of commercial fishponds is highly managed and are sites of high anthropogenic activity.

2.3.4. An ecological assessment of the Commercial Fishponds by the Environmental and Ecological Assessment (2019) is given in **Table 2.** Overall, the excavation will not cause any direct physical damage to these fishponds. Any impact on fauna from noise and anthropogenic activity associated with the excavation and building works should not add significantly to the ambient anthropogenic disturbances.

Table 2. Ecological values and ranking of the commercial fishponds in the project area. Table from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

Criteria	Active Fish Pond	Abandoned Fish Pond
Naturalness	Man-made habitat with high levels of human activity.	Man-made habitat but now with low levels of human disturbance.
Diversity	Low habitat and vegetation diversity but moderate diversity of fauna, especially birds.	Diversity of vegetation and microhabitats higher than in managed ponds, similar overall faunal diversity but species composition differs.
Rarity	Fish ponds are a common habitat in the Deep Bay area, but are becoming less common throughout Hong Kong. Active fish ponds at Lut Chau are important for Collared Crow (globally Near-threatened).	Fish ponds are a common habitat in the Deep Bay area, but are becoming less common throughout Hong Kong. Blocks of contiguous abandoned fish ponds with such low levels of human disturbance as those to the south of Pak Hok Chau are unusual.
Re-creatability	Easily re-creatable.	Easily re-creatable.
Fragmentation	Not fragmented.	Not fragmented.
Ecological linkage	Ponds show strong ecological linkage to nearby wetland habitats, including abandoned ponds and intertidal rivers.	Ponds show strong ecological linkage to nearby fish ponds and other wetland habitats.
Potential value	Value could be increased by more ecologically-friendly management methods. The MAs may be effective in this respect. However, value may also decrease if fisheries management becomes more intensive.	Value could be increased by more ecologically-friendly management methods. However, value may also decrease if fisheries management is resumed and becomes intensive.
Nursery/breeding ground	No significant nursery or breeding grounds, but used by foraging egrets from Mai Po Village and Mai Po Lung Village egretries.	No significant nursery or breeding grounds known but doubtless supports breeding wetland-dependent fauna including disturbance-sensitive species.
Age	Not known but moderately old.	Not known but moderately old.
Abundance/richness of wildlife	Some waterbird species, notably ardeids, are routinely present in moderate numbers and may be abundant during pond-drain down. Low abundance and diversity of other fauna (dragonflies and amphibians).	Abundance generally of waterbirds typically lower than in active ponds but this is partly a function of species using this habitat being more solitary than those which favour active ponds; other faunal groups, such as amphibians, generally more abundant and diverse than in managed ponds.
Ecological value	In their current state these ponds attract moderate numbers and diversity of wetland species, although some wetland birds are present in good numbers and the ecological linkages are good; these active ponds are therefore considered currently to be of moderate to high importance. However, given their scale and location and their ecological linkages to MPNR, there is considerable potential to improve these ponds by MAs and similar means and taking this potential value into account these ponds are considered to be of **High Ecological Value.**	These abandoned ponds support smaller numbers of birds of conservation importance than active ponds. However, taking into account their value for other wetland fauna, the fact that they support a different suite of wetland birds to active ponds, the relatively large area and its freedom from disturbance, these ponds are considered to be of **High Ecological Value.**

Brackish Marshes and Natural Watercourses

2.3.5. Brackish marshes and streamshave been combined in **Figure 2a**. The stream can be identified by the line of trees/mangroves in the map. The stream discharges into the Shenzhen River to the north of Tam Kon Chau.

2.3.6. This complex of habitats is influenced by tidal fluxes, and is periodically inundated and flushed by the brackish water from the bay. The fauna in this habitat complex includes bird species such as ardeids, rails and wetland-dependent or associated passerines, such as Oriental Reed, Black-browed Reed and Dusky Warblers.

2.3.7. The marshes in Mai Po also support the Mai Po bent-winged firefly (*Pteroptyx maipo*), a species considered endemic to Deep Bay; however, it is unclear if the species was recorded from the mangroves in this habitat complex.

2.3.8. The ecological evaluation of Brackish Marshes and Natural Watercourses by the Environmental and Ecological Assessment (2019) is given in **Table 3**.

2.3.9. During heavy rains and storm events the rainwater from the vicinity will eventually drain and flow through the watercourses in this habitat complex, and out into the Shenzhen River. It is unlikely that any additional rainwater draining into the stream from the proposed underground water pipe associated with the upgrading of a street fire hydrant will have a significant negative impact on the ecosystem.

Table 3. Ecological values and ranking of the brackish marshes and natural watercourses in the project area. Table from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

Criteria	Brackish Marshes and Natural Watercourses
Naturalness	Natural habitat with few recent anthropogenic influences.
Diversity	Low diversity of microhabitat types but reasonably high faunal diversity, especially birds and invertebrates.
Rarity	Habitat is relatively rare in Hong Kong, and many areas are threatened by anthropogenic activities and succession. Most species using this habitat are not rare but some are habitat specialists, notably Bent-winged Firefly.
Re-creatability	Could be re-created at a suitable location by restoring channelised watercourse and adjacent habitats.
Fragmentation	Not fragmented.
Ecological linkage	Ecologically linked to mudflats and mangrove and fish pond areas, but upstream linkages are blocked by channelised watercourse and urban development.
Potential value	Could be enhanced by conservation management and reduction in pollution load to watercourses.
Nursery/breeding ground	No significant nursery or breeding grounds.
Age	Not known.
Abundance/richness of wildlife	High abundance and diversity of wetland birds and some invertebrate groups.
Ecological value	Considered to be of **High Ecological Value**.

Wooded Area

2.3.10. The application site is outside the secondary woodland area near Tam Kon Chau Road (**Figure 2a**). The wooded area is dominated by naturally regenerated native tree species, especially *Ficus microcarpa* that attracts several frugivorous bird species, including a colony of Azure-winged Magpies (*Cyanopica cyanus*), an exotic species to Hong Kong. A pair of Chinese Blackbirds (*Turdus mandarinus*), a winter visitor, has been documented breeding around the PSFSC since at least 2007 (SMEC 2019). A *Livistona chinensis* tree in this wooded area is utilised as a roost site by Short-nosed Fruit Bat (SMEC 2019).

2.3.11. An ecological evaluation of the Wooded Area by the Environmental and Ecological Assessment (2019) is given in **Table 4**.

2.3.12. This habitat is considered to be of Moderate Ecological Value (**Table 4**), but overall, the excavation will not cause any physical damage to the wooded area since the physical works will occur along the road.

Table 4. Ecological values and ranking of the Wooded Area in the project area. Table from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

Criteria	Wooded Area
Naturalness	Naturally regenerated but some anthropogenic influences and planted / exotic species present.
Diversity	Low diversity of woody flora and resident fauna due to small size but visited by a relatively high diversity of migratory birds on a casual basis.
Rarity	Disturbed secondary woodland is a common habitat in Hong Kong.
Re-creatability	Can be re-created in suitable locations, although trees would take a long time to reach maturity.
Fragmentation	Internally fragmented by buildings; fragmented from other woodland habitats by wetland areas.
Ecological linkage	Utilised as roosting sites by birds foraging in adjacent wetland areas; wooded area north of PSFSC was formerly utilised by breeding Chinese Pond Herons.
Potential value	Value will increase naturally over time as trees mature; areas around PSFSC could be increased if brought under conservation management.
Nursery/breeding ground	Wooded area north of PSFSC formerly used by breeding Chinese Pond Herons, currently used by breeding Azure-winged Magpies and Chinese Blackbird and roosting Short-nosed Fruit Bats.
Age	Uncertain but many trees are large.
Abundance/richness of wildlife	Low abundance but moderate diversity of fauna, notably birds.
Ecological value	Most trees are native but small areas and disturbance compromises the habitat value to some extent, thus assessed as of **Moderate Ecological Value**.

Developed Areas

2.3.13. The project area lies within the developed area. The area consists of small groups of domestic and farm structures along Tam Kok Chau Road (**Figure 2a**). The environs of domestic structures around Tam Kon Chau Road are well vegetated with ornamental trees and shrubs and fruit trees which attract several birds and butterflies that are nevertheless mostly common and widespread in Hong Kong.

2.3.14. An ecological evaluation of the Developed Areas by the Environmental and Ecological Assessment (2019) is given in **Table 5**.

2.3.15. The excavation works for the proposed fire hydrant pipeline will construct along the road in this area. But, because all fauna recorded in this habitat are common and widespread, and not considered philopatric or territorial, significant impacts from the construction work is highly unlikely.

Table 5. Ecological values and ranking of the Developed Area in the project area. Table from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.

Criteria	Developed Area
Naturalness	An artificial, man-made habitat.
Diversity	A low to moderate diversity of vegetation managed for cultivation and ornamental purposes around houses.
Rarity	A common habitat in Hong Kong.
Re-creatability	Easily re-creatable.
Fragmentation	Most developed areas in the Study Area are rather fragmented and do not pose a significant barrier to faunal movement.
Ecological linkage	No significant ecological linkages.
Potential value	Little scope for an increase in ecological value.
Nursery/breeding ground	Some structures are used by breeding White-shouldered Starlings and perhaps by bats.
Age	Most areas occupied by structures have been developed for many years, with little recent change in the areas and extent of development. However, there has been an increase in the area occupied by on-farm structures in recent years, especially to the south of Tam Kon Chau Road.
Abundance/richness of wildlife	Moderate abundance and diversity of bird and butterfly species associated with domestic and farm structures; most species are habitat-generalists but the locally distributed White-shouldered Starling appears to be largely dependent upon anthropogenic breeding sites in Hong Kong.
Ecological value	In general, developed areas are considered to be of **Low Ecological Value**, however the domestic structures and their environs at Tam Kon Chau Road are considered to be of **Low to Moderate Ecological Value** in view of their importance to breeding White-shouldered Starlings.

2.4. Flora and Vegetation

2.4.1. The proposed excavation site lies along a concrete-paved road. The beginning of the road has two small wooded patches on either side with trees that include *Macaranga tanarius var. tomentosa*, *Ficus subpisocarpa*, *Melia azedarach*, *Celtis sinensis* and *Ficus microcarpa*, but the open sections further east (Figure 2a) are lined with a verge with ruderal herbs and grasses, such as *Bidens alba*, *Chloris barbata* and *Panicum maximum*, and shrubs such as *Lantana camara* and *Ligustrum sinense*.

2.5. Mammals

2.5.1. A Chinese Fan Palm (*Livistona chinensis*) adjacent to Pond 182 and Pak Hok Chau Public Toilet was identified as a Short-nosed Fruit Bat (*Cynopterus sphinx*) roosting site, with about 14 individuals. Juveniles among this group indicated that this was a maternity roost. Although the Short-nosed Fruit Bat is protected locally under Cap.170, it is considered very common in Hong Kong, and is very widely distributed in urban and countryside areas throughout Hong Kong (AFCD 2017). Since the roosting bats seem habituated to existing disturbance levels, it is unlikely that the excavation will cause much impact to this bat colony. Surveys after construction of the field studies centre began indicate that the bats are still using the roosting site. Many of the other bats that have been recorded from Mai Po will also be expected to use the project area, but because they are nocturnal, it is very unlikely that the construction work will affect these species. The surveys did not locate any roosting areas of these bats.

2.5.2. Other mammals recorded from the 500 m study area include the Leopard Cat (*Prionailurus bengalensis*), Pallas's squirrel (*Callosciurus erythraeus*), and the Small Indian mongoose (*Herpestes javanicus*).

2.5.3. While the evidence of leopard cat presence was of scat recorded along Tam Kon Chau Road (Figure 3), it is likely that this species is more widely distributed in the study area, including in proximity to the pipeline excavation site and the hydrant construction site. However, the species is a habitat generalist, is nocturnal, and even prefers habitat that is moderately human-modified (Wu et al 2020). Thus, it is very likely that any leopard cats close to the project area will adapt and not be affected by any daytime disturbance cause by construction as they are nocturnal species.

2.5.4. The Small Indian mongoose has an extensive global range distribution and has been introduced into areas outside its natural range where it has thrived. The species was first definitely recorded in Hong Kong in the 1980s, but is now considered to be abundant in the Mai Po Nature Reserve, and widespread throughout the central and northern New Territories (Dudgeon and Corlett 2004). The species adapts well to disturbance (Pei et al. 2010), and any project-related impacts to animals in the vicinity will likely be minimal and impermanent.

2.5.5. The Pallas's Squirrel is an introduced species in Hong Kong and is common[2] The squirrels are mostly found in the wooded areas, on trees, and will not be significantly affected by the excavation work.

2.5.6. There are other species that have been recorded from Mai Po Nature Reserve (Table 6, WWF 2019) that have not been recorded during the mammal surveys. Many of these species could occur in the project site. Species such as the Small Indian civet (*Viverricula indica*) and East Asian porcupine (*Hystrix brachyura*) are largely nocturnal, seeking dens and other refugia during the daytime. Thus, any activity related to excavation and construction will not have a significant impact on these species.

2.5.7. Among the rodents, the Lesser Rice-field Rat (*Rattus losea*) and Ryukyu Mouse (*Mus caroli*) have been recorded from the Mai Po area only. While the former is considered common, the latter is rare, but both have extensive range distributions across Asia and are listed as Least Concern in the IUCN Red List.3

2.5.8. Another species that should be of concern is the Eurasian otter (*Lutra lutra*). However, there have not been any records of otters from the project area. Recent camera trap surveys (albeit since 2021) in the fishponds close to PSFSC have also not confirmed the presence of otters close to the hydrant area.

Table 6. List of mammal species recorded by WWF in the area (WWF 2019-2021)

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION IN HK	CONSERVATION STATUS	IDENTIFIED IN THE 5 MONTHLY OBSERVATIONS CARRIED OUT BY WWF-HK
Musk Shrew	*Suncus murinus*	Fairly widely distributed in countryside areas throughout Hong Kong.	(LC)	N/A
Leschenault's Rousette	*Rousettus leschenaulti*	Fairly widely distributed in countryside areas throughout Hong Kong.	LC, (LC)	N/A
Short-nosed Fruit Bat	*Cynopterus sphinx*	Very widely distributed in urban and countryside areas throughout Hong Kong.	Cap. 170, (LC), I	N/A
Intermediate Horseshoe Bat	*Rhinolophus affinis*	Widely distributed in countryside areas throughout Hong Kong.	Cap. 170, LC, (LC)	N/A
Least Horseshoe Bat	*Rhinolophus pusillus*	Widely distributed in countryside areas throughout Hong Kong.	Cap. 170, PRC, (LC)	N/A
Horsfield's Myotis	*Myotis horsfieldii*	Found in Shek Kong, Pak Tam	Cap. 170, PRC, (LC)	N/A

[2] https://www.afcd.gov.hk/english/conservation/hkbiodiversity/database/popup_record.php?id=3769&lang=en#conservation

[3] https://www.iucnredlist.org

		Chung, Fung Yuen, Plover Cove, Pat Sin Leng and Shing Mun Country Parks.		
Chinese Noctule	*Nyctalus plancyi*	Fairly widely distributed in countryside areas throughout Hong Kong.	Cap. 170, PRC, (LC)	N/A
Japanese Pipistrelle	*Pipistrellus abramus*	Widely distributed throughout Hong Kong.	Cap. 170, (LC)	N/A
Least Pipistrelle	*Pipistrellus tenuis*	Ten-something records found in Nam Chung, Sheung Wo Hang, Lin Ma Hang, Plover Cove Country Park, Yuen Long, Shek Pik, Deep Water Bay, Ho Pui and Ho Chung.	Cap. 170, (LC)	N/A
Chinese Pipistrelle	*Hypsugo pulveratus*	Only several records in the countryside areas at Ting Kau, Ma On Shan and Lin Ma Hang, and several records of stray individuals inside buildings.	Cap. 170, LC, (LC)	N/A
Lesser Bamboo Bat	*Tylonycteris pachypus*	Fairly widely distributed in countryside areas throughout Hong Kong.	Cap. 170, LC, (LC)	N/A
Lesser Yellow Bat	*Scotophilus kuhlii*	Fairly widely distributed in countryside areas throughout Hong Kong.	Cap. 170, LC, (LC)	N/A
Greater Bent-winged Bat	*Miniopterus magnater*	Data deficient.	Cap. 170, PRC, (LC)	N/A
Lesser Bent-winged Bat	*Miniopterus pusillus*	Fairly widely distributed in countryside areas throughout Hong Kong.	Cap. 170, PRC, (LC)	N/A
Greater Bandicoot Rat	*Bandicota indica*	Found in Mai Po, Pat Sin Leng Country Park and on Lantau.	LC, (LC)	N/A
Chestnut Spiny Rat	*Niviventer fulvescens*	Widely distributed in countryside areas throughout Hong Kong.	(LC)	N/A
Indochinese Forest Rat	*Rattus andamanensis*	Widely distributed in countryside areas throughout Hong Kong.	(LC)	N/A
Lesser Rice-field Rat	*Rattus losea*	Recorded in Mai Po area.	(LC)	N/A
Ryukyu Mouse	*Mus caroli*	Found only in Mai Po and Hong Kong Wetland Park.	(LC)	N/A
East Asian Porcupine	*Hystrix brachyura*	Very widely distributed in countryside areas throughout Hong Kong, except for Lantau	PGC, (LC)	N/A

		Island.		
Eurasian Otter	*Lutra lutra*	Restricted to Mai Po, Hoo Hok Wai, and nearby areas.	Cap.586, Cap.170, RC, (NT), VU	N/A
Small Indian Civet	*Viverricula indica*	Very widely distributed in countryside areas throughout Hong Kong, except for Lantau Island.	Cap. 170, (LC)	N/A
Small Asian Mongoose	*Herpestes javanicus*	Fairly widely distributed in countryside areas in the New Territories.	Cap. 170, (LC)	N/A
Leopard Cat	*Prionailurus bengalensis*	Widely distributed in countryside areas throughout Hong Kong, except for Lantau Island.	Cap.586, Cap.170, (LC), VU	N/A
Wild Boar	*Sus scrofa*	Very widely distributed in countryside areas throughout Hong Kong.	(LC)	N/A
Introduced species:				
Rhesus Macaque	*Macaca mulatta*	Mainly distributed in Kam Shan, Shing Mun and Tai Po Kau; also found in Ma On Shan, Sai Kung, Tai Lam Country Parks and the North District.	Cap.586, Cap.170, (LC), VU	N/A
Brown Rat	*Rattus norvegicus*	Widely distributed in urban areas associated with human activity.	(LC)	N/A
Roof Rat	*Rattus rattus*	Widely distributed in urban areas associated with human activity.	(LC)	N/A
Asian House Rat	*Rattus tanezumi*	Fairly widely distributed in countryside areas throughout Hong Kong.	(LC)	N/A
House Mouse	*Mus musculus*	Widely distributed in urban areas associated with human activity.	(LC)	N/A
Domestic Dog	*Canis lupus familiaris*	Widely distributed in urban and countryside areas throughout Hong Kong.	N/A	Yes
Domestic Cat	*Felis catus*	Widely distributed in urban and countryside areas throughout Hong Kong.	N/A	N/A
Domestic Water Buffalo	*Bubalus bubalis*	Found in Kam Tin, and the southern part of Lantau Island.	N/A	N/A

Key:

-Cap. 586: Species under protection of Endangered Species of Animals and Plants Ordinance (Cap. 586)

-Cap. 170: Species under protection of Wild Animals Protection Ordinance (Cap. 170)

-Fellowes et al. (2002): RC=Regional Concern; LC=Local Concern; PRC=Potential Regional Concern; PGC= Potential Global

Concern

-IUCN Red List of Threatened Species Status: (LC)=Least Concern; (NT)= Near Threatened

-China Red Data Book Status: I= Indeterminate; VU= Vulnerable

2.6. Birds

2.6.1. Mai Po is noted for harbouring tens of thousands of migratory waterbirds that use the wetlands from November to March, and other passerines that use reedbeds, shrublands, and wooded habitats. Several of these species are highly threatened and endangered and are more intolerant of disturbance. Therefore, construction work will take place during the summer non-migratory season (i.e., from April to October), so that the migratory birds will not be impacted. Construction work during wintering season will be avoided as a mitigation measure.

Instead, in summer only the non-migratory birds are considered. Exceptions are the Large Hawk Cuckoo (*Hierococcyx sparverioides*) and Indian Cuckoo (*Cuculus micropterus*), which are summer visitors.

2.6.2. The surveys have encompassed a 500 m buffer area that includes most of the Mai Po Nature Reserve. Birds travel over relatively large areas that transcend the proposed project area and many of the birds that have been recorded from the study area of a 500 m buffer from PSFSC can be expected to occur along the hydrant and pipeline project area. However, it is important to note that many of these birds would be associated with wetlands, including fishponds. The birds that habitually use these fishponds would already be habituated to disturbance and human activity associated with fishpond management, vehicular traffic along the road, including noise from heavy vehicles along Castle Peak Road.

Overall, 54 resident bird species (including the summer migrant) have been recorded from the project area (**Table 7**). All species are common, abundant, and widespread in Hong Kong and the Mai Po area. Most are found in degraded habitats that are subjected to anthropogenic disturbances and impacts, and forage, live, and even nest close to buildings and other human-use areas. For example, during the early surveys there was a pair of White-shouldered Starlings nesting on the electricity supply pylon outside the PSFSC site boundary and an egret roost in the trees next to the PSFSC forecourt. During April 2019, about 74-84 Little Egrets, 25 to 33 Chinese Pond Herons, 6 Great Egrets and 1 Cattle Egret were observed recorded flying to a night roost in the trees adjacent to the PSFSC forecourt. Since the project will be carried out during the summer (non-migratory season), the winter migrant data are irrelevant here.

There is an egretry at the intersection of the Castle Peak Road and Tam Kon Chau Road (please refer to Figure 3b for the location). Both roads are used by heavy vehicles, and the egretry is also surrounded by busy human habitation, including stone-based construction premises. Therefore it is highly unlikely that any additional noise and activity from the excavation work for the hydrant will cause further disturbance to the egrets.

2.6.3. Nevertheless, in view of the fact that there is an active egretry within the pipeline alignment in the "Village Type Development" zone ("V")/ near the road junction at Tam Kon Chau Road/ Castle Peak Road- Mai Po Section, no work will be carried out from March until the breeding activity is over at this location. Construction works will only be commened after all the young ardeids leave the egretry in August (need to confirm prior to commencement of works).

Close monitoring will be carried out by the applicant, and agreement from AFCD will be sought on applicant's observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the above-mentioned egretry.

Table 7. List of non-migratory bird species recorded from the project area

COMMON NAME	SCIENTIFIC NAME	WETLAND DEPENDENT?	DISTRIBUTION IN HK	CONSERVATION STATUS	IDENTIFIED IN THE 5 MONTHLY OBSERVATIONS CARRIED OUT BY WWF-HK
Besra	*Accipiter virgatus*	N	Common resident and migrant in shrubland and wooded areas	Cap.586, Cap.170, (LC)	N/A
Eurasian Tree Sparrow	*Passer montanus*	N	Abundant resident in most habitats	Cap.170, (LC)	Yes
Sooty-headed Bulbul	*Pycnonotus aurigaster*	N	Common resident in open country habitats away from urban and marshy areas	Cap.170, (LC)	N/A
Red-whiskered Bulbul	*Pycnonotus jocosus*	N	Abundant resident in most habitats except woodland interior	Cap.170, (LC)	Yes
Chinese Bulbul	*Pycnonotus sinensis*	N	Abundant all year, with migrants and winter visitors occurring, present in nearly all habitats, the most abundant and widespread species in HK	Cap.170, (LC)	Yes
Greater Coucal	*Centropus sinensis*	N	Widespread and common resident in lowland shrubland areas	Cap.170, (LC), VU	Yes
Large-billed Crow	*Corvus macrorhynchos*	N	Common resident of open rural and wooded urban-edge habitats	Cap.170, (LC)	Yes
Collared Crow	*Corvus torquatus*	Y	Locally common resident, mainly in coastal areas	Cap.170, LC, (NT)	Yes
Indian Cuckoo	*Cuculus*	N	Locally common spring	Cap.170, (LC)	N/A

	micropterus		and summer visitor to open woodland habitats		
Large Hawk-cuckoo	*Hierococcyx sparverioides*	N	Locally common spring and summer visitor to closed-canopy shrubland and woodland	Cap.170, (LC)	N/A
Black Drongo	*Dicrurus macrocercus*	N	Locally common summer visitor in lowland open country with scattered trees	Cap.170, (LC)	Yes
Spotted Dove	*Spilopelia chinensis*	N	Abundant resident in diverse habitats in urban and rural areas	Cap.170, (LC)	Yes
Eurasian Collared Dove	*Streptopelia decaocto*	N	Locally common breeding resident in northwest NT	Cap.170, (LC)	Yes
Great Egret	*Ardea alba*	Y	Abundant, present all year in wetlands, mainly in the Deep Bay area	Cap.170, PRC, (LC)	Yes
Intermediate Egret	*Egretta intermedia*	Y	Uncommon, present all year, though rather few in summer, mainly in freshwater wetlands in the Deep Bay area	Cap.170, RC, (LC)	N/A
Eastern Cattle Egret	*Bubulcus coromandus*	Y	Common in widespread freshwater wetlands and short grassland areas, with winter, migrant and breeding populations	Cap.170, LC, (LC)	Yes
Little Egret	*Egretta garzetta*	Y	Abundant, present all year in wetland areas throughout HK, mostly in the Deep Bay area	Cap.170, PRC, (LC)	Yes
Swinhoe's White-eye	*Zosterops simplex*	N	Abundant and widespread resident of urban and rural wooded habitats with increased numbers in winter	Cap.170, (LC)	Yes
Asian Brown Flycatcher	*Muscicapa dauurica*	N	Common autumn passage migrant and winter visitor to open and closed-canopy woodland areas	Cap.170, (LC)	N/A
Little Grebe	*Tachybaptus ruficollis*	Y	Common all year with higher numbers in winter,	Cap.170, LC, (LC)	Yes

			on ponds and pools primarily in Deep Bay wetland areas		
Grey Heron	*Ardea cinerea*	Y	Common in wetlands and some coastal areas, mainly in the Deep Bay area, present all year with highest numbers in winter and very low numbers in summer	Cap.170, PRC, (LC)	Yes
Purple Heron	*Ardea purpurea*	Y	Uncommon and present all year in the Deep Bay area with peak numbers during migration, 8 counts in 2016	Cap.170, RC, (LC)	N/A
Chinese Pond Heron	*Ardeola bacchus*	Y	Common in wetlands and damp areas, with winter, migrant and breeding populations	Cap.170, PRC, (LC)	Yes
Striated Heron	*Butorides striata*	Y	Locally common summer visitor to the Deep Bay area but more widespread on migration and in winter at scattered coastal and inland sites	Cap.170, LC, (LC)	N/A
Black-crowned Night Heron	*Nycticorax nycticorax*	Y	Common resident and migrant mainly in Deep Bay wetlands and at scattered breeding colonies, mostly around Starling Inlet and Tolo Harbour	Cap.170, LC, (LC)	Yes
Common Kingfisher	*Alcedo atthis*	Y	Common and present all year in wetland areas	Cap.170, (LC)	Yes
Pied Kingfisher	*Ceryle rudis*	Y	Common resident in fishpond and other wetland areas, especially Deep Bay	Cap.170, (LC)	N/A
White-throated Kingfisher	*Halcyon smyrnensis*	Y	Common and present all year, mostly in wetland areas	Cap.170, LC, (LC)	Yes
Barn Swallow	*Hirundo rustica*	N	Abundant passage migrant, common summer	Cap.170, (LC)	Yes

			visitor and uncommon winter visitor		
Black-winged Kite	*Elanus caeruleus*	N	Uncommon visitor to open country throughout the year	Cap.586, Cap.170, LC, (LC), VU	N/A
Black Kite	*Milvus migrans*	N	Abundant, present all year and widespread, with increased numbers in winter between October and March	Cap.586, Cap.170, RC, (LC)	Yes
Asian Koel	*Eudynamys scolopaceus*	N	Common and widespread, recorded in all months though less frequently in winter, from urban and rural areas with trees	Cap.170, (LC)	Yes
Masked Laughingthrush	*Garrulax perspicillatus*	N	Abundant resident in diverse urban and rural lightly-wooded habitats	Cap.170, (LC)	N/A
Azure-winged Magpie	*Cyanopica cyanus*	N	Locally common breeding resident since 2003	Cap.170, (LC)	N/A
Oriental Magpie	*Pica serica*	N	Common resident of open country and urban edge habitats	Cap.170, (LC)	Yes
Red-billed Blue Magpie	*Urocissa erythroryncha*	N	Common resident of closed-canopy shrubland	Cap.170, (LC)	N/A
Scaly-breasted Munia	*Lonchura punctulata*	N	Abundant resident in open-country grassy habitats	Cap.170, (LC)	Yes
Crested Myna	*Acridotheres cristatellus*	N	Abundant resident of lowland habitats including urban areas	Cap.170, (LC)	Yes
Common Myna	*Acridotheres tristis*	N	Locally common resident of open-country areas in the northwest and central NT	Cap.170, (LC)	Yes
Collared Scops Owl	*Otus lettia*	N	Common and widespread resident in lowland areas of closed-canopy shrubland and woodland	Cap.586, Cap.170, (LC)	N/A
Asian Barred Owlet	*Glaucidium cuculoides*	N	Common though locally-distributed resident with most records from forest and open-country	Cap.586, Cap.170, (LC)	N/A

			areas in the north and central NT		
Little Ringed Plover	*Charadrius dubius*	Y	Common and present all year in lowland areas near water, scarce breeder	Cap.170, LC, (LC)	N/A
Yellow-bellied Prinia	*Prinia flaviventris*	N	Abundant resident in a variety of non-woodland habitats	Cap.170, (LC)	Yes
Plain Prinia	*Prinia inornata*	N	Locally common resident in grassy and reed habitats	Cap.170, (LC)	Yes
Oriental Magpie Robin	*Copsychus saularis*	N	Abundant resident in urban and rural areas, including mangrove	Cap.170, (LC)	N/A
Common Sandpiper	*Actitis hypoleucos*	Y	Common and widespread in wetlands, present all year though few in summer	Cap.170, (LC)	Yes
Black-winged Stilt	*Himantopus himantopus*	Y	Common passage migrant and uncommon winter visitor, also found breeding locally	Cap.170, (LC)	Yes
Long-tailed Shrike	*Lanius schach*	N	Common resident in open country habitats	Cap.170, (LC)	Yes
Greater Painted-snipe	*Rostratula benghalensis*	Y	Locally common resident breeding species, in freshwater marsh and wet agricultural areas, 15 recorded this year	Cap.170, LC, (LC)	N/A
Black-collared Starling	*Gracupica nigricollis*	N	Common resident of open-country, village edge and urban habitats	Cap.170, (LC)	Yes
Common Tailorbird	*Orthotomus sutorius*	N	Widespread and common resident in diverse shrubland and wooded habitats	Cap.170, (LC)	N/A
Cinereous Tit	*Parus cinereus*	N	Common resident in open and closed-canopy woodland, shrubland and parkland areas	Cap.170, (LC)	N/A
White Wagtail	*Motacilla alba*	N	A widespread species although most records and high counts from northwest NT	Cap.170, (LC)	Yes

White-breasted Waterhen	*Amaurornis phoenicurus*	Y	Common resident in low-lying, damp areas throughout Hong Kong, probably also with some migrants.	Cap.170, (LC)	Yes

Key:

-Cap. 586: Species under protection of Endangered Species of Animals and Plants Ordinance (Cap. 586)

-Cap. 170: Species under protection of Wild Animals Protection Ordinance (Cap. 170)

-Fellowes et al. (2002): RC=Regional Concern; LC=Local Concern; PRC=Potential Regional Concern;

-IUCN Red List of Threatened Species Status: (LC)=Least Concern; (NT)= Near Threatened

-China Red Data Book Status: VU= Vulnerable

2.7. Reptiles

2.7.1. Four reptile species were recorded in the project area (**Table 8**), Bowring's Gecko, Changeable Lizard, Long-tailed Skink, and Indo-Chinese rat snake (**Figure 3b**). Many other species of reptiles have been recorded from the Mai Po Nature Reserve, and several of these species could occur in the immediate and proximate project area since most species are widely distributed in Hong Kong and are found in degraded habitats, such as in the project area. This is especially true for the snakes that follow small rodent prey, which occur at higher densities close to human habitation. Although the vibrations associated with the excavation could affect the reptiles, it is likely that they will move away from the immediate vicinity during the construction period but will return when the work is completed.

Table 8. List of reptiles expected to occur in the study area. List is derived from the Mai Po Nature Reserve management plan, 2019-2024. The species listed in bold text were recorded from the project area during the surveys.

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION IN HK	CONSERVATION STATUS
Bowring's Gecko	***Hemidactylus bowringii***	Widely distributed throughout Hong Kong.	(LC)
Changeable Lizard	***Calotes versicolor***	Widely distributed throughout Hong Kong.	N/A
Grass Lizard	*Takydromus sexlineatus*	Widely distributed throughout Hong Kong.	(LC)
Chinese Skink	*Plestiodon chinensis*	Widely distributed throughout Hong Kong.	(LC)
Long-tailed Skink	***Eutropis longicaudata***	Widely distributed throughout Hong Kong.	(LC)
Reeve's Smooth skink	*Scincella reevesii*	Widely distributed in woodlands throughout Hong Kong.	N/A
Banded Krait	*Bungarus fasciatus*	Locally restricted in Hong Kong.	RC, (LC), EN
Burmese python	*Python bivittatus*	Widely distributed throughout Hong Kong.	Cap.586, Cap.170, PRC, (VU), CE
Checkered Keelback	*Xenochrophis flavipunctatus*	Widely distributed in the New Territories and Lantau Island.	(LC)
Chinese Cobra	*Naja atra*	Common and widely distributed in Hong Kong.	Cap.586, PRC, (VU), VU
Chinese Water Snake	*Enhydris chinensis*	Locally common, mainly occurs in Deep Bay and central New Territories.	(LC), LC
Common Blind Snake	*Ramphotyphlops braminus*	Widely distributed throughout Hong Kong.	N/A
Common Rat Snake	*Ptyas mucosus*	Widely distributed throughout Hong Kong.	Cap.586, PRC, EN
Copperhead Racer	*Coelognathus radiatus*	Widely distributed throughout Hong Kong.	PRC, (LC), EN
Indo-chinese rat snake	***Ptyas korros***	Widely distributed throughout Hong Kong.	PRC, EN
King Cobra / Hamadryad	*Ophiophagus hannah*	Widely distributed throughout Hong Kong.	Cap.586, PRC, (VU), CE
Mangrove Water Snake	*Enhydris bennettii*	Restricted in distribution in Hong Kong.	LC

Many-banded Krait	*Bungarus multicinctus*	Widely distributed throughout Hong Kong.	PRC, (LC), VU
Taiwan Kukri Snake	*Oligodon formosanus*	Widely distributed throughout Hong Kong.	(LC)
Chinese Soft-shelled Turtle	*Pelodiscus sinensis*	Locally found in reservoirs and fishponds in Deep Bay area.	Cap.170, GC, (VU), VU
Malaysian Box Turtle	*Cuora amboinensis*	Introduced to Hong Kong	Cap.586, (VU)
Red-eared Slider	*Trachemys scripta*	Introduced to Hong Kong	Cap.170, (LC)
Reeve's Turtle	*Mauremys reevesii*	Widespread in the territory. Used to be a common but sightings have been rare.	Cap.586, Cap.170, GC, (EN), CD

Key:

-Cap. 586: Species under protection of Endangered Species of Animals and Plants Ordinance (Cap. 586)

-Cap. 170: Species under protection of Wild Animals Protection Ordinance (Cap. 170)

-Fellowes et al. (2002): RC=Regional Concern; LC=Local Concern; PRC=Potential Regional Concern; GC=Global Concern

-IUCN Red List of Threatened Species Status: (LC)=Least Concern; (NT)= Near Threatened

-China Red Data Book Status: CD= Conservation Dependent; VU=Vulnerable; EN=Endangered; CE= Critically Endangered

2.8. Amphibians

2.8.1. Five amphibian species (four frogs and one toad) were recorded in the Study Area (**Table 9**). Three other frog species have been recorded from Mai Po Nature Reserve (**Table 9**) and can be expected to occur in the project area. All species are common, widespread, and are of Least Concern. Although three records of the Asian Common Toad and one of Günther's Frog have been recorded from 'Developed Areas' all other records are from the wetlands. It is highly unlikely that the project excavation limited to the paved, developed area will affect the amphibian populations. It is highly unlikely that the project excavation limited to the paved, developed area will affect the amphibian populations.

Table 9. List of amphibians expected to occur in the study area. List is derived from the Mai Po Nature Reserve management plan, 2019-2024. The species listed in bold text were recorded from the project area during the surveys.

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION IN HK	CONSERVATION STATUS
Asian Common Toad	***Duttaphrynus melanostictus***	Widely distributed in Hong Kong.	(LC)
Asiatic Painted Frog	***Kaloula pulchra***	Widely distributed in Hong Kong.	(LC)
Günther's Frog	***Hylarana guentheri***	Widely distributed in Hong Kong.	(LC)
Ornate Pigmy Frog	***Microhyla fissipes***	Widely distributed in Hong Kong.	(LC)
Paddy Frog	***Fejervarya limnocharis***	Widely distributed in Hong Kong.	(LC)
Spotted	*Kalophrynus*	Widely distributed from low to moderate	(LC)

Narrow-mouthed Frog	*interlineatus*	altitudes in northern and central New Territories.	
Brown Tree Frog	*Polypedates megacephalus*	Widely distributed in Hong Kong.	(LC)
Chinese Bullfrog	*Hoplobatrachus rugulosus*	Widely distributed in Lantau Island and New Territories.	PRC, (LC)

Key:

-Fellowes et al. (2002): PRC=Potential Regional Concern

-IUCN Red List of Threatened Species Status: (LC)=Least Concern

2.9. Butterflies

2.9.1. A total of 57 species of butterflies (including a complex of small blues that are difficult to identify to species) were recorded from the EEA Study Area (Table 10). Most are common in Hong Kong and widespread across the Territory (AFCD 2017). None are of particular conservation importance, except for two species; Forget-me-not (Catochrysops strabo), which are considered Very Rare in Hong Kong and listed as Species of Conservation Concern (AFCD 2017), and Small Cabbage White (Pieris rapa) which is considered to be Rare. These species were in the wooded area near the G/IC site (Figure 3b). Since the excavation will not remove or impact any vegetation in the wooded area, the works will have no impact on these butterflies.

Table 10. Butterfly species recorded from the study area, and their status in Hong Kong. Information from the Environmental and Ecological Assessment (2019). SMEC. 2019. Environmental and Ecological Assessment. Peter Scott Field Studies Centre Demolition and Rebuild.
Conservation Status based on AFCD database.https://www.afcd.gov.hk/english/conservation/hkbiodiversity/database

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION IN HK	RARITY	CONSERVATION STATUS
Angled Castor	*Ariadne*	Widely distributed throughout Hong Kong	Common	N/A
Blue Tiger	*Tirumala limniace*	Widely distributed throughout Hong Kong	Common	N/A
Blue-spotted Crow	*Euploea midamus*	Widely distributed throughout Hong Kong	Very Common	N/A
Bush Hopper	*Ampittia dioscorides*	Widely distributed in abandoned paddy field throughout Hong Kong	Uncommon	N/A
Chestnut Angle	*Odontoptilum angulatum*	Widely distributed in shrubland and woodland throughout Hong Kong	Common	N/A
Chinese Dart	*Potanthus confucius*	Widely distributed in grassland throughout Hong Kong	Uncommon	N/A
Chinese Peacock	*Papilio bianor*	Widely distributed throughout Hong Kong	Common	N/A
Common Bluebottle	*Graphium sarpedon*	Widely distributed throughout Hong Kong	Very Common	N/A
Common Five-ring	*Ypthima baldus*	Widely distributed in grassland throughout Hong Kong	Very Common	N/A
Common Grass Yellow	*Eurema hecabe*	Widely distributed throughout Hong Kong	Common	N/A
Common Hedge Blue	*Acytolepis puspa*	Widely distributed throughout Hong Kong	Common	N/A
Common Indian Crow	*Euploea core*	Widely distributed throughout Hong Kong	Common	(LC)
Common Jay	*Graphium doson*	Widely distributed throughout Hong Kong	Common	N/A
Common Mapwing	*Cyrestis thyodamas*	Widely distributed in woodland area throughout Hong Kong	Common	N/A
Common Mime	*Chilasa clytia*	Widely distributed throughout Hong Kong	Common	N/A
Common Mormon	*Papilio polytes*	Widely distributed throughout Hong Kong	Very Common	N/A
Common Palmfly	*Elymnias hypermnestra*	Widely distributed in coast and urban parks throughout Hong Kong	Common	N/A
Common Sailer	*Neptis hylas*	Widely distributed throughout Hong Kong	Very Common	N/A
Common Sergeant	*Athyma perius*	Widely distributed throughout Hong Kong	Uncommon	N/A
Common Tiger	*Danaus genutia*	Widely distributed throughout Hong Kong	Common	N/A
Dark-brand Bush Brown	*Mycalesis mineus*	Widely distributed in woodland throughout Hong Kong	Very Common	N/A
Five-dot Sergeant	*Parathyma sulpitia*	Widely distributed in woodland area throughout Hong Kong	Common	N/A
Forget-me-not	***Catochrysops strabo***	**Pui O, Tai Po Kau, Fung Yuen, Shing Mun, Sha Lo Wan**	**Very Rare**	N/A
Formosan Swift	*Borbo cinnara*	Widely distributed in open grassland and abandoned field throughout Hong Kong	Common	N/A
Glassy Tiger	*Parantica aglea*	Widely distributed throughout Hong Kong	Common	N/A
Great Egg-fly	*Hypolimnas bolina*	Widely distributed throughout Hong Kong	Common	N/A
Great Mormon	*Papilio memnon*	Widely distributed throughout Hong Kong	Very Common	N/A
Great Orange Tip	*Hebomoia glaucippe*	Widely distributed throughout Hong Kong	Common	N/A

Greenish Palm Dart	*Telicota ancilla*	Widely distributed in grassland and shrubland throughout Hong Kong	Uncommon	N/A
Grey Pansy	*Junonia atlites*	Widely distributed in abandoned grassland and abandoned agricultural field throughout Hong Kong	Common	N/A
Indian Cabbage White	*Pieris canidia*	Widely distributed throughout Hong Kong	Very Common	N/A
Large Faun	*Faunis eumeus*	Widely distributed in woodland throughout Hong Kong	Common	N/A
Lemon Emigrant	*Catopsilia pomona*	Widely distributed throughout Hong Kong	Common	N/A
Lime Butterfly	*Papilio demoleus*	Widely distributed throughout Hong Kong	Common	N/A
Long-tailed Blue	*Lampides boeticus*	Widely distributed in abandoned field throughout Hong Kong	Common	N/A
Mottled Emigrant	*Catopsilia pyranthe*	Widely distributed throughout Hong Kong	Very Common	N/A
Pale Grass Blue	*Pseudozizeeria maha*	Widely distributed throughout Hong Kong	Very Common	N/A
Paris Peacock	*Papilio paris*	Widely distributed throughout Hong Kong	Very Common	N/A
Plain Tiger	*Danaus chrysippus*	Lung Kwu Tan, Tong Fuk, Tai Ho, Tung Chung, Pak Tam Chung	Uncommon	N/A
Plum Judy	*Abisara echerius*	Widely distributed throughout Hong Kong	Very Common	N/A
Purple Sapphire	*Heliophorus epicles*	Widely distributed throughout Hong Kong	Common	N/A
Red Helen	*Papilio helenus*	Widely distributed throughout Hong Kong	Very Common	N/A
Red-base Jezebel	*Delias pasithoe*	Widely distributed throughout Hong Kong	Very Common	N/A
Red-ring Skirt	*Hestina assimilis*	Widely distributed in woodland throughout Hong Kong	Common	N/A
Rustic	*Cupha erymanthis*	Widely distributed throughout Hong Kong	Very Common	N/A
Short-banded Sailer	*Phaedyma columella*	Widely distributed in woodland area throughout Hong Kong	Common	N/A
Silver Streak Blue	*Iraota timoleon*	Common and widespread throughout Hong Kong	Uncommon	N/A
Small Blues	*N/A*	N/A	N/A	N/A
Small Cabbage White	*Pieris rapa*	**Shep Mun Kap, Fan Lau, Ngong Ping, Kam Tin, Ho Chung, Luk Keng, Tuen Mun Ash Lagoon**	**Rare**	N/A
South China Bush Brown	*Mycalesis zonata*	Widely distributed in woodland throughout Hong Kong	Common	N/A
Spangle	*Papilio protenor*	Widely distributed throughout Hong Kong	Very Common	N/A
Straight Five-ring	*Ypthima lisandra*	Widely distributed throughout Hong Kong.	Common	N/A
Tailed Cupid	*Everes lacturnus*	Widely distributed throughout Hong Kong	Common	N/A
Tailed Jay	*Graphium agamemnon*	Widely distributed throughout Hong Kong	Common	N/A
Tawny Rajah	*Charaxes bernardus*	Widely distributed throughout Hong Kong	Common	N/A
Three-spot Grass Yellow	*Eurema blanda*	Widely distributed throughout Hong Kong	Common	N/A
Transparent 6-line Blue	*Nacaduba kurava*	Widely distributed throughout Hong Kong	Common	N/A

Key:
-IUCN Red List of Threatened Species Status: (LC)=Least Concern

2.10. Dragonflies

2.10.1. A total of 10 dragonfly species were recorded from the commercial fishponds and gei wai in the EEA study area and the 5 monthly observations (**Table 11**). All of the recorded species are either abundant or common in Hong Kong (AFCD 2017). None are of particular conservation importance, except for Scarlet Basker (*Urothemis signata signata*), which was considered to be of Local Concern but was recorded outside the project area.

Table 11. Dragonflies recorded from the EEA and WWF-HK's monthly observation between 2020 and 2021

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION IN HK	RARITY	CONSERVATION STATUS	IDENTIFIED IN THE 5 MONTHLY OBSERVATIONS CARRIED OUT BY WWF-HK
Asian Amberwing	*Brachythemis contaminata*	Widely distribute in weedy ponds and sluggish streams	Abundant	(LC)	Yes
Crimson Darter	*Crocothemis servilia*	Widely distribute in cultivated areas, ponds and marshes throughout the New Territories	Abundant	(LC)	Yes
Pied Percher	*Neurothemis tullia*	Widely distribute in weedy ponds	Abundant	(LC)	Yes
Common Flangetail	*Ictinogomphus pertinax*	Widely distribute in ponds throughout Hong Kong	Common	(LC)	Yes
Green Skimmer	*Orthetrum sabina*	Widely distribute in all wetland habitats throughout Hong Kong	Abundant	(LC)	Yes
Pied Skimmer	*Pseudothemis zonata*	Widely distribute in ponds throughout Hong Kong	Common	(LC)	Yes
Wandering Glider	*Pantala flavescens*	Widely distribute in all wetland habitats throughout Hong Kong	Abundant	(LC)	Yes
Saddlebag Glider	*Tramea virginia*	Widely distribute in ponds throughout Hong Kong	Abundant	(LC)	Yes
Variegated Flutterer	*Rhyothemis variegata*	Widely distribute in marshes, ponds and tanks throughout Hong Kong	Common	(LC)	Yes
Scarlet Basker	*Urothemis signata*	Common in areas containing abandoned fish ponds throughout Hong Kong	Common	LC, (LC)	N/A

Key:

-Fellowes et al. (2002): LC=Local Concern

-IUCN Red List of Threatened Species Status: (LC)=Least Concern

2.11. Fishes

2.11.1. Fish surveys are limited. The species recorded (**Table 12**) suggests that the surveys were conducted in the streams and brackish water *gei wai*, rather than the freshwater commercial fishponds. The freshwater ponds immediately adjacent to the proposed excavation (**Figure 2a**) are used for commercial fisheries. However, since there is a small extent of marsh and stream mid-way along the water supply pipeline (**Figure 2a**). And care should still be taken to ensure there are no impact from soil, oil, and other pollutants from spilling or being washed into this habitat.

Table 12. Fishes recorded from wetlands in the Mai Po Brackish Marsh/ Waterway area

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION IN HK	CONSERVATION STATUS
Mud Sleeper	*Butis koilomatodon*	Recorded in estuary of Lantau.	N/A
N/A	*Wuhanlinigobius polylepis*	N/A	N/A
Speckled Goby	*Redigobius bikolanus*	N/A	(LC)
N/A	*Gobiopterus macrolepis*	N/A	EN
N/A	*Elops sp.*	N/A	N/A
N/A	*Pseudogobius taijiangensis*	N/A	N/A
Javanese Fatnose Goby	*Pseudogobius javanicus*	A widespread species occurring in estuaries and coastal waters of Hong Kong.	N/A
Yellowstripe Goby	*Mugilogobius chulae*	Records from coastal environmental throughout Hong Kong.	(LC)
Four-eyeed Sleeper	*Bostrychus sinensis*	Records from a few streams in Sai Kung and on Lantau Island.	(LC)

Key:

-IUCN Red List of Threatened Species Status: (LC)=Least Concern

-China Species Red List: EN= Endangered

3. Potential environmental Impact

3.1.1. Potential environmental impacts from the construction may include noise, air, and water pollution. The Environmental and Ecological Assessment (SMEC 2019) has assessed these impacts and proposed appropriate mitigations.

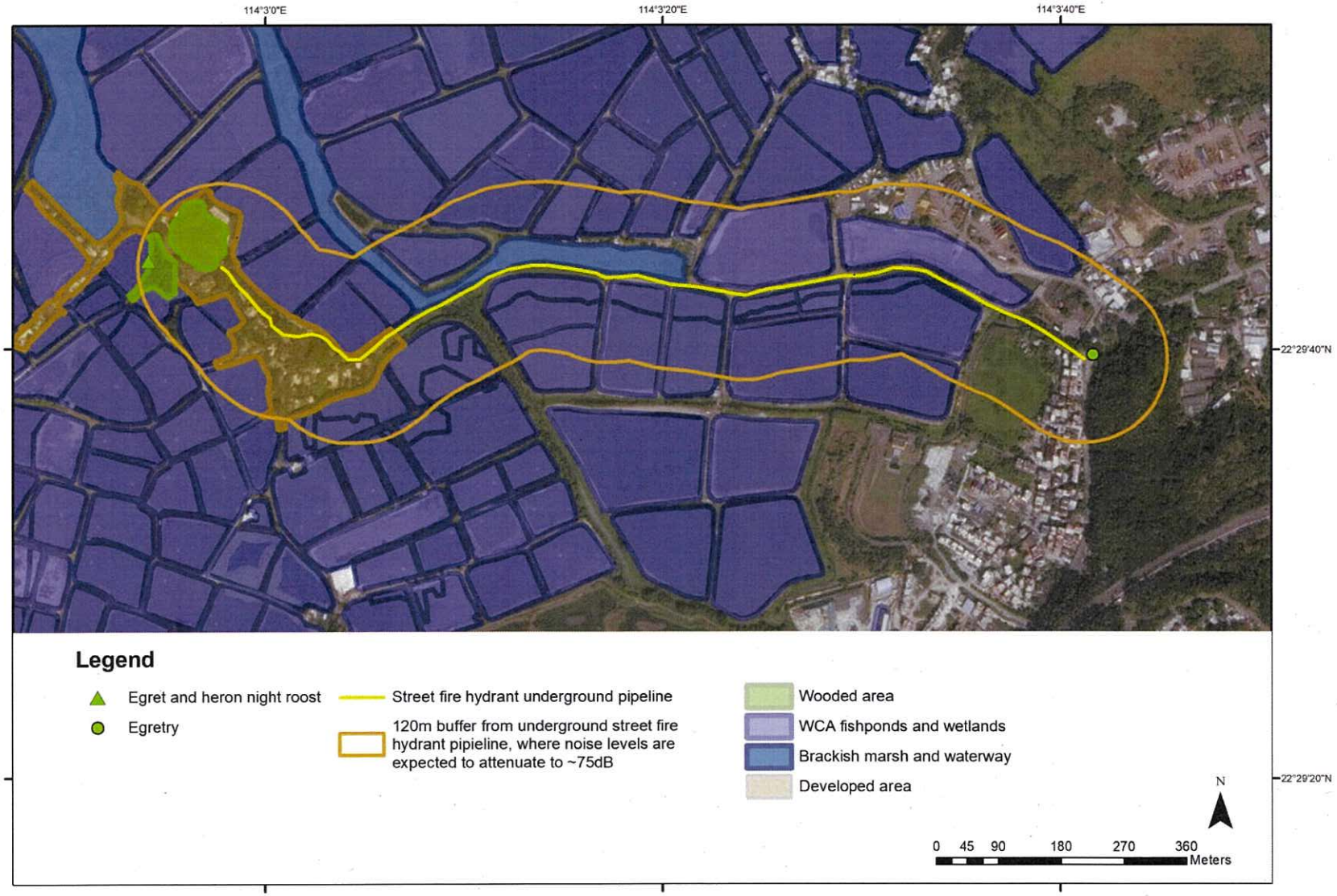
3.2. Noise

3.2.1. The model for noise monitoring and mitigation conducted under the Environmental and Ecological Assessment (SMEC 2019) shows that the noise levels from construction can attenuate from the 86 dB in the core of the construction site to about 75 dB(A) within 120 m in the northern sections of the study area even under unmitigated conditions (**Figure 4a**). This analysis was based on noise emissions from heavy machinery, whereas the excavation for the pipe can be done by lighter, QPME (Quality Powered Mechanical Equipment) excavators, which are notably quieter.

3.2.2. The commercial fishponds, brackish marshes, natural watercourses and wooded area immediately adjacent to the construction and excavation of proposed pipeline will encounter some noise levels during the day when construction activity happens, but these areas are already impacted by noise from anthropogenic activity, including vehicular traffic (SMEC 2019). Proposed mitigation measures such as the use of QPME, the limited extent of the works, the restriction of works hours, etc., will be adopted during construction to mitigate potential impacts to the habitat near the commercial fishponds/waterway along the proposed underground water pipe. In view of the application of noise mitigation measures and construction works will be carried out between 0800 and 1700 only, adverse noise impact to the habitats is unlikely.

In the event of heavy rains or a typhoon, adequate precautions will be carried out to prevent piled soil from washing into the watercourses and to ensure that no additional pollution loading into the Deep Bay Area. The proposed works site inside or in the proximity of nearby habitats should be temporarily isolated, such as by placing of sandbags. In addition, excavated material should be covered up by tarpaulin to avoid being washed into nearby habitats by rain. In addition, the applicant will closely monitor the construction work to ensure that no adverse impact will be caused to the nearby habitats.

Figure 4a: Proposed street fire hydrant underground pipeline's 120m-buffer for attenuation of noise level to 75dB(A)



3.3. Air Pollution

3.3.1. Mitigation measures to ensure air quality is maintained during the PSFSC rebuild according to acceptable and permissible levels will also be applied to the construction of the FS pipeline along Tam Kon Chau Road.

3.3.2. The assessment of air quality during demolition and rebuild of PSFSC showed generally low concentrations of RSP and FSP off-site during the works, making it unlikely to cause any ecological impacts from dust. Such dust emissions from the excavations will be expected to be less than from the demolition of the building, which has now been completed.

3.3.3. Good practice and mitigation measures to be implemented during the demolition and construction stages of the PSFSC are relevant to this FS pipeline excavation project, and include the following (SMEC 2019):

- Regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.
- Frequent watering for particularly dusty areas and areas close to ASRs.
- Open stockpiles shall be avoided or covered.
- Tarpaulin covering of all dusty vehicle loads transported to and from the Site.

3.4. Water pollution

3.4.1. Water quality impacts from the construction site could arise from the following (SMEC 2019):

- General construction activities.
- Construction site runoff.
- Construction works near waterbodies.
- Runoff and erosion of exposed bare soil and earth, drainage channel, earth working area and stockpiles.
- Accidental spillage.
- Sewage effluent from construction workforce.

4. Mitigation Measures

4.1. Avoidance

4.1.1. All proposed works are based on the WSD's and FSD's technical specifications. To minimize the impact to the ecology and the environment, and to ensure no disturbance to the wildlife that uses the Conservation Area, the scale and extent of excavation will be kept to the bare minimum.

4.1.2. The proposed construction works, include excavation for the pipe, and back-filling of land, and laying of the proposed underground water pipe. The extent of works area will be carried out along an existing concrete-paved road in Government land. Thus, there will be no loss of wetland area, and no impact on the ecology and function of the wetlands in this part of the Wetland Conservation Area.

4.1.3. The fire hydrant pipeline will be installed underground to avoid any adverse impact to visual quality of the area and landscape.

4.2. Minimisation

4.2.1. The proposed hydrant and underground water supply pipe project is a well-thought out proposal in terms of the design, scale and extent of work, and construction method, to ensure that no adverse impact will be caused to the Wetland Conservation Area (WCA) and its biodiversity.

The proposed underground water pipe associated with the upgrading of a street fire hydrant will be in compliance with the requirements of FSD and WSD, and other relevant statutory requirements to ensure no adverse impact will be caused to the surrounding areas.

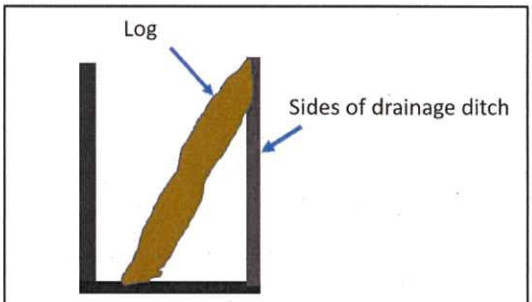
The construction work will be carried out in 4-5 months after obtaining the excavation permit. It will be carried out in 5-6 sections, in which respective excavation work and laying of underground water pipe will be carried out by sections. The construction work will be carried out in summer non-migratory season (i.e., April to October).

Excavation permit will be obtained from DLO/YL prior to commencement of the excavation works on public roads.

4.2.2. All relevant statutory requirements for the construction and implementation of the proposed hydrant and underground water supply pipe project will be complied with. Implementation of mitigation measures, such as covering open/exposed ground, covered construction C&D material storage areas, and provision of waterproof general waste receptacles etc. will be adopted. In addition, the Works Contractor shall follow good site practice and be responsible for the design construction, operation and maintenance of applicable mitigation measures specified in ProPECC PN 1/94 for construction site drainage during construction. Since location, construction methods and approaches for the proposed use have been carefully considered to prevent/minimize any potential impacts to wildlife and the surrounding environment, no adverse impact on visual quality, drainage, environment and ecology is envisaged.

4.3. Mitigation for Mammals

4.3.1. The contractor can provide a 'ladder-like structure' from the bottom of the excavated ditch to the top so that any animals (especially mammals) that may fall in, or purposefully enter in search of food, can climb out to safely. Hence, a simple structure will be provided, and it will be like a log with bark leaning against the side of the excavation so that animals can use to crawl out, should they fall in. The contractor will check the excavation trench each day, prior to commencing work, to ensure that no mammals, reptiles or amphibians have fallen into it and are unable to get out. If any are present, they should be netted out prior to commencing work. Below please find the indicative diagram showing the "Ladder-like structure" for reference.



Cross section of drainage ditch with log leaned against the side (of the ditch) to form a ramp for animals to climb out. A log with bark intact will allow better grip, allowing animals to climb out more easily.

4.4. Mitigation for Birds

4.4.1. According to Mai Po Nature Reserve field staff the birds commonly found in the area are not disturbed by human presence, and birds such as egrets may actually follow the diggers, in search of food that is unearthed. Surveys indicate that even with the noise and activity from construction in the Field Studies Centre many birds—from waterbirds such as Grey herons, egrets, cormorants, and grebes to passerines--are still active with no indication of being disturbed and no mitigation measures are necessary. The works can be scheduled in the day time starting at least one hour after sunrise and end one hour before sunset.

To avoid disturbance to the night roosting ardeid next to PSFSC, construction work will be carried out from 0800 to 1700, which is at least one hour after sunrise and over one hour before sunset in summer non-migratory season.

In view of the fact that there is an active egretry within the pipeline alignment in the "Village Type Development" zone ("V")/ near the road junction at Tam Kon Chau Road/ Castle Peak Road- Mai Po Section, no work will be carried out from March until the breeding activity is over at this location. Construction works will only be commenced after all the young ardeids leave the egretry in August (need to confirm prior to commencement of works).

Close monitoring will be carried out by the applicant, and agreement from AFCD will be sought on applicant's observation/evidence that egrets have left prior to the commencement of the construction work in the portion near the above-mentioned egretry.

4.5. Mitigation for Reptiles

4.5.1. The contractor will check the excavation trench each day, prior to commencing work, to ensure that no mammals, reptiles or amphibians have fallen into it and are unable to get out. If any are present, they should be netted out prior to commencing work.

4.6. Mitigation for Amphibians

4.6.1. It is highly unlikely that the project excavation limited to the paved, developed area will affect the amphibian populations. The contractor will check the excavation trench each day, prior to commencing work, to ensure that no mammals, reptiles or amphibians have fallen into it and are unable to get out. If any are present, they should be netted out prior to commencing work.

4.7. Mitigation for Butterflies

4.7.1. Since the excavation will not remove or impact any vegetation in the wooded area, the works will have no impact on these butterflies. Given that there is already relatively heavy noise and human activity along the road, any additional noise and human activity resulting from the excavation is not expected to affect these butterflies. Moreover, although these species are considered rare in Hong Kong, they have extensive global range distributions.

4.8. Mitigation for dragonflies

4.8.1. **Table 6** provides a list of the dragonflies that were recorded from the commercial fishponds immediately around the excavation site for the pipeline, and omits the species that were found in the gei wai. The gei wai are over 150 m at the closest point of excavation work, and this work will not pose any significant levels of disturbance to them. Any noise levels from the excavation project that reach the gei wai should be well within the levels experienced from the heavier machinery that are used to periodically excavate gei wai as part of regularly Mai Po habitat management. Moreover, there will be no conversion of wetland and pond habitat, including of the emergent vegetation along the pond edges or bunds. No deterioration of water quality is expected, especially with measures to prevent soil spillover into the ponds that could affect the nymphs, with appropriate actions (described later) to be taken to control any such eventuality.

4.9. Mitigation for Fish

4.9.1. The only potential impact from the excavation work is excavated soil temporarily piled along the site being washed or falling into the ponds. However, mitigations such as covering the soil piles and removing excess rubble and soil will avoid such impacts. Because the excavation machinery will be QPME excavators, which are considered environmentally safe, there will be little risk from oil and grease pollution.

4.10. Mitigation for Noise

4.10.1. Extrapolating this model to the hydrant and pipeline construction site justifies a 100 m buffer for appropriate noise attenuation. We do acknowledge that much of the habitat along either side of Tam Kon Chau Road is open ground fishponds, and sound can carry further. But these habitats are mostly commercial fishponds that encounter regular disturbance from human activity and vehicle traffic along the road. Extrapolating this model to the pipeline construction site can justify a 100 m radius for appropriate noise attenuation. Therefore, it is reasonable to:

- set the impact zone from noise caused by machinery during excavation and building at 100 m,
- set the direct impact from the presence of people and related activity at 25 m, a reasonable distance based on flight distances of wildlife in the area that is already habituated to human presence (Figure 2a).
- Adoption of other mitigation measures such as the use of QPME, the limited extent of the works, the restriction of works hours, close monitoring the construction work by the applicant to ensure that no adverse impact will be caused to the surrounding habitats.

4.10.2. The proposed underground water pipe associated with the upgrading of a street fire hydrant will be in compliance with the requirements of FSD and WSD, and other relevant statutory requirements to ensure no adverse impact will be caused to the surrounding areas.

The construction work will be carried out in 4-5 months after obtaining the excavation permit. It will be carried out in 5-6 sections, in which respective excavation work and laying of underground water pipe will be carried out by sections. The construction work will be carried out in summer non-migratory season.

Excavation permit will be obtained from DLO/YL prior to commencement of the excavation works on public roads.

4.11. Mitigation for Air

4.11.1. Good practice and mitigation measures to be implemented during the demolition and construction stages of the PSFSC, and relevant to this project, includes the following (SMEC 2019):

- Regular watering , as necessary , to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.
- Frequent watering , as necessary , for particularly dusty areas and areas close to ASRs.
- Open stockpiles shall be avoided or covered.
- Tarpaulin covering of all dusty vehicle loads transported to and from the Site.

4.12. Mitigation for Water

4.12.1. Other types and sources of water pollution from the PSFSC site have also been identified in the Environmental and Ecological Assessment (SMEC 2019). In the event of heavy rains or a typhoon, adequate precautions will be carried out to prevent piled soil from washing into the watercourses and to ensure that no additional pollution loading into the Deep Bay Area. The proposed works site inside or in the proximity of nearby habitats should be temporarily isolated, such as by placing of sandbags. In addition, excavated material should be covered up by tarpaulin to avoid being washed into nearby habitats by rain.

These mitigations will also be applied to the FS pipeline construction to ensure there is no pollution of the fishponds and the natural watercourses. These will include covering the excavated piles to prevent them from dispersing, collapsing, and getting washed into the ponds or the waterway.

4.12.2. The immediate area that can be affected is shown by the 'environmental monitoring area from fire hydrant pipeline construction' demarcated by the red polygon in **Figure 2a.** This area should be monitored each day to ensure that no excavated material is entering them. In the event of heavy rains or a typhoon, adequate precautions should be taken to prevent piled soil does not get washed into the fishponds and watercourses.

5. Summary

- The Peter Scott Field Studies Centre (PSFSC) will be upgraded to a state-of-the art education and training facility to meet the needs of a 21st Century conservation field centre.
- To ensure stringent conformity to environmental safeguards during construction and subsequent operation, an Ecolia has been developed with appropriate mitigations to ensure that any impacts to the environment and ecology of the surrounding areas are minimal.
- The FS pipeline excavation in Tam Kon Chau Road will include upgrading the existing street fire hydrant and the water provisioning pipeline extending from WSD's water main at Castle Peak Road – Mai Po section, along Tam Kon Chau Road to PSFSC (**Figure 2a**) to meet the requirements of the Fire Services Department (FSD) and the Water Supplies Department (WSD).

- The new street fire hydrant will have a water pipe with adequate water pressure and will comply with current FSI Code. The water pipe will be 150mm in diameter, and the proposed alignment is about 1,500m long.
- The excavation area will be 0.6m wide and 1,500m long, and about 1.0m deep. Upon the installation of the proposed facilities, the water pipe will be covered with the original material type.
- The excavation is in Tam Kon Chau road is outside the Mai Po Nature Reserve and in the WCA areas are already impacted by noise from anthropogenic activity, including vehicular traffic (SMEC 2019), and the fauna will already be habituated. Mai Po Reserve is not impacted and remains an important re-fueling stop and a wintering home for hundreds of thousands of migratory waterbirds that use East Asian-Australasian Flyway. It is also a refuge for other non-migratory, wetland-associated biodiversity of Hong Kong.
- To minimize the impact to the ecology and the environment of Mai Po, the construction of the fire hydrant pipeline will follow stringent protocols and mitigations. All construction works will be completed outside the bird migratory season (i.e., until October 2021). If the works cannot be completed in 2021, then the construction work for the portion in "CA" zone will be done in April to June 2022 and the portion in "V" zone will be done between August and October 2022, depending of the breeding activity of ardeids at the Mai Po Village egretry. Construction works near the ardeids night roose near PSFSC will also cease one hour before sunset.
- An Environmental and Ecological Assessment prepared in 2019 (SMEC 2019) for the rebuild of the PSFSC included a survey of flora and fauna in this study area.
- Almost all of the species recorded—or expected to occur (based on other surveys from MPNR)—in the project area are common, widespread in Hong Kong, and are habituated to relatively high levels of anthropogenic disturbances.
- Based on knowledge of the ecology and behaviour of the species in the project area, this analysis sets the impact zone from noise and other anthropogenic disturbances caused by the excavation at 100 m; a distance considered adequate based on: a) the existing anthropogenic disturbances; b) ecology and habituation of species, which are all widespread, common, and live close or in human habitation; and c) that none of the faunal species in the major habitats are either territorial or highly philopatric to that small area of impact.
- The ponds adjacent to the project area and marsh/natural water courses are identified as an area of potential direct impact from pollution by soil and rubble that could spillover or get washed into them.
- Because the excavation will be along a paved area, there will be no impact on vegetation and floral species.

However, the following practices are suggested during construction:

- Contractor shall follow good site practice and be responsible for the design construction, operation and maintenance of applicable mitigation measures specified in ProPECC PN 1/94 for construction site drainage during construction.
- Good site practice in line with EPD's requirements will be implemented during construction.
- The recommended use of QPME excavators can minimize the noise levels.

- Provide a 'ladder-like structure' from the bottom of the section of excavated ditch to the top so that any animals (especially mammals) that may fall in, or purposefully enter in search of food, can climb out to safety.
- Check the excavation trench each day, prior to commencing work, to ensure that no reptiles or amphibians have fallen into it and are unable to get out. If any are present, they should be netted out prior to commencing work.
- Ensure that all soil from the excavation piled along the construction site is covered to prevent being washed away or falling into the ponds, especially during rains.

6. References

Dudgeon D, RT Corlett. 2004. The ecology and biodiversity of Hong Kong. Hong Kong: Joint Publishing.

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Wu, J., Wang, J., Zhu, Y., Bu, X., Xiang, R., Lu, Q., Cui, S., Hao, Y., Sheng, Y. and Meng, X., 2020. Summer habitat selection and impacts of human disturbance on leopard cats (Prionailurus bengalensis). Ecosystem Health and Sustainability, p.1856630.

WWF 2019. Mai Po Nature Reserve Management Plan: 2019-2024.

PlanArch Consultants Ltd.
建港規劃顧問有限公司

Kowloon, Hong Kong.
Tel : (852)
Fax: (852)
E-mail:

TPB Ref.: A/YL-MP/309
Our Ref.: pa/yl.mp/1608552

By Post and Fax (2877 0245)

Secretary
Town Planning Board
15/F., North Point Government Offices
No. 333, Java Road
North Point, Hong Kong
(Attn.: Mr Raymond KAN)

9 September 2021

Dear Sir,

S16 Application for Proposed Underground Water Pipe associated with Upgrading of a Street Fire Hydrant, and Excavation and Back-filling of Land on Government Land along Tam Kon Chau Road
DD101, Mai Po, Yuen Long

We refer to the F.I. submission dated 20 August 2021 and the subsequent comments received from AFCD.

Comments from AFCD are noted, and we would like to clarify the content of Section 1.1.1 and Table 7 in the updated Ecological Impact Assessment report in the 20 August 2021 F.I. submission, with the following updated text (underlined for easy reference) based on AFCD's comments:

a) Section 1.1.1

The 4th paragraph of Section 1.1.1 in the submitted report,

"However, as mentioned in the above paragraph that Tam Kong Chau Road is a paved rural vehicular road frequently used the public, therefore the ecological value of the project site and its vicinity is relatively low."

should read:

"It is noted that the project site is within the Wetland Conservation Area. However, as mentioned in the above paragraph, Tam Kong Chau Road is a paved rural vehicular road frequently used by the public."

b) Updated information on Black-winged Stilts in Table 7

COMMON NAME	SCIENTIFIC NAME	WETLAND DEPENDENT?	DISTRIBUTION IN HK	CONSERVATION STATUS	IDENTIFIED IN THE 5 MONTHLY OBSERVATIONS CARRIED OUT BY WWF-HK
Black-winged Stilt	*Himantopus himantopus*	Y	Common passage migrant and uncommon winter visitor, also found breeding locally	Cap.170, RC, (LC)	Yes

The above information serves as technical clarification under the section 5(b) of TPB Guideline 32, and we would like to seek an exemption from publication. In case you decide that the above information is accepted but not exempted from publication, we would like to proceed with the application with the further information.

Should you have any questions, please feel free to contact the undersigned.

Thank you for your kind attention.

Yours faithfully,
For and on behalf of
PlanArch Consultants Ltd.

Betty S. F. Ho

cc. Alice Cheung DPO/FLSSYLE Email: ayycheung@pland.gov.hk

Previous s.16 Application at the Application Site

No.	Application No.	Proposed Use(s)/Development(s)	Date of Consideration (RNTPC/TPB)	Rejection Reason(s)
1.	A/DPA/YL-MP/31	Residential Development	15.7.1994 Rejected by RNTPC	(1) to (11)

Rejection Reasons

(1) The proposed residential development is not in line with the planning intention for the area on the approved Mai Po and Fairview Park Development Permission Area Plan which is primarily to restrict developments to agricultural and recreational uses only.

(2) Falling within Deep Bay Buffer Zone 2, the proposed residential development cannot meet the Board's Guidelines on Application for Developments within Deep Bay Buffer Zones in that there is no sufficient information in the submission to demonstrate that the proposed development will have insignificant impacts on the environmental, ecology, traffic, sewerage and drainage in the area including Mai Po Nature Reserve and Inner Deep Bay Area.

(3) The proposed development with building height up to 4-storey over carports is not in line with the low-density residential development in rural area.

(4) The ecological assessment and various wildlife habitat proposals have not demonstrated that the proposed development will have insignificant adverse impacts on the area.

(5) Insufficient information has been provided in the submission to demonstrate that the proposed development will not have adverse impact on the water quality of the area.

(6) Inadequate information regarding the construction and traffic noise impact and noise mitigation measures have been provided in the submission to demonstrate that it will have minimal adverse impact.

(7) No drainage impact assessment has been included in the submission to assess the impacts arising from the proposed development on the nearby areas.

(8) The proposed development will encroach upon the drainage and flood protection works to be carried out by Government in the vicinity of the site and will thus affect their implementation.

(9) Insufficient information has been included in the traffic impact assessment in the submission to demonstrate that the proposed development will have insignificant traffic impacts on the area.

(10) Approval of the proposed development will set an undesirable precedent for unco-ordinated conservation proposals leading to an eventual fragmentation of the natural habitat within area in the Buffer Zone.

(11) The feasibility of the proposed funding/management arrangement for maintaining the proposed off-site habitat creation area is uncertain.

Appendix III of RNTPC
Paper No. A/YL-MP/309

Similar s.16 Applications within the "Conservation Area" and Same "Village Type Development" Zone on the Approved Mai Po and Fairview Park OZP No. S/YL-MP/6

No.	Application No.	Zoning	Proposed Use(s)/Development(s)	Date of Consideration (RNTPC/TPB)
1.	A/YL-MP/18	CA	Installation of Pipe	14.3.1997 Approved by RNTPC

元朗區議會
YUEN LONG DISTRICT COUNCIL

關於規劃申請（編號A/YL-MP/309）反對意見信

敬啟者：

本人對此申請持反對意見。原因是此申請地段是村民的鄉村路段，並有大型車輛行經此路。而規劃申請中並沒詳細說明是何公共事業設施裝置，目的性含糊不清。而所謂的公共設施，為何沒有提供予練板村（合盛圍）？還有的是擔竿洲近圍網位置尚有多戶村民都沒有什麼公共設施的裝置。

何謂自然保育區？世界自然基金會可以改變自然，其他的村民就要享受自然。

故此本人反對上述申請！

此致

城規會
秘書處

簽署：

元朗區議員 文富穩 BBS
2021年6月16日

RECEIVED
16 JUN 2021
Town Planning Board

5-2

致城市規劃委員會秘書：
專人送遞或郵遞:香港北角渣華道 333 號北角政府合署 15 樓
傳真 : 2877 0245 或 2522 8426
電郵: tpbpd@pland.gov.hk

To : Secretary, Town Planning Board
By hand or post : 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong
By Fax : 2877 0245 or 2522 8426
By e-mail : tpbpd@pland.gov.hk

有關的規劃申請編號 The application no. to which the comment relates
A/YL-MP/309

意見詳情 (如有需要，請另頁說明)
Details of the Comment (use separate sheet if necessary)

本村代表十分支持申請人在米埔担竿洲路 DD101 政府土地申請(合用臨管)和相關填土及挖土工程。但本人亦提出意見原因相關工程涉及本村風水問題，希望相關工程永建/動工前，請預先做了拜神儀式，祈求平安。

「提意見人」姓名/名稱 Name of person/company making this comment _____

簽署 Signature 文貴錦 日期 Date 21/06/2021

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21 JUN 2021
Town Planning Board

5-3

A/YL-MP/309

上述工程早前已經對本村村民及觀鳥人士出入做成很大危險及不方便。

該工程早於數月前由米埔自然保護區內唯一向外的一段狹窄通道進行挖工程，因為該唯一通道只有行車路沒有行人路，觀鳥人士更作該唯一通道也是行人路，時常導致人車爭路的危險一面，更對本村居民車輛出入做成極大不方便。

米埔自然保護區發展前應該首要處理行人通道及交通安全設施。

本村居民全面反對上述 A/YL-MP/309 工程。

2021 年 6 月 23 日

5-4

長春社 Since1988
The Conservancy Association
會址: 香港新界葵涌貨櫃碼頭路 77-81 號 Magnet Place 一期 13 樓 1305-6 室
電話 Tel.:(852)2728 6781 傳真 Fax.:(852)2728 5538
電子郵件 E-mail:cahk@cahk.org.hk
Add.: Units 1305-6, 13/F, Tower 1, Magnet Place, 77-81 Container Port Road, Kwai Chung, New Territories, H.K.
網址 Website:www.cahk.org.hk

29th June 2021

Town Planning Board
15/F North Point Government Offices
333 Java Road
North Point
Hong Kong

By e-mail: tpbpd@pland.gov.hk

Dear Sir/Madam,

RE: Comments on the Section 16 Application No. A/YL-MP/309

The Conservancy Association (CA) considers that Mai Po Ramsar Site is not only within Wetland Conservation Area (WCA) under Town Planning Board Guideline No. 12C, but also an internationally recognized wetland. Therefore, any works within the area should be strictly evaluated. However, we are in reservation of the proposed work in this stage, as we note that various inadequacies in the Ecological Impact Assessment (EcoIA) have not been clearly clarified and addressed. Further information should be included in this application.

1. Inadequacies in habitat map

Habitat types in Figure 2 and 3 of the EcoIA are inconsistent and we feel hard to follow. For example, brackish marsh and waterways are combined in one single habitat in Figure 2, but they are separated in Figure 3. Another inconsistency would be "waterways" and "natural watercourse" used in Figure 2 and 3 respectively. Species of conservation importance in Figure 2 and 3 are also different. Such presentation would greatly affect identification and evaluation of ecological impact brought by the proposed work.

For Figure 3, we have to highlight that the habitat map merely covers 500m zone of Peter Scott Field Studies Centre (PSFSC) and it would definitely excluded part of the fire hydrant pipeline. Its proposed alignment is also missing in the habitat map.

長春社 Since1968
The Conservancy Association
會址: 香港新界葵涌貨櫃碼頭路 77-81 號 Magnet Place 一期 13 樓 1305-6 室
電話 Tel.:(852)2728 6781 傳真 Fax.:(852)2728 5538
電子郵件 E-mail:cahk@cahk.org.hk
Add.: Units 1305-6, 13/F, Tower 1, Magnet Place, 77-81 Container Port Road, Kwai Chung, New Territories, H.K.
網址 Website:www.cahk.org.hk

of actually did not cover the entire study area of fire hydrant pipeline.

We suggest that a comprehensive habitat map should be prepared in the EcoIA.

2. Inadequate assessment on potential environmental impacts

It seems that the EcoIA is just extracting all results from the past EEA but there were no additional survey or verification of the past assessment results. From the part "Sequence of Works" (Section A.1.10) in EEA, however, we cannot find any installation works of public fire hydrant. Most of the evaluation in this EcoIA, therefore, would be irrelevant to a certain extent. Even the EcoIA has come across potential impacts brought by the excavation work of fire hydrant pipeline, they are not quite detailed. Besides, despite provision of mitigation measures (as stated in the Planning Statement), it is still hard to evaluate how effective those mitigation measures would be without a proper environmental assessment.

We worry that all potential environmental impacts caused by the work during construction and operation phase, such as water quality, noise and ecology, indeed have not been fully addressed in this stage.

While we suggest that the project proponent should identify clearly potential environmental impacts during construction and operation phase, here we also wish the project proponent to clarify some of the issues:

i. As Deep Bay is an ecological sensitive area, a "Zero Discharge Policy" for Deep Bay has been implemented in Deep Bay catchment. Please specify how the proposed work fulfills "Zero Discharge Policy" for Deep Bay during construction and operation phase.
ii. Figure 2 of the EcoIA stated that "*The 50 and 100 m contours are shown to identify the extents of anthropogenic disturbance zones for presence and human activity and for noise attenuation from heavy machinery, respectively*". However, we can merely spot a 25m and 100m buffer. It is necessary to clarify such inconsistency.
iii. Figure 2 of the EcoIA also mentioned that "*The environmental monitoring area from the fire hydrant pipeline construction demarcated by the red polygon shows the fishponds and the complex of marsh/natural watercourse habitats*

長春社 Since1968
The Conservancy Association
會址: 香港新界葵涌貨櫃碼頭路 77-81 號 Magnet Place 一期 13 樓 1305-6 室
電話 Tel.:(852)2728 6781 傳真 Fax.:(852)2728 5538
電子郵件 E-mail:cahk@cahk.org.hk
Add.: Units 1305-6, 13/F, Tower 1, Magnet Place, 77-81 Container Port Road, Kwai Chung, New Territories, H.K.
網址 Website:www.cahk.org.hk

that could become impacted by spillage of soil and other construction-related pollutants. These are adjacent ponds that are individually and physically bounded and separated by bunds, preventing the spread to adjacent ponds, and the marsh/stream complex". We still do not understand why environmental monitoring area has to be designated in such irregular form.

iv. Section 2.3.9 mentioned that "*It is unlikely that any additional rainwater draining into the stream from the PSFSC will have a significant negative impact on the ecosystem...*". We do not think such evaluation is related to the fire hydrant pipeline work itself.

v. Section 3.2.2 of the EcoIA admitted that "*The commercial fishponds and wooded area immediately adjacent to the construction and excavation alignment will encounter some noise levels during the day when construction activity happens*". As these areas can be utilized by wildlife, it is important to clearly specify the exact unmitigated noise level, and then suggest proper measures to minimize or mitigate noise. Simply claiming that "*these areas are already impacted by noise from anthropogenic activity*" is not well-justified.

vi. Would any potential disturbance be resulted on the night roost at the tree group next to the PSFSC forecourt during the pipeline installation? Would it be necessary to restrict working hours to avoid potential disturbance?

vii. For trees close to the alignment of the pipe, would they be felled? If yes, are there any compensatory planting plans? If not, are there any tree protection zones to separate the work site and those trees?

viii. It seems that the proposed mitigation measures in Summary (Section 5 of the EcoIA) are not totally consistent with other sections. Some of the proposed mitigation measures are missing in Summary. Please critically evaluate which mitigation measures would be put into practice.

ix. Section 5 of the EcoIA mentioned that "*To minimize the impact to the ecology and the environment of Mai Po, the construction of the fire hydrant pipeline will follow stringent protocols and mitigations. All construction will be preferably completed within 8 weeks in the summer season of 2021, non migratory season*". However, according to Figure 2, it seems that the alignment of the pipeline is very close to or even under Mai Po egretry. In this case, any works in summer season might overlap breeding season of ardeids. It is necessary for the project proponent to clarify if any potential impacts would be caused on Mai Po egretry,

長春社 Since1968
The Conservancy Association
會址: 香港新界葵涌貨櫃碼頭路 77-81 號 Magnet Place 一期 13 樓 1305-6 室
Add.: Units 1305-6, 13/F, Tower 1, Magnet Place, 77-81 Container Port Road, Kwai Chung, New Territories, H.K.
網址 Website:www.cahk.org.hk
電話 Tel.:(852)2728 6781 傳真 Fax.:(852)2728 5538
電子郵件 E-mail:cahk@cahk.org.hk

and evaluate whether any mitigations measures should be proposed.

3. Concern on cumulative impact

The previous upgrading work of public fire hydrant in Tam Kon Chau Road and PSFSC and the current underground stormwater drainage pipe are indeed part of the demolition and re-construction of PSFSC, but both works are not mentioned in the EEA. We still worry that if there are any other utilities associated with the demolition and re-construction of PSFSC.

Meanwhile, Section 4.4.1 of EcoIA mentions that "*Surveys indicate that even with the noise and activity from construction in the Field Studies Centre many birds—from waterbirds such as Grey herons, egrets, cormorants, and grebes to passerines--are still active with no indication of being disturbed and no mitigation measures are necessary*". As no frequent updates of the monthly Precautionary Ecological Checks or Environmental Impact Monitoring Report can be seen on the Mai Po Community website, it is necessary to provide those surveys to evaluate potential cumulative impact caused by the associated work in PSFSC.

Simply speaking, we would suggest that cumulative impacts due to other planned and committed works, including all associated utilities, and the demolition and re-construction of PSFSC, should be evaluated.

Yours faithfully,
Ng Hei Man
Campaign Manager
The Conservancy Association

5-5

HKBWS 香港觀鳥會

人鳥和諧 自然長存
People and birds living in harmony as nature continues to thrive

Secretary, Town Planning Board
15/F, North Point Government Offices
333 Java Road, North Point, Hong Kong
(E-mail: tpbpd@pland.gov.hk)

RECEIVED
29 JUN 2021
Town Planning Board

By email only

29 June 2021

Dear Sir/Madam,

Comments on the planning application for the proposed Public Utility Installation (Public Utility Pipe) and associated Filling and Excavation of Land at Tam Kon Chau Road, Mai Po (A/YL-MP/309)

The Hong Kong Bird Watching Society (HKBWS) would like to object to the current planning application due to the following reasons.

1 High ecological sensitivity of the application site

1.1 The application site is mainly located within the CA zone, which is intended to "*protect and retain the existing natural landscape, ecological or topographical features of the area for conservation, educational and research purposes and* ***to separate sensitive natural environment such as Site of Special Scientific Interest*** *or Country Park* ***from the adverse effects of development***". Most of the proposed alignment is also within the "Wetland Conservation Area" (WCA), which is "***to conserve the ecological value*** *of the fish ponds which form an integral part of the wetland ecosystem in the Deep Bay Area.*"

1.2 Besides, the site is also adjoining to the Mai Po Inner Deep Bay Ramsar Site and the Site of Special Scientific Interest, and It is also included in the "Inner Deep Bay and Shenzhen River catchment" Important Bird Area, which is recognized by the BirdLife International. We consider the application site is ecological sensitive, and thus all the construction works of the proposed fire hydrant pipeline should be taken with great caution, so that the potential

香港觀鳥會 Hong Kong Bird Watching Society
電話 Tel No. +852 2377 4387 電郵 E-mail info@hkbws.org.hk 地址 香港九龍荔枝角青山道532號偉基大廈7C
傳真 Fax No. +852 2314 3687 網頁 Web site www.hkbws.org.hk Address 7C, V Ga Building, 532 Castle Peak Road, Lai Chi Kok, Kowloon, Hong Kong
香港註冊成立的法定慈善機構及有限本擔保有限公司 A charitable organization incorporated in Hong Kong with limited liability by guarantee

BirdLife INTERNATIONAL PARTNER

adverse impacts on wetland ecosystem could be avoided and minimized.

2 NO ecological consideration is given to the Mai Po Village egretry

2.1 The proposed fire hydrant pipeline will involve land excavation works, installation works and land filling works along the alignment with a total length of 1,500m. However, part of the alignment is very close to, or even just next to the Mai Po Village egretry, which is the second largest egretry in Deep Bay area in 2019. The potential impacts on these ecologically important egretries should not be overlooked.

2.2 Unfortunately, the baseline data and assessment of the current Ecological Impact Assessment (EIA) heavily relied on the information from the previous ecological and environmental impact assessment (EEA) for the Peter Scott Field Studies Centre (PSFSC), which had only covered 500m zone of the PSFSC construction site, while **more than a half of the footprint** of the current application site are **outside** the 500m study area of the EEA. In fact the applicant only marked the Mai Po Village egretry in Figure 2 of the EIA once, and did not further identify this as one of the ecological sensitive receiver. Without any additional literature review or baseline surveys, we consider the current EIA is insufficient to identify the ecological sensitive receivers.

2.3 Moreover, the applicant decided to complete the construction works within 8 weeks "*during the summer non-migratory season*", which is claimed "*to minimize the impact to the ecology and the environment of Mai Po*". We are concerned this scheduling will probably **overlap** with the breeding season of egrets/herons (i.e. March to August). Given that breeding egrets are susceptible to disturbance by human activities, the presence of human disturbances close to nesting colonies may discourage ardeids from nesting[1], or even lead to abandonment of their breeding areas or nestlings. We consider the applicant should clarify the exact construction months and **make sure the construction programme would not step into breeding season,** so as to avoid unnecessary disturbance to the breeding egrets and

[1] Wong, C.L.C. and Woo, L.C.K. 2003. *Egretry counts in Hong Kong, with particular reference to the Mai Po Inner Deep Bay Ramsar Site: Summer 2003 Report*. The Hong Kong Bird Watching Society.

herons.

2.4 Moreover, the maximum foraging range of ardeids can be up to 2 to 4 km. With this distance, the environmental impacts including water quality, noise, and light during the construction phase could potentially deteriorate the habitat quality of the egretry and adversely affect the breeding birds and their breeding success.

2.5 We therefore urge the Town Planning Board (Board) to reject this application because the current EIA failed to identify and assess the potential ecological impacts on the egretry.

3 Irrelevant and incomplete environmental Impact assessment

3.1 Referring to Section 3 of the EIA about the potential environmental impacts, the applicant suggested that the *"potential environmental impacts from the construction may include noise, air, and water pollution"*, and *"the Environmental and Ecological Assessment (SMEC 2019) has assessed these impacts and proposed appropriate mitigations"*.

3.2 Besides, the applicant mentioned that *"the 100 m buffer from the proposed pipeline identifies the impact zone from noise caused by machinery during excavation, based on noise attenuation models created and tested under the ecological and environmental impact assessment (SMEC 2019)"*. However, as in response to the public comments on the EEA saying that *"no off-site works or activities should take place outside the G/IC zone"*, WWF-Hong Kong (the current applicant) admitted *"all the construction site work is within the G/IC zone"*[2]. That means the noise attenuation modeling and testing extracted from the previous environmental impact assessment under the EEA would **not be able to cover** the current proposed public utility pipe.

3.3 Meanwhile, in the Section 3.2 Noise, the applicant quickly jumped into conclusion that *"it is highly unlikely that noise from the construction and excavation will impact the wildlife in the project area"* by simply quoting the results made by the model for noise monitoring and mitigation conducted under the previous EEA and showing the figure of Noise level contours

[2] https://wwfhk.awsassets.panda.org/downloads/public_comments_of_the_eea_dec_2020.pdf

(unmitigated) modeled for the demolition and reconstruction works of Peter Scott Field Studies Centre. In Figure 2 of the EIA, the applicant also mentioned that the 100 m buffer from the pipeline trace are illustrated *"based on noise attenuation models created and tested under the ecological and environmental impact assessment (SMEC 2019)"*.

3.4 In Section 3.3. Air Pollution, the applicant quoted the EEA again, suggesting that the *"mitigation measures to ensure air quality is maintained during the PSFSC rebuild according to acceptable and permissible levels will also be applied to the construction of the FS pipeline along Tam Kon Chau Road"*. One also added the assessment of air quality during demolition and rebuild of PSFSC was *"unlikely to cause any ecological impacts from dust"*, and therefore, *"the emissions from the excavations will be expected to be less than from the demolition of the building which has now completed"*.

3.5 However, the environmental Impacts identified and assessed in the EEA are actually based on the demolition and reconstruction works of Peter Scott Field Studies Centre. According to Section A1.10 and A1.12 of the EEA, it is described that the key environmental impacts were identified based on the sequence of works which did not include the construction of the fire hydrant pipeline. Moreover, in response to the public comments on the EEA saying that *"no off-site works or activities should take place outside the G/IC zone"*, WWF-Hong Kong (the current applicant) also admitted *"all the construction site work is within the G/IC zone"*[3]. All these evidences reveals that the previous environmental impact assessment under the EEA would **not be able to cover** the current proposed fire hydrant pipeline.

3.6 As the two projects are very different (e.g. in terms of works location, scope, type, machine used, the distance between the works site and the sensitive receivers, mitigation measures required, etc.), the potential environmental impacts caused (i.e. water, air and noise impacts) by the proposed construction of fire hydrant pipeline and their corresponding mitigation measures would not be the same as those caused by the demolition and reconstruction works of Peter Scott Field Studies Centre. Directly applying

[3] https://wwfhk.awsassets.panda.org/downloads/public_comments_of_the_eea_dec_2020.pdf

the result from EEA to the current project is just inappropriate. The conclusion that the demolition and reconstruction works of Peter Scott Field Studies Centre would not cause unacceptable impacts on the environments under the EEA, does not necessarily mean that the current "new and addition" construction of fire hydrant pipeline, even with relatively less heavy works and shorter duration, would not cause extra and cumulative environmental impacts. Moreover, if the construction period of the current proposed fire hydrant pipeline construction work overlaps with the works of PSFSC, and also the previous planning application for drainage works associated with PSFSC (A/YL-MP/305), it would cause additional ecological and environmental impacts on the surroundings. This cumulative impact should also be properly addressed in the current assessment.

3.7 By simply quoting the irrelevant information and assessments, it is not convincing at all to indicate that the current project would not cause any unacceptable environmental impacts. We consider the applicant should re-identify and assess the relevant potential environmental impacts from the proposed fire hydrant pipeline.

4 Confusing and inconsistent use of words

4.1 In Figure 2 of the EIA, the applicant stated *"the 50 and 100 m contours are shown to identify the extents of anthropogenic disturbance zones for presence and human activity and for noise attenuation from heavy machinery, respectively"*. However, in the elaboration and the legend of the figure, there was only a 25 m buffer instead of a 50 m buffer. The applicant should clarify which one is correct.

4.2 In Section 2 Results and Potential Ecological Impacts, it is unclear where were the species from each taxa groups recorded. For example, the bird species were said to be recorded within the "project area", the reptile species were recorded in the EEA ecological surveys, and the dragonfly species were recorded from the commercial fishponds and *Gei wai* in the EEA study area. It is confusing if the bird recorded within the "project area" means the current project site, or the project site area in EEA, or the study area in EEA. The use of inconsistent words to indicate the referred area make

the assessment more confusing.

5 Justifications for the decision and comments made by Government departments and the Board

According to the Hong Kong Planning Standards and Guidelines (HKPSG), Chapter 10, Section 2.1 (ii), the Board has the responsibility to, "*restrict uses within conservation zones to those which sustain particular landscapes, ecological and geological attributes and heritage features*". We note that all other Government bureaux/departments are also bound to the HKPSG, and the Agriculture, Fisheries and Conservation Department (AFCD) and the Planning Department (PlanD) have the responsibility to advise the Board on the ecological[4] and planning aspects in particular. Given AFCD's mission to conserve natural environment and safeguard the ecological integrity[5], and the proposed development is not in line with the planning intention of the statutory zoning, HKBWS would also expect AFCD and PlanD to object to this application. Should AFCD, PlanD or the Board feels otherwise, we urge that the appropriate justifications are provided.

The HKBWS would like to remind the Board that the EEA, which was frequently mentioned in the current EIA, not only is irrelevant to this application, but also has many inadequacies (Please refer to Appendix 1). We consider the proposed fire hydrant pipeline was not a well-thought out proposal with inadequate impact assessments and loose phasing of construction works. We urge the Board to **reject** the current application. Thank you for your kind attention.

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[4] AFCD Role of Department. Available at:
http://www.afcd.gov.hk/english/aboutus/abt_role/abt_role.html

[5] AFCD Vision and Mission. Available at:
http://www.afcd.gov.hk/english/aboutus/vision_mission/abt_vision_mission.html

Yours faithfully,

Wong Suet Mei
Conservation Officer
The Hong Kong Bird Watching Society

cc.
The Conservancy Association
Designing Hong Kong
Kadoorie Farm and Botanic Garden
WWF – Hong Kong
TrailWatch

WWF - Hong Kong
15/F, Manhattan Centre,
8 Kwai Cheong Road,
Kwai Chung, New Territories
(E-mail: maipocommunity@wwf.org.hk)

香港觀鳥會
THE HONG KONG BIRD WATCHING SOCIETY
Since 1957 成立

By email only

1 June 2019

Dear Sir/Madam,

Comments on the Environmental and Ecological Assessment for Peter Scott Field Studies Centre Demolition and Rebuild

The Hong Kong Bird Watching Society (HKBWS) understands that the redevelopment of the Peter Scott Field Studies Centre (PSFSC) is not a Designated Project under the Environmental Impact Assessment Ordinance. Given that the PSFSC is within the internationally recognized Ramsar site, the ecologically sensitive WCA and the wider Deep Bay wetland ecosystem, the redevelopment of the PSFSC is required to be conducted with great care following the precautionary approach[1].

We appreciate the effort of WWF - Hong Kong in preparing an Environmental and Ecological Assessment (EEA) for the project and is made available for the public to comment. However, this consultancy report do not reflect the high degree of conservation concern that the Mai Po wetlands are receiving and the high standard that WWF - Hong Kong as a leading conservation organization is expected to deliver. HKBWS considers that there are various inadequacies in this EEA report that needs to be properly addressed, in order to minimize the environmental and ecological impacts of the works at PSFSC. Below are our comments and recommendations on the EEA.

1. **Location**

   A.1.6 of the PSFSC EEA stated that the PSFSC is covered by "Government, Institution or Community" (GIC) zoning and encircled by "Conservation Area" (CA). This is just part of the fact. **It should also mention that the PSFSC is within the Ramsar Site and the "Wetland Conservation Area" (WCA).** This would better illustrates the ecological sensitivity of the area and gives a more complete background on why demolition and construction works at PSFSC should be taken with great care.

[1] Town Planning Board Guideline No. 12C: https://www.info.gov.hk/tpb/en/forms/Guidelines/pg12c_e.pdf

地址： 香港九龍荔枝角青山道532號偉基大廈7樓C室
Address: 7C, V Ga Building, 532 Castle Peak Road, Lai Chi Kok, Kowloon, Hong Kong
電話 Tel.No.: 2377 4387
傳真 Fax.No.: 2314 3687
電郵 E-mail.: hkbws@hkbws.org.hk

2. **Adverse impacts on the ardeid (egrets/herons) night roost**

A.6.21 of the PSFSC EEA already documented the ardeid night roost at the PSFSC forecourt. *"During April 2019, some 74-84 Little Egrets, 25 to 33 Chinese Pond Herons, 6 Great Egrets and 1 Cattle Egret were observed recorded flying to a night roost in the trees adjacent to the PSFSC forecourt."* A.6.59 and A.3.8 of the PSFSC EEA suggested that there will be no works at the PSFSC during 1730 to 0800. Since the time for ardeids to return to their roosting site is dependent on the time of sunset, and the sunset time ranges from 1738 to 1904 within a year in Hong Kong, we are concerned the cut off time 1730 is not sufficient to protect the roosting ardeids. **We consider that works should be finished at least one hour before sunset instead.** Besides monthly monitoring of the ardeids, it would be good to know the arrival time, pattern and direction of the roosting ardeids, so as to assess if the works would have any adverse impacts.

3. **Adverse noise impacts on Ecological Sensitive Receivers (ESRs) are not mitigated**

3.1. A.6.53 of PSFSC EEA stated that *"there is no line of sight from the PSFSC (due to screening by tress and, to a lesser extent, by buildings), so the only potential disturbance impact would be that of noise"*. The current background noise level at PSFSC is 54dB (Table A3-3 of the PSFSC EEA). Comparing Figures A3-1, A3-2 and A3-4 of PSFSC EEA, noise levels at the residential areas were significantly reduced with the use of 5m and 10m noise barriers under the mitigated scenario (Figure 1). **However, there seems to be little noise reduction in the fishponds, wetlands and *Gei Wais*. The mitigated noise level is still predicted to range from 66dB to 86dB, just like the noise contours in the unmitigated scenario (Figure 2).**

3.2. A.3.31, A.6.51 and A.6.53 of PSFSC EEA stated that *"these contour plots also show the generally low level of noise in the area outside the PSFSC boundary"*, *"the modelling of noise during the demolition and construction stages of PSFSC show low-levels of noise off-site during the works, meaning that there are unlikely to be any ecological impacts caused by noise from the PSFSC project site"* and *"so the only potential disturbance impact would be that of noise which would be much attenuated due to distance"*. **It is uncertain how these conclusions can be drawn.**

3.3. **Additional noise mitigation measures** (e.g. the use of a moveable noise enclosure at PSFSC and installation of a noise barrier between the site and any nearby ESRs) **were left to the decision of the Demolition/Construction Contractor** (A.3.32 of the PSFSC EEA). **We consider that these additional mitigation measures should be a requirement for the contractors to fulfil in the tender/contract rather than**

optional choices, as these measures should be able to further minimise the adverse noise impacts to the surrounding fishponds and wetlands environments which are important bird foraging and roosting grounds.

4. Underestimate the ecological value of fishponds

4.1. A.6.54 of the PSFSC EEA stated that *"The other wetland habitats adjacent to or within 200m of PSFSC comprised only of commercial fishponds, which are either abandoned or frequently managed for aquaculture. Either way, these fishponds are of much less significance to wintering waterbirds than the brackish gei wai in the MPNR, as shown on Table A6-12. Any impacts to this small number of birds will be of low significance."* **We consider that such statement downplays the ecological importance of fishponds, and is contrary to the assessment made in Table A6-8, where both active fishponds and abandoned fishponds were evaluated as of *"High Ecological Value"*.**

4.2. We would like to reiterate that the **PSFSC is within the Ramsar Site and the WCA**. The Town Planning Board Guideline No. 12C clearly stated that *"The Study on the Ecological Value of Fish Ponds in the Deep Bay Area completed in 1997 has confirmed the unique international and regional importance of the fish pond system in the Deep Bay Area particularly for ardeids (i.e. herons and egrets). It has established that fishponds in the area have intrinsic value as they function ecologically as a substantial source of food supply for the birds and as an important habitat for roosting and foraging of waterbirds. The fish pond system is fundamentally linked with the Mai Po Marshes and is part of the Deep Bay Area wetland ecosystem."* The planning intention of WCA is *"to conserve the ecological value of the fishponds which form an integral part of the wetland ecosystem in the Deep Bay Area. It comprises the exiting and contiguous, active or abandoned fishponds in the Deep Bay Area, which should all be conserved."* **Therefore, we consider that any works at PSFSC should be conducted with great care.**

4.3. **The ecological value of fishponds is related to its operation**. When fishermen drain the ponds to harvest their fish, the trash fish and other invertebrates left in the shallow water of the pond creates a favourable feeding habitat for waterbirds. From the bird monitoring conducted for our Fishponds Management Agreement project, **the number of waterbird species recorded during drain-down was found to be about 19 times higher than the number recorded before the fishpond drain-down**. Therefore, the number of bird species recorded at fishponds can have a big variation depending on the operation of the fishpond, **thus low number of bird recorded at a**

certain point of time does not indicate the fishponds are of low ecological value.

4.4. Besides, the data presented in Table A6-12 seems to be **misleading**. The mean count is the average bird usage of the fishponds in the whole year, but the seasonality of birds during a year is neglected (i.e. it is well-understood that there are more birds during winter). Also, the maximum count of some bird species seems to be much lower than that recorded in the Agriculture, Fisheries and Conservation Department (AFCD) Monthly Waterbird Monitoring in the Deep Bay Area[2]. It is uncertain if such difference was due to difference in survey methodology, or the presence/absence of drained-down fishponds. **In fact, a total of 20 waterbird and wetland dependent bird species were recorded in 16 fishponds within 200m of PSFSC in winter of 2017** (i.e. January to March, and October to December)(please refer to Table 1 below). In February 2017, 138 Little Egret was found in a drained-down fishpond immediately next to the PSFSC; while in another drained-down fishpond about 140m from PSFSC, 192 Little Egret, 114 Great Egret and 22 Black-faced Spoonbill were recorded. **We consider that the fishponds surrounding the PSFSC is of high ecological value and the adverse ecological impacts of the redevelopment works on these fishponds should not be underestimated.**

5. Programme for works at PSFSC

5.1. A.2.11 and A.2.12 stated that *"The existing PSFSC building is planned to be demolished during the period April to June 2019"* and *"Following demolition, the new PSFSC building will be constructed from June 2019 to December 2021"*. From Figure A1-5, **it seems that there will not be any phasing of works at PSFSC to avoid demolition/construction works during the dry season**. It is only stated that *"dry season during which noisy outdoor works in MPNR* (Mai Po Nature Reserve) *are controlled"* and *"worst-case programme for cumulative impacts with MPNR"*. **MPNR, PSFSC and the surrounding fishponds are all within the Ramsar Site and the WCA, and all are of high ecological and conservation value.** Noisy works such as demolition, sheetpiling and foundation works should be scheduled outside the dry season to avoid the adverse impacts on the overwintering birds using Mai Po and nearby wetlands. We would also like to know if any specific demolition/construction methods were selected and if construction by precast or prefabrication units will be adopted, in order to minimize the environmental impacts to the ecologically sensitive surroundings during construction phase.

[2] Anon. 2017-2018. Monthly Waterbird Monitoring Biannual Report 2 (October 2016 to March 2017, October 2017 to March 2018), Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme 2016-17. Report by the Hong Kong Bird Watching Society to the Agriculture, Fisheries and Conservation Department, Hong Kong Special Administrative Region Government.

Table 1. Waterbird and wetland dependent bird species recorded in 16 fishponds within 200m of PSFSC in winter of 2017 (Data source: AFCD Monthly Waterbird Monitoring, January to March/October to December 2017)

No.	Name	Scientific Name	Conservation and Protection Status^	Maximum count per survey
1	Little Grebe	*Tachybaptus ruficollis*	LC	15
2	Black-faced Spoonbill	*Platalea minor*	PGC; WASP(II); RLCV(EN); IUCN(EN)	22
3	Black-crowned Night Heron	*Nycticorax nycticorax*	(LC)	1
4	Chinese Pond Heron	*Ardeola bacchus*	PRC (RC)	20
5	Eastern Cattle Egret	*Bubulcus coromandus*	(LC)	1
6	Grey Heron	*Ardea cinerea*	PRC	6
7	Great Egret	*Ardea alba*	PRC (RC)	120
8	Intermediate Egret	*Ardea intermedia*	RC	6
9	Little Egret	*Egretta garzetta*	PRC (RC)	332
10	Great Cormorant	*Phalacrocorax carbo*	PRC	13
11	Black Kite	*Milvus migrans*	(RC); WASP(II); CITES(II)	2
12	White-breasted Waterhen	*Amaurornis phoenicurus*	-	4
13	Common Moorhen	*Gallinula chloropus*	-	5
14	Little Ringed Plover	*Charadrius dubius*	(LC)	11
15	Green Sandpiper	*Tringa ochropus*	-	2
16	Wood Sandpiper	*Tringa glareola*	LC	1
17	Common Sandpiper	*Actitis hypoleucos*	-	5
18	White-throated Kingfisher	*Halcyon smyrnensis*	(LC)	1
19	Common Kingfisher	*Alcedo atthis*	-	1
20	Pied Kingfisher	*Ceryle rudis*	(LC)	1

^ Note: Conservation and protection status refers to Fellowes *et al.* (2002), List of Wild Animals under State Protection, Red List of China's Vertebrates (Jiang *et al.* 2016), The International Union for Conservation of Nature Red List of Threatened Species IUCN (2017), and The Convention on International Trade in Endangered Species of Wild Fauna and Flora CITES (2017).

a. All wild birds are protected under Wild Animal Protection Ordinance (Cap. 170).

b. Fellowes *et al.* (2002): GC=Global Concern; LC=Local Concern; RC=Regional Concern; PRC=Potential Regional Concern; PGC: Potential Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in nesting and/or roosting sites rather than in general occurrence.

b. List of Wild Animals Under State Protection promulgated by State Forestry Administration and Ministry of Agriculture on 14 January, 1989 (WASP): I = Class I Protected Species in China; II = Class II Protected Species in China.

c. Conservation status by Red List of China's Vertebrates (RLCV) (Jiang *et al.* 2016): CR = Critically Endangered; EN = Endangered; VU = Vulnerable; NT = Near Threatened.

d. Conservation status by IUCN (2017): CR = Critically Endangered; EN = Endangered; VU = Vulnerable; NT = Near Threatened.

e. Protection status by CITES (2017): II = Listed in CITES Appendix II; III = Listed in CITES Appendix III.

6. Bird collision

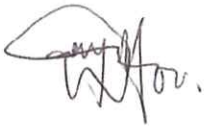
6.1. A.1.12 stated that *"Operation stage ecological impacts are not anticipated"*. As shown in the drawing in Figure A1-4, there will be a lot of large windows or glass doors/panels in the new PSFSC. **The EEA seems to neglect the risk of bird collision during the operation phase.** Below is the paragraph about bird collision in my email communication with WWF - Hong Kong on 14 March 2019.

> *"As I have mentioned in the previous meetings already, given that Mai Po is in such an ecologically sensitive location, I would expect the "new" PSFSC and the renovated EC would be bird friendly buildings, and I would expect the glass windows and panels in these buildings would be specially treated to avoid bird collision (no matter there were many bird collision incidents at Mai Po or not). For visual markers on glass windows/panels, instead of the normal straight lines or dots designs, there could be creative and artistic solutions to this (such as translucent silhouettes of trees/ lines of water birds/lines of writing "WWF - Hong Kong/Peter Scott Field Studies Centre/Mai Po Nature Reserve" etc). Careful considerations should also be given on the internal and external lighting arrangement. There are many documents in the US on bird collision and bird friendly buildings. Here are two links to the documents by Audubon Minnesota and American Bird Conservancy on best practices for bird safety and bird-friendly building design for your reference.*
> *http://mn.audubon.org/conservation/birdsafe-buildings*
> *https://abcbirds.org/program/glass-collisions/*"

7. Final remarks

HKBWS understands the EEA and all the aforementioned recommendations are not statutory requirements, therefore, it heavily relies on the commitment of WWF - Hong Kong to set a strict standard for contractors and workers to follow for the conservation of the Deep Bay wetlands and to ensure the redevelopment of PSFSC to be conducted at a standard that is in line with the conservation importance of the internationally recognized Ramsar Site. The works of WWF - Hong Kong would also set an important example for other developments in the Deep Bay area. We hope our comments are useful and will be taken into consideration, such that the demolition and construction works will be carried out in a more comprehensive manner to safeguard all important bird foraging and roosting grounds in the Deep Bay wetlands. Thank you for your kind attention.

Yours faithfully,



Woo Ming Chuan
Senior Conservation Officer
The Hong Kong Bird Watching Society

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Figure 1. Noise mitigation at PSFSC proposed in the EEA and used for simulation of noise contours under the mitigated scenario (extracted from Figure A3-3 of the PSFSC EEA).

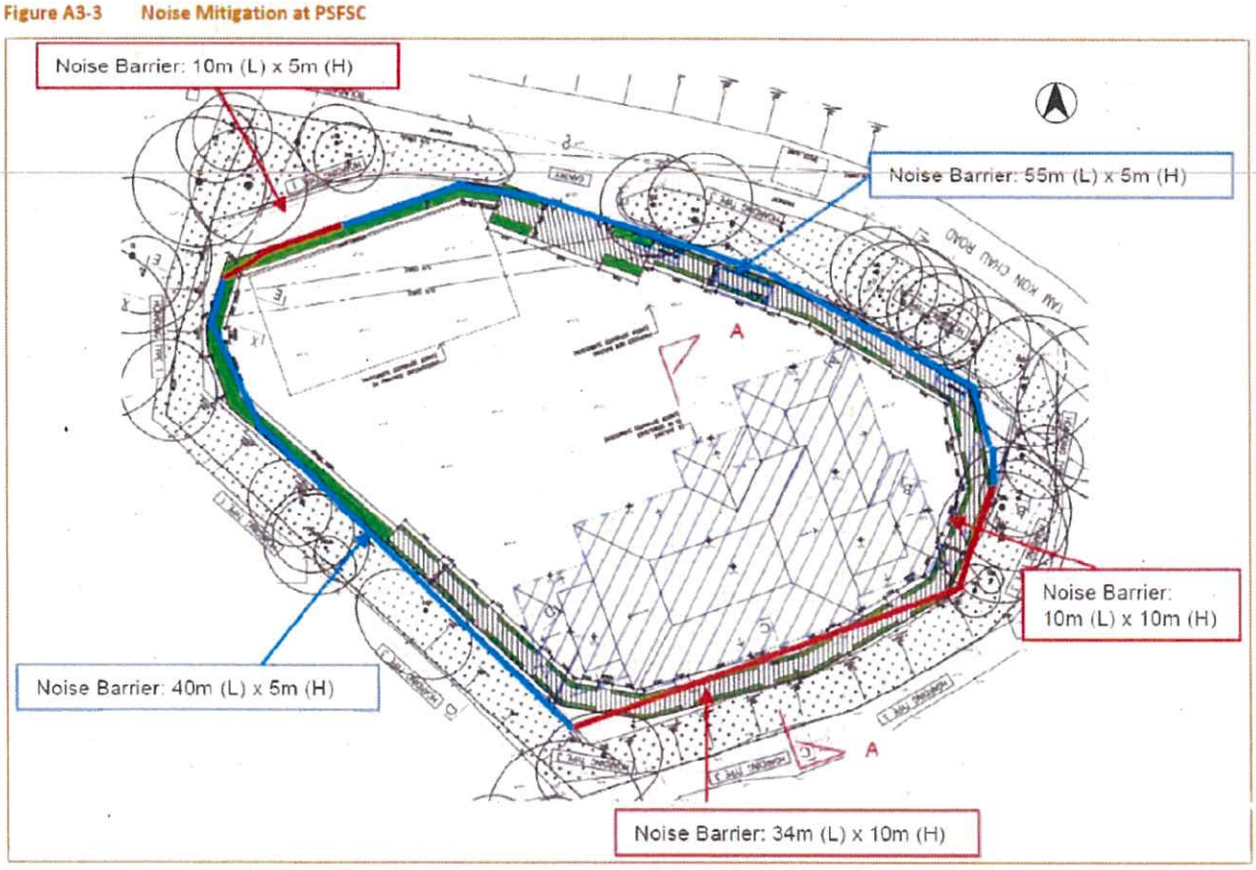
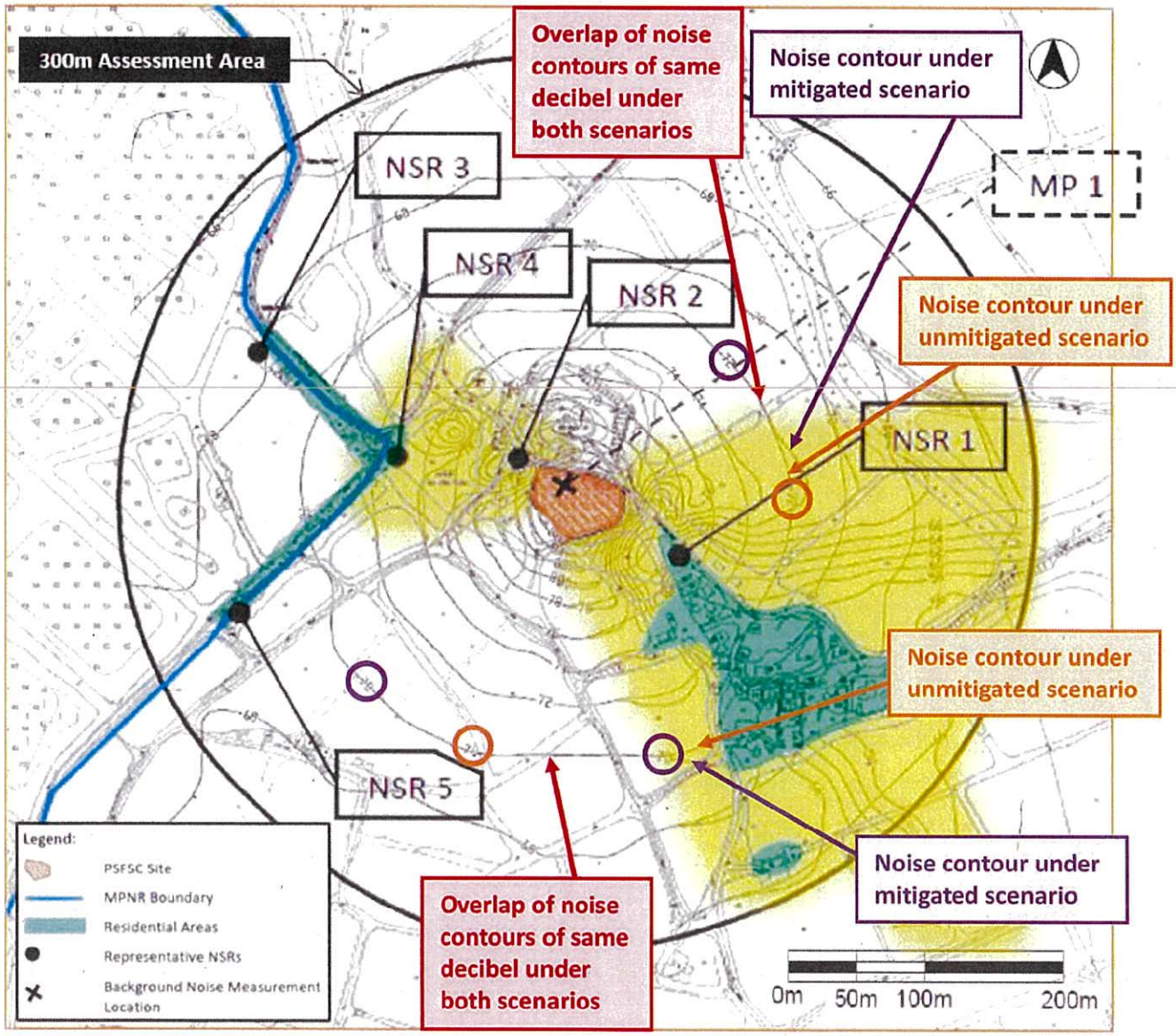


Figure 2. Overlaying Figures A3-1, A3-2 and A3-4 of PSFSC EEA, noise levels at the residential areas were significantly reduced (areas highlighted in yellow) with the use of 5m and 10m noise barriers under the mitigated scenario. However, there seems to be little noise reduction in the fishponds, wetlands and *Gei Wais*. The mitigated noise level is still predicted to range from 66dB to 86dB, just like the noise contours in the unmitigated scenario.



元朗區議會
YUEN LONG DISTRICT COUNCIL

關於規劃申請（編號 A/YL-MP/309）再次提交資料持反對意見信

敬啟者：

本人對此申請持反對意見。原因其下：

1、 此申請地段是村民的鄉村路段，並有大型車輛行經此路，施工會造成不便。

2、 而規劃申請中並沒詳細說明是何公共事業設施裝置？公用喉管作何用？目的性含糊不清。

3、 施工地段包括濕地修復區，是否一定要破壞自然保護區而進行此工程。

4、 未明確申請詳情，擔竿洲附近村民是否需此公共事業設施裝置是其一原因。

故此，在未明確目的性詳情前，本人反對上述申請！

此致

城規會
秘書處

簽署：

元朗區議員 文富穩 BBS
2021 年 7 月 26 日

E-MAIL: [redacted] 電話： [redacted] 傳真：

5-7

HKBWS
香港觀鳥會

人鳥和諧 自然長存

Secretary, Town Planning Board
15/F, North Point Government Offices
333 Java Road, North Point, Hong Kong
(E-mail: tpbpd@pland.gov.hk)

By email only

11 August 2021

Dear Sir/Madam,

Comments on the planning application for the proposed Public Utility Installation (Public Utility Pipe) and associated Filling and Excavation of Land at Tam Kon Chau Road, Mai Po (A/YL-MP/309)

The Hong Kong Bird Watching Society (HKBWS) would like to express the following concerns:

Careful ecological consideration should be given to the Mai Po Village egretry and ardeid night roost

It is stated in Section 4.4 that "*to avoid disturbance to the night roosting ardeid next to PSFSC, construction work will be carried out from 0800 to 1730, which is at least one hour after sunrise and over one hour before sunset in summer non-migratory season*". This proposed scheduling is inappropriate as the sunset time would be at around/before 6:12pm starting from September. We therefore expect the applicant to review the scheduling and to make sure the works in the day time start at least one hour after sunrise and end one hour before sunset in every month.

Moreover, in view of the potential impacts on Mai Po Village egretry, the applicant decided that "*no work will be carried out from April 2022 to June 2022 at this location. Should the young egrets leave the nest in July/August, construction works can only be carried out until then*". Though it is understood that breeding periods may vary between different locations and species, or other climate or environmental conditions, we would like to remind the applicant **all works close to the egretry should be**

香港觀鳥會 Hong Kong Bird Watching Society
電話 Tel No +852 2377 4387 電郵 E-mail info@hkbws.org.hk 地址 香港九龍荔枝角青山道532號偉基大廈7C
傳真 Fax No +852 2314 3687 網頁 Web site www.hkbws.org.hk Address 7C, V Ga Building, 532 Castle Peak Road, Lai Chi Kok, Kowloon, Hong Kong

generally avoided during breeding season which is from March to August instead of April to June. We hope that the applicant would be **committed to closely monitor the condition of the egretry and would closely communicate with AFCD, so as to make sure the construction programme would not step into breeding season and cause unnecessary disturbance to the breeding egrets and herons.**

We have published a guideline for planning and carrying out construction works at egretries (i.e. nesting colonies) back in 2016 and was recently updated in 2018 (available online at: https://www.hkbws.org.hk/cms/index.php/reports). The applicant can make reference to the guideline.

Irrelevant and incomplete environmental Impact assessment

Referring to Section 3 of the EIA about the potential environmental impacts, the applicant suggested that the "*potential environmental impacts from the construction may include noise, air, and water pollution*", and "*the Environmental and Ecological Assessment (SMEC 2019) has assessed these impacts and proposed appropriate mitigations*". In various sections of the EIA, the applicant still kept on quoting the EEA, the environmental Impacts and mitigation measures identified and assessed in the EEA are actually based on the demolition and reconstruction works of Peter Scott Field Studies Centre.

However, according to Section A1.10 and A1.12 of the EEA, it is described that the key environmental impacts were identified based on the sequence of works which did not include the construction of the fire hydrant pipeline. Moreover, in response to the public comments on the EEA saying that "*no off-site works or activities should take place outside the G/IC zone*", WWF-Hong Kong (the current applicant) also admitted "*all the construction site work is within the G/IC zone*"[1]. All these evidences reveals that the previous environmental impact assessment under the EEA would **not be able to cover** the current proposed fire hydrant pipeline.

[1] https://wwfhk.awsassets.panda.org/downloads/public_comments_of_the_eea_dec_2020.pdf

As the two projects are very different (e.g. in terms of works location, scope, type, machine used, the distance between the works site and the sensitive receivers, mitigation measures required, etc.), the potential environmental impacts caused (i.e. water, air and noise impacts) by the proposed construction of fire hydrant pipeline and their corresponding mitigation measures would not be the same as those caused by the demolition and reconstruction works of Peter Scott Field Studies Centre. Directly applying the result from EEA to the current project is just inappropriate. The conclusion that the demolition and reconstruction works of Peter Scott Field Studies Centre would not cause unacceptable impacts on the environments under the EEA, does not necessarily mean that the current "new and addition" construction of fire hydrant pipeline, even with relatively less heavy works and shorter duration, would not cause extra and cumulative environmental impacts. Moreover, if the construction period of the current proposed fire hydrant pipeline construction work overlaps with the works of PSFSC, and also the previous planning application for drainage works associated with PSFSC (A/YL-MP/305), it would cause additional ecological and environmental impacts on the surroundings. This cumulative impact should also be properly addressed in the current assessment.

By simply quoting the irrelevant information and assessments, it is not convincing at all to indicate that the current project would not cause any environmental impacts. We consider the applicant should re-identify and assess the relevant potential environmental impacts from the proposed fire hydrant pipeline. We would also like to remind the Board that the EEA, which was frequently mentioned in the current EIA, not only is irrelevant to this application, but also has many inadequacies (Please refer to Appendix 1).

Confusing and inconsistent use of words

In Section 2 Results and Potential Ecological Impacts, it is unclear where were the species from each taxa groups recorded. For example, the bird species and the reptile species were said to be recorded within the "project area", the amphibian species were recorded in the "study area" derived from the Mai Po Nature Reserve management plan (2019-2024), and the dragonfly species were recorded from the commercial fishponds and *Gei wai* in the EEA study area. It is confusing if the bird recorded within

the "project area" means the current project site, or the project site area in EEA, or the study area in EEA. The use of inconsistent words to indicate the referred area make the assessment more confusing.

The HKBWS hopes that our comments would be taken into consideration. Thank you for your kind attention.

Yours faithfully,

Suetmei

Wong Suet Mei
Conservation Officer
The Hong Kong Bird Watching Society

cc.
The Conservancy Association
Designing Hong Kong
Kadoorie Farm and Botanic Garden
WWF – Hong Kong
TrailWatch

WWF - Hong Kong
15/F, Manhattan Centre,
8 Kwai Cheong Road,
Kwai Chung, New Territories
(E-mail: maipocommunity@wwf.org.hk)

香港觀鳥會
THE HONG KONG BIRD WATCHING SOCIETY
Since 1957 成立

By email only

1 June 2019

Dear Sir/Madam,

Comments on the Environmental and Ecological Assessment for Peter Scott Field Studies Centre Demolition and Rebuild

The Hong Kong Bird Watching Society (HKBWS) understands that the redevelopment of the Peter Scott Field Studies Centre (PSFSC) is not a Designated Project under the Environmental Impact Assessment Ordinance. Given that the PSFSC is within the internationally recognized Ramsar site, the ecologically sensitive WCA and the wider Deep Bay wetland ecosystem, the redevelopment of the PSFSC is required to be conducted with great care following the precautionary approach[1].

We appreciate the effort of WWF - Hong Kong in preparing an Environmental and Ecological Assessment (EEA) for the project and is made available for the public to comment. However, this consultancy report do not reflect the high degree of conservation concern that the Mai Po wetlands are receiving and the high standard that WWF - Hong Kong as a leading conservation organization is expected to deliver. HKBWS considers that there are various inadequacies in this EEA report that needs to be properly addressed, in order to minimize the environmental and ecological impacts of the works at PSFSC. Below are our comments and recommendations on the EEA.

1. **Location**

   A.1.6 of the PSFSC EEA stated that the PSFSC is covered by "Government, Institution or Community" (GIC) zoning and encircled by "Conservation Area" (CA). This is just part of the fact. **It should also mention that the PSFSC is within the Ramsar Site and the "Wetland Conservation Area" (WCA).** This would better illustrates the ecological sensitivity of the area and gives a more complete background on why demolition and construction works at PSFSC should be taken with great care.

[1] Town Planning Board Guideline No. 12C: https://www.info.gov.hk/tpb/en/forms/Guidelines/pg12c_e.pdf

2. **Adverse impacts on the ardeid (egrets/herons) night roost**

A.6.21 of the PSFSC EEA already documented the ardeid night roost at the PSFSC forecourt. *"During April 2019, some 74-84 Little Egrets, 25 to 33 Chinese Pond Herons, 6 Great Egrets and 1 Cattle Egret were observed recorded flying to a night roost in the trees adjacent to the PSFSC forecourt."* A.6.59 and A.3.8 of the PSFSC EEA suggested that there will be no works at the PSFSC during 1730 to 0800. Since the time for ardeids to return to their roosting site is dependent on the time of sunset, and the sunset time ranges from 1738 to 1904 within a year in Hong Kong, we are concerned the cut off time 1730 is not sufficient to protect the roosting ardeids. **We consider that works should be finished at least one hour before sunset instead.** Besides monthly monitoring of the ardeids, it would be good to know the arrival time, pattern and direction of the roosting ardeids, so as to assess if the works would have any adverse impacts.

3. **Adverse noise impacts on Ecological Sensitive Receivers (ESRs) are not mitigated**

3.1. A.6.53 of PSFSC EEA stated that *"there is no line of sight from the PSFSC (due to screening by tress and, to a lesser extent, by buildings), so the only potential disturbance impact would be that of noise"*. The current background noise level at PSFSC is 54dB (Table A3-3 of the PSFSC EEA). Comparing Figures A3-1, A3-2 and A3-4 of PSFSC EEA, noise levels at the residential areas were significantly reduced with the use of 5m and 10m noise barriers under the mitigated scenario (Figure 1). **However, there seems to be little noise reduction in the fishponds, wetlands and *Gei Wais*. The mitigated noise level is still predicted to range from 66dB to 86dB, just like the noise contours in the unmitigated scenario (Figure 2).**

3.2. A.3.31, A.6.51 and A.6.53 of PSFSC EEA stated that *"these contour plots also show the generally low level of noise in the area outside the PSFSC boundary"*, *"the modelling of noise during the demolition and construction stages of PSFSC show low-levels of noise off-site during the works, meaning that there are unlikely to be any ecological impacts caused by noise from the PSFSC project site"* and *"so the only potential disturbance impact would be that of noise which would be much attenuated due to distance"*. **It is uncertain how these conclusions can be drawn.**

3.3. **Additional noise mitigation measures** (e.g. the use of a moveable noise enclosure at PSFSC and installation of a noise barrier between the site and any nearby ESRs) **were left to the decision of the Demolition/Construction Contractor** (A.3.32 of the PSFSC EEA)**. We consider that these additional mitigation measures should be a requirement for the contractors to fulfil in the tender/contract rather than**

optional choices, as these measures should be able to further minimise the adverse noise impacts to the surrounding fishponds and wetlands environments which are important bird foraging and roosting grounds.

4. Underestimate the ecological value of fishponds

4.1. A.6.54 of the PSFSC EEA stated that "*The other wetland habitats adjacent to or within 200m of PSFSC comprised only of commercial fishponds, which are either abandoned or frequently managed for aquaculture. Either way, these fishponds are of much less significance to wintering waterbirds than the brackish gei wai in the MPNR, as shown on Table A6-12. Any impacts to this small number of birds will be of low significance.*" **We consider that such statement downplays the ecological importance of fishponds, and is contrary to the assessment made in Table A6-8, where both active fishponds and abandoned fishponds were evaluated as of "*High Ecological Value*".**

4.2. We would like to reiterate that the **PSFSC is within the Ramsar Site and the WCA.** The Town Planning Board Guideline No. 12C clearly stated that "*The Study on the Ecological Value of Fish Ponds in the Deep Bay Area completed in 1997 has confirmed the unique international and regional importance of the fish pond system in the Deep Bay Area particularly for ardeids (i.e. herons and egrets). It has established that fishponds in the area have intrinsic value as they function ecologically as a substantial source of food supply for the birds and as an important habitat for roosting and foraging of waterbirds. The fish pond system is fundamentally linked with the Mai Po Marshes and is part of the Deep Bay Area wetland ecosystem.*" The planning intention of WCA is "*to conserve the ecological value of the fishponds which form an integral part of the wetland ecosystem in the Deep Bay Area. It comprises the exiting and contiguous, active or abandoned fishponds in the Deep Bay Area, which should all be conserved.*" **Therefore, we consider that any works at PSFSC should be conducted with great care.**

4.3. **The ecological value of fishponds is related to its operation**. When fishermen drain the ponds to harvest their fish, the trash fish and other invertebrates left in the shallow water of the pond creates a favourable feeding habitat for waterbirds. From the bird monitoring conducted for our Fishponds Management Agreement project, **the number of waterbird species recorded during drain-down was found to be about 19 times higher than the number recorded before the fishpond drain-down**. Therefore, the number of bird species recorded at fishponds can have a big variation depending on the operation of the fishpond, **thus low number of bird recorded at a**

certain point of time does not indicate the fishponds are of low ecological value.

4.4. Besides, the data presented in Table A6-12 seems to be **misleading**. The mean count is the average bird usage of the fishponds in the whole year, but the seasonality of birds during a year is neglected (i.e. it is well-understood that there are more birds during winter). Also, the maximum count of some bird species seems to be much lower than that recorded in the Agriculture, Fisheries and Conservation Department (AFCD) Monthly Waterbird Monitoring in the Deep Bay Area[2]. It is uncertain if such difference was due to difference in survey methodology, or the presence/absence of drained-down fishponds. **In fact, a total of 20 waterbird and wetland dependent bird species were recorded in 16 fishponds within 200m of PSFSC in winter of 2017** (i.e. January to March, and October to December)(please refer to Table 1 below). In February 2017, 138 Little Egret was found in a drained-down fishpond immediately next to the PSFSC; while in another drained-down fishpond about 140m from PSFSC, 192 Little Egret, 114 Great Egret and 22 Black-faced Spoonbill were recorded. **We consider that the fishponds surrounding the PSFSC is of high ecological value and the adverse ecological impacts of the redevelopment works on these fishponds should not be underestimated.**

5. Programme for works at PSFSC

5.1. A.2.11 and A.2.12 stated that "*The existing PSFSC building is planned to be demolished during the period April to June 2019*" and "*Following demolition, the new PSFSC building will be constructed from June 2019 to December 2021*". From Figure A1-5, **it seems that there will not be any phasing of works at PSFSC to avoid demolition/construction works during the dry season**. It is only stated that "*dry season during which noisy outdoor works in MPNR (Mai Po Nature Reserve) are controlled*" and "*worst-case programme for cumulative impacts with MPNR*". **MPNR, PSFSC and the surrounding fishponds are all within the Ramsar Site and the WCA, and all are of high ecological and conservation value.** Noisy works such as demolition, sheetpiling and foundation works should be scheduled outside the dry season to avoid the adverse impacts on the overwintering birds using Mai Po and nearby wetlands. We would also like to know if any specific demolition/construction methods were selected and if construction by precast or prefabrication units will be adopted, in order to minimize the environmental impacts to the ecologically sensitive surroundings during construction phase.

[2] Anon. 2017-2018. Monthly Waterbird Monitoring Biannual Report 2 (October 2016 to March 2017, October 2017 to March 2018), Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme 2016-17. Report by the Hong Kong Bird Watching Society to the Agriculture, Fisheries and Conservation Department, Hong Kong Special Administrative Region Government.

Table 1. Waterbird and wetland dependent bird species recorded in 16 fishponds within 200m of PSFSC in winter of 2017 (Data source: AFCD Monthly Waterbird Monitoring, January to March/October to December 2017)

No.	Name	Scientific Name	Conservation and Protection Status^	Maximum count per survey
1	Little Grebe	*Tachybaptus ruficollis*	LC	15
2	Black-faced Spoonbill	*Platalea minor*	PGC; WASP(II); RLCV(EN); IUCN(EN)	22
3	Black-crowned Night Heron	*Nycticorax nycticorax*	(LC)	1
4	Chinese Pond Heron	*Ardeola bacchus*	PRC (RC)	20
5	Eastern Cattle Egret	*Bubulcus coromandus*	(LC)	1
6	Grey Heron	*Ardea cinerea*	PRC	6
7	Great Egret	*Ardea alba*	PRC (RC)	120
8	Intermediate Egret	*Ardea intermedia*	RC	6
9	Little Egret	*Egretta garzetta*	PRC (RC)	332
10	Great Cormorant	*Phalacrocorax carbo*	PRC	13
11	Black Kite	*Milvus migrans*	(RC); WASP(II); CITES(II)	2
12	White-breasted Waterhen	*Amaurornis phoenicurus*	-	4
13	Common Moorhen	*Gallinula chloropus*	-	5
14	Little Ringed Plover	*Charadrius dubius*	(LC)	11
15	Green Sandpiper	*Tringa ochropus*	-	2
16	Wood Sandpiper	*Tringa glareola*	LC	1
17	Common Sandpiper	*Actitis hypoleucos*	-	5
18	White-throated Kingfisher	*Halcyon smyrnensis*	(LC)	1
19	Common Kingfisher	*Alcedo atthis*	-	1
20	Pied Kingfisher	*Ceryle rudis*	(LC)	1

^ Note: Conservation and protection status refers to Fellowes *et al.* (2002), List of Wild Animals under State Protection, Red List of China's Vertebrates (Jiang *et al.* 2016), The International Union for Conservation of Nature Red List of Threatened Species IUCN (2017), and The Convention on International Trade in Endangered Species of Wild Fauna and Flora CITES (2017).

a. All wild birds are protected under Wild Animal Protection Ordinance (Cap. 170).

b. Fellowes *et al.* (2002): GC=Global Concern; LC=Local Concern; RC=Regional Concern; PRC=Potential Regional Concern; PGC: Potential Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in nesting and/or roosting sites rather than in general occurrence.

b. List of Wild Animals Under State Protection promulgated by State Forestry Administration and Ministry of Agriculture on 14 January, 1989 (WASP): I = Class I Protected Species in China; II = Class II Protected Species in China.

c. Conservation status by Red List of China's Vertebrates (RLCV) (Jiang *et al.* 2016): CR = Critically Endangered; EN = Endangered; VU = Vulnerable; NT = Near Threatened.

d. Conservation status by IUCN (2017): CR = Critically Endangered; EN = Endangered; VU = Vulnerable; NT = Near Threatened.

e. Protection status by CITES (2017): II = Listed in CITES Appendix II; III = Listed in CITES Appendix III.

6. Bird collision

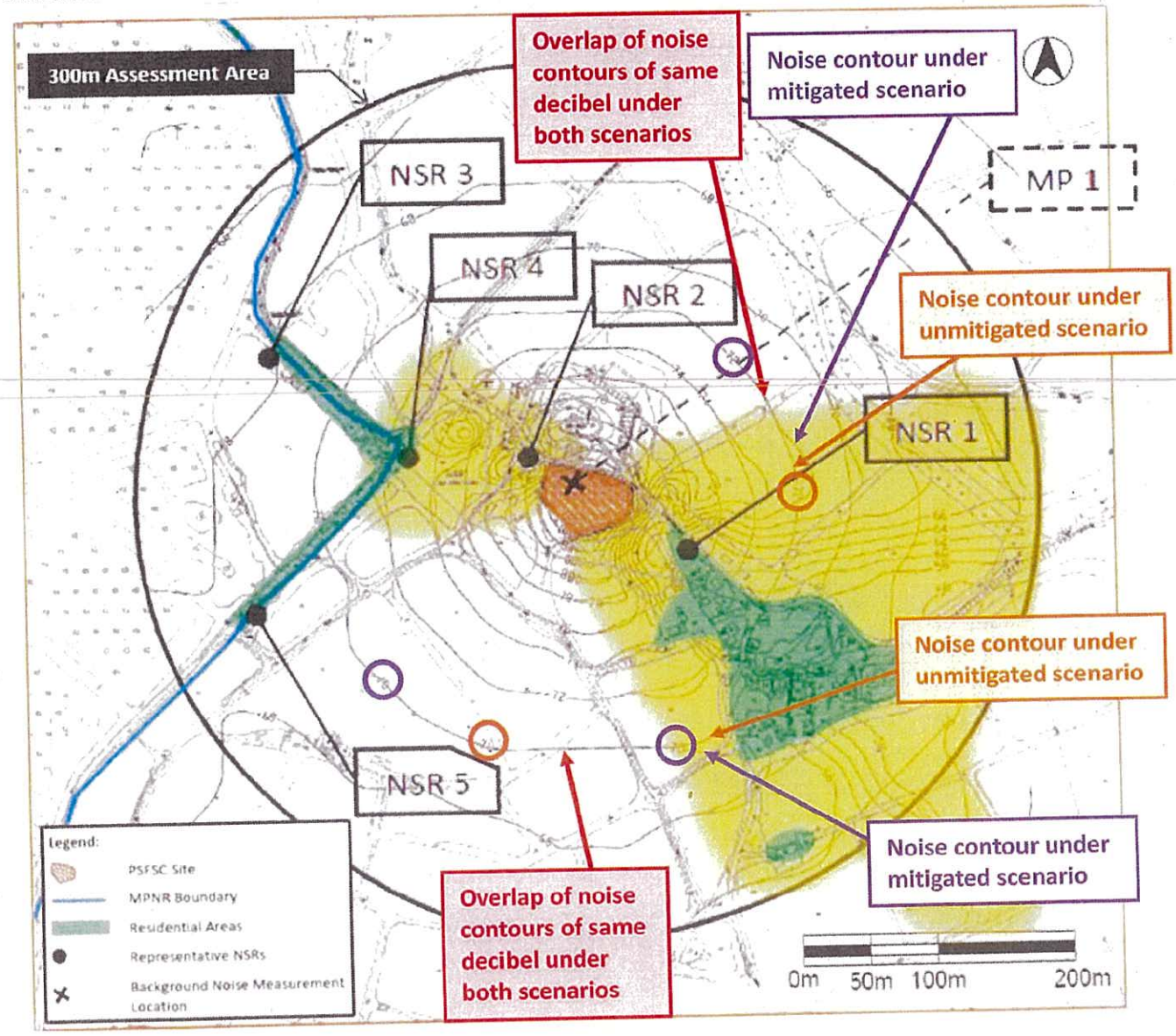
6.1. A.1.12 stated that *"Operation stage ecological impacts are not anticipated"*. As shown in the drawing in Figure A1-4, there will be a lot of large windows or glass doors/panels in the new PSFSC. **The EEA seems to neglect the risk of bird collision during the operation phase.** Below is the paragraph about bird collision in my email communication with WWF - Hong Kong on 14 March 2019.

> *"As I have mentioned in the previous meetings already, given that Mai Po is in such an ecologically sensitive location, I would expect the "new" PSFSC and the renovated EC would be bird friendly buildings, and I would expect the glass windows and panels in these buildings would be specially treated to avoid bird collision (no matter there were many bird collision incidents at Mai Po or not). For visual markers on glass windows/panels, instead of the normal straight lines or dots designs, there could be creative and artistic solutions to this (such as translucent silhouettes of trees/ lines of water birds/lines of writing "WWF - Hong Kong/Peter Scott Field Studies Centre/Mai Po Nature Reserve" etc). Careful considerations should also be given on the internal and external lighting arrangement. There are many documents in the US on bird collision and bird friendly buildings. Here are two links to the documents by Audubon Minnesota and American Bird Conservancy on best practices for bird safety and bird-friendly building design for your reference.*
> *http://mn.audubon.org/conservation/birdsafe-buildings*
> *https://abcbirds.org/program/glass-collisions/"*

7. Final remarks

HKBWS understands the EEA and all the aforementioned recommendations are not statutory requirements, therefore, it heavily relies on the commitment of WWF - Hong Kong to set a strict standard for contractors and workers to follow for the conservation of the Deep Bay wetlands and to ensure the redevelopment of PSFSC to be conducted at a standard that is in line with the conservation importance of the internationally recognized Ramsar Site. The works of WWF - Hong Kong would also set an important example for other developments in the Deep Bay area. We hope our comments are useful and will be taken into consideration, such that the demolition and construction works will be carried out in a more comprehensive manner to safeguard all important bird foraging and roosting grounds in the Deep Bay wetlands. Thank you for your kind attention.

Figure 2. Overlaying Figures A3-1, A3-2 and A3-4 of PSFSC EEA, noise levels at the residential areas were significantly reduced (areas highlighted in yellow) with the use of 5m and 10m noise barriers under the mitigated scenario. However, there seems to be little noise reduction in the fishponds, wetlands and *Gei Wais*. The mitigated noise level is still predicted to range from 66dB to 86dB, just like the noise contours in the unmitigated scenario.



Yours faithfully,

Woo Ming Chuan
Senior Conservation Officer
The Hong Kong Bird Watching Society

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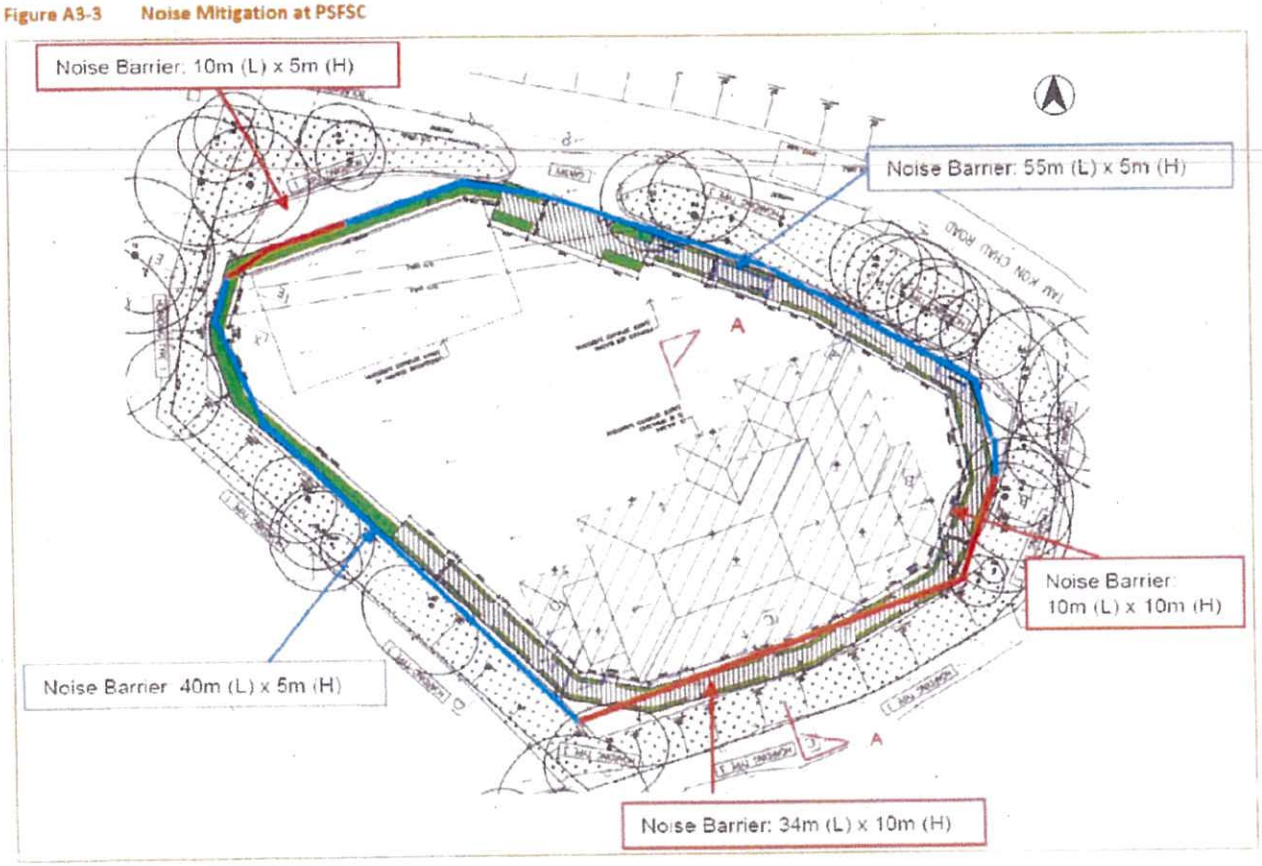
Figure 1. Noise mitigation at PSFSC proposed in the EEA and used for simulation of noise contours under the mitigated scenario (extracted from Figure A3-3 of the PSFSC EEA).



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RECEIVED
14 SEP 2021
Town Planning Board

強烈反對上述 A/YL-MP/309 及 A/YL-MP/315 工程

上述工程是單程路路面現時已經非常狹窄，亦沒有行人路，常常發生人車爭路，對駕駛人士及行人做成生命威脅。

本人是一名養魚農民亦是村民，一直使用該唯一的單程道路出入市區，看到近期該路面變得非常繁忙，該道路路面非常狹窄是唯一出入的單程路，已導致常常塞車不止，危險情況也時常發生，最離譜是常要倒車出青山公路(米埔段)情景險象環生，亦曾多次報警讓警方到現場處理，道路車輛已超出該路的負荷，對本村居民車輛出入已做成極大危險及不方便。

因此該道路是唯一的行車單程路，沒有行人路，來觀鳥人士更將該唯一行車單程路作為行人路，時常導致人車爭路的一面，對行人及駕駛人士做成生命威脅。

米埔自然保護區要發展擴建中心前，應該首要處理行人通道及交通安全的問題，讓市民、觀鳥人士及使用該道路人士有交通安全設施，才繼續擴建。而不是自私只顧自己擴建基金會，不理對村民、觀鳥人士及使用該道路人士的安全。

07-09-2021

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強烈反對上述 A/YL-MP/309 及 A/YL-MP/315 工程

上述工程是單程路路面現時已經非常狹窄，亦沒有行人路，常常發生人車爭路，對駕駛人士及行人做成生命威脅。

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劉鎮

07-09-2021

5-10

強烈反對上述 A/YL-MP/309 及 A/YL-MP/315 工程

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葉德理

07-09-2021

5-11

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07-09-2021

5-12

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07-09-2021

5-13

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余常光

07-09-2021

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07-09-2021

5-16

RECEIVED
16 SEP 2021
Town Planning Board

強烈反對上述 A/YL-MP/309 及 A/YL-MP/315 工程

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Zoen, chan Ka 余王勤

陳雪雲 卓

07-09-2021

5-17

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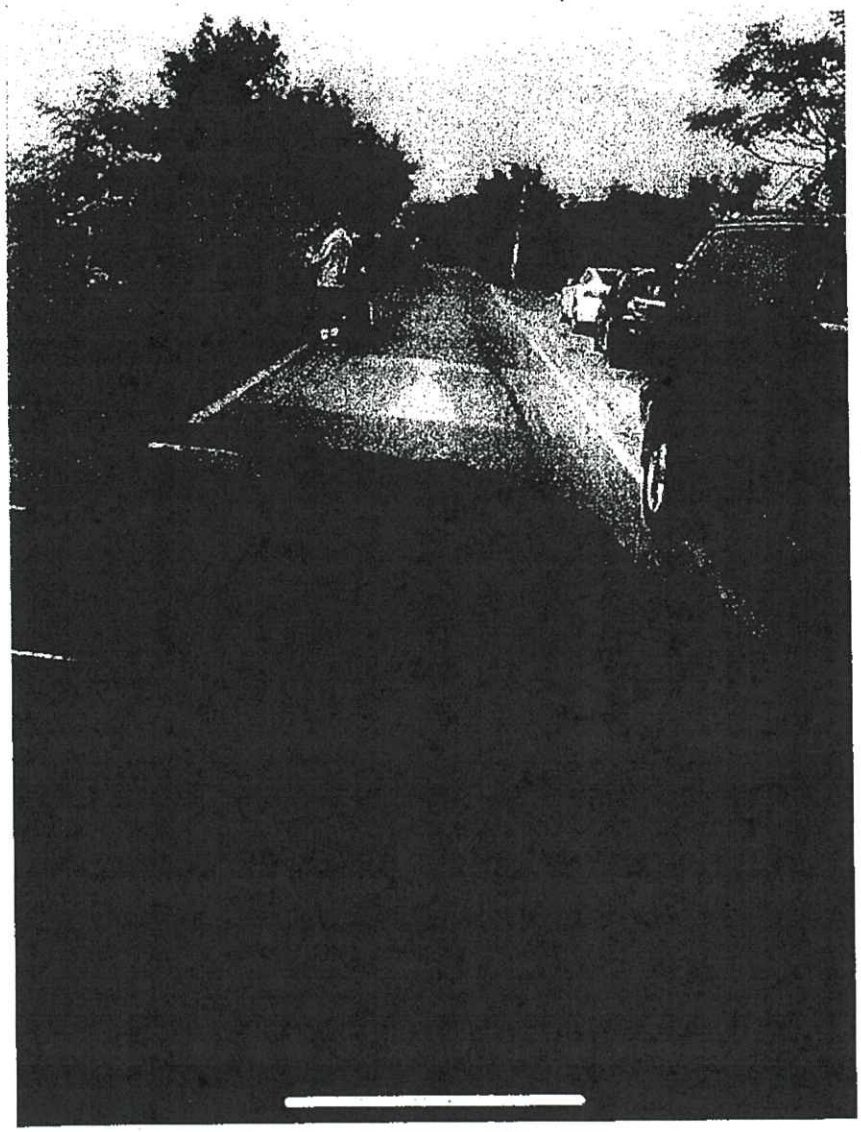
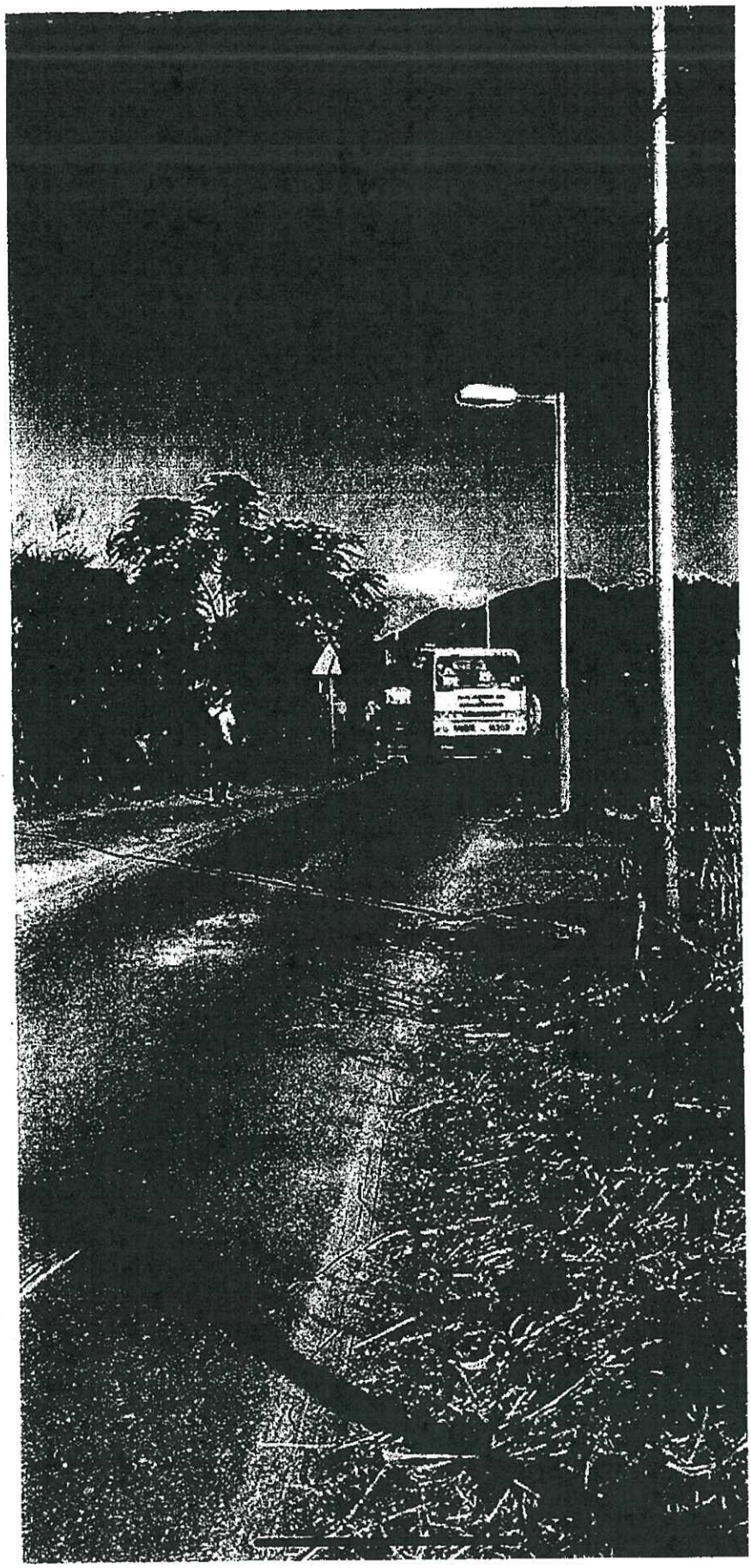
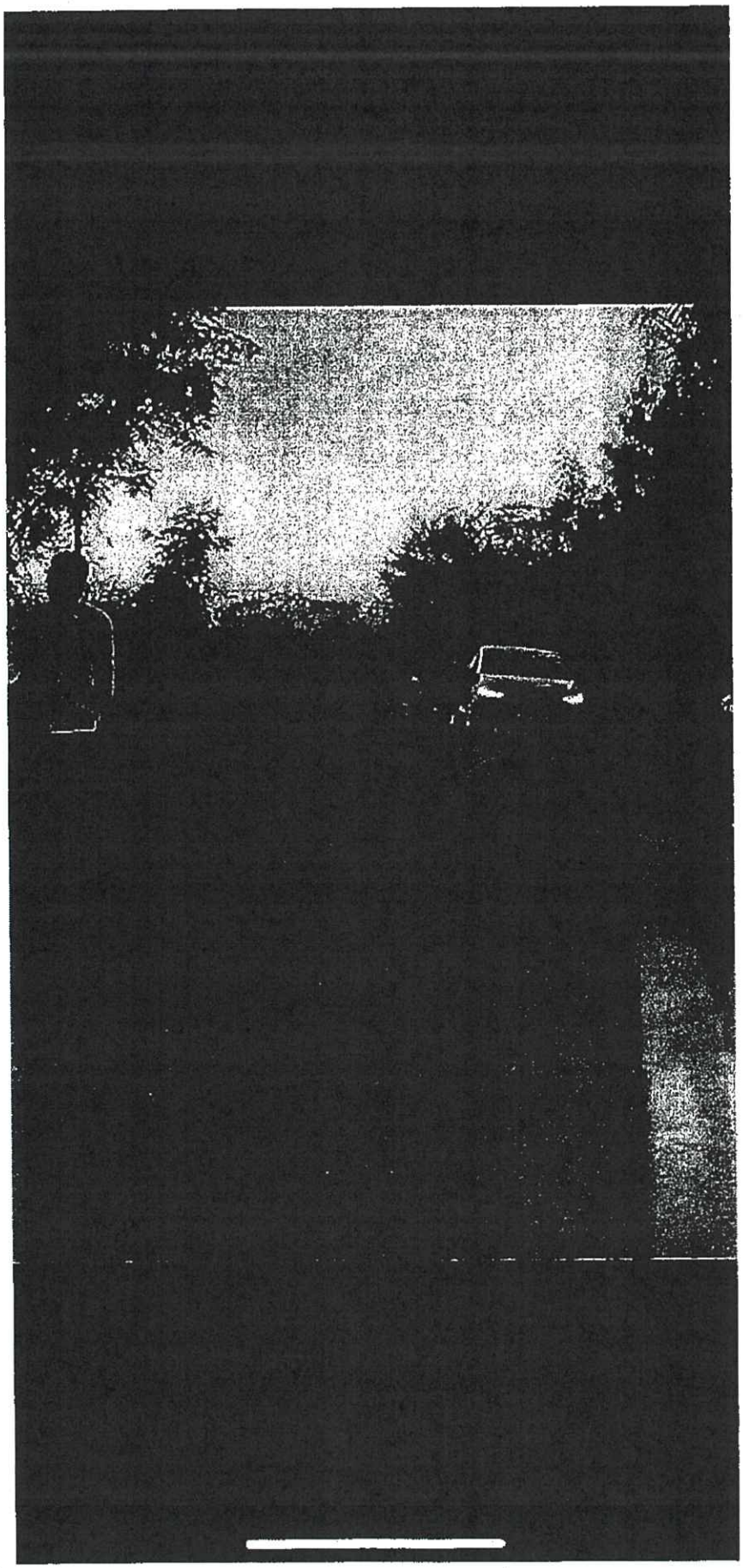
陳建成

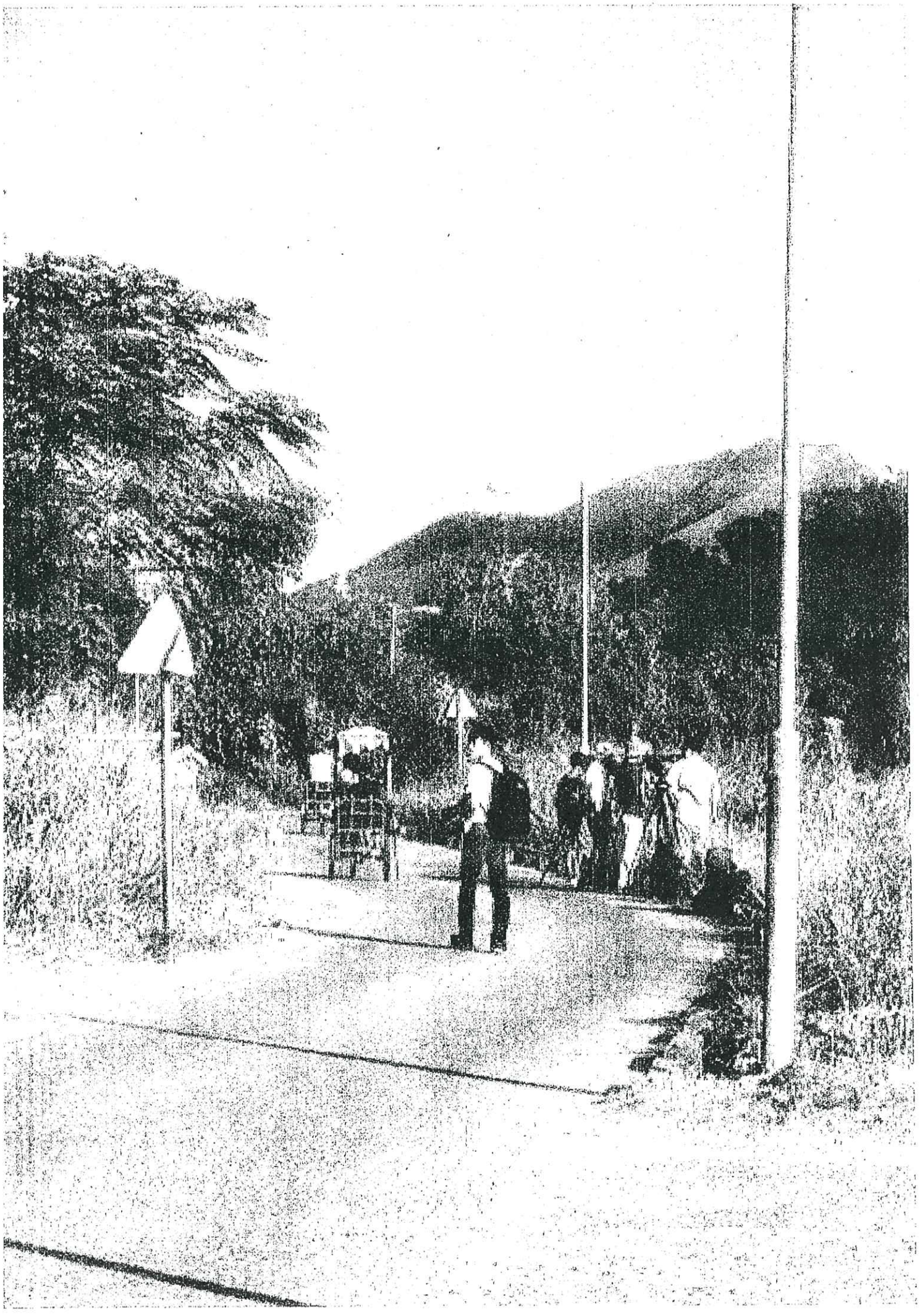
07-09-2021

[redacted]









5-18

元朗區議會
YUEN LONG DISTRICT COUNCIL

關於規劃申請（編號A/YL-MP/309）進一步提交資料持反對意見

敬啟者：

申請人早前未向城規會申請已擅自在保育地區進行工程，違反了城市規劃條例。而規劃署一般處理上述個案時，不會即時受理申請個案，會待事主先行回覆及工程即時停工，規劃署會到事發地點發覺事主已經將土地回復原貌後發出一封滿意恢復原狀通知書的文件予事主，其後事主才可以重新作上述用途的規劃申請。

本人意指申請人未曾經過以上申請流程，就馬上向城市規劃委員會申請工事？故此，本人反對上述規劃申請！

此致

城規會
秘書處

RECEIVED
- 2 SEP 2021
Town Planning Board

簽署：

元朗區議員 文富穩 BBS

2021年9月1日

E-MAIL: [redacted] 電話： [redacted] 傳真：

Recommended Advisory Clauses

(a) To note the comments of the District Lands Officer/Yuen Long, Lands Department (DLO/YL, LandsD) that the Site would affect (i) Short Term Tenancy (STT) No. 1159 currently let for the purpose of "Site for carparking, Staff Quarters and Visitors Quarters including a retail shop all in connection with the operation of the adjacent Mai Po Marshes Nature Reserve" for a fixed term of 5 years commencing from 1.10.1989 and thereafter yearly. Consent should be sought from the tenant on the proposed utility installation; (ii) Scheme Boundary – Express Rail Link, Vesting Boundary – Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link and Control of Building Plan Boundary –Express Rail Link. Comment from MTRCL should be sought; and (iii) village boundary of Mai Po Tsuen. Comment from District Officer/Yuen Long should be sought; and (iv) proposed installation adjoins Government Land Licence No. Y08235 and various private lots. The applicant should be reminded to exercise care to avoid causing any damage and disturbance to the nearby licence and private lots. The applicant has to apply for a STT to give effect to the proposal. However, there is no guarantee at this stage that the STT would be approved. Such application will be dealt with by LandsD acting in the capacity of the land lord at the discretion of LandsD, and if it is approved under such discretion, the approval would be subject to such terms and conditions including amongst others, the payment of rent and administrative fee as may be imposed by LandsD;

(b) to note the comments of the Commissioner for Transport (C for T) that the Site is along a section of Tam Kon Chau Road which is connected to Castle Peak Road – Mai Po. Tam Kon Chau Road is not managed by Transport Department (TD) and its land status should be clarified with LandsD by the applicant. The management and maintenance responsibilities of Tam Kon Chau Road should be clarified with the relevant lands and maintenance authorities accordingly. All vehicles of 10m or above are currently prohibited to enter Tam Kon Chau Road. No vehicle is allowed to queue back to or reverse onto/from public road at any time during the planning approval period;

(c) to note the comments of the Chief Highway Engineer/New Territories West, Highways Department (CHE/NTW, HyD) that Tam Kon Chau Road is not maintained by HyD; and adequate drainage measures should be provided to prevent surface water running from the Site to the nearby public roads and drains;

(d) to note the comments of the Director of Environmental Protection (DEP) that the applicant should implement appropriate pollution control measures to minimise short-term environmental impacts during construction. Reference could be made to relevant publications/guidelines including the 'Recommended Pollution Control Clauses for Construction Contracts and ProPECC PN1/94 'Construction Site Drainage'. The applicant should pay attention to the following requirements as set out in ProPECC PN 1/94:

  (i) to properly handle the sewage arising from construction work force, such as to provide portable toilets and have the portable toilets maintained and the sewage collected by licensed collector; and

  (ii) discharge from the construction site, if any, shall be adequately treated before discharge to comply with discharge licence under Water Pollution Control Ordinance (WPCO) and WPCO – Technical Memorandum;

(e) to note the comments of the Chief Town Planner/Urban Design and Landscape, Planning Department (CTP/UD&L, PlanD) that:

(i) the proposed utility installation involves excavation up to 1m deep. The applicant is reminded that the excavation should be carried out away from the Tree Protection Zone and trenching of roots should be avoided. Proper tree preservation measures should be undertaken to avoid damage to existing trees during the excavation. Please refer to the guidelines promulgated by the Development Bureau on Tree Preservation during construction; and

(ii) the applicant is reminded that approval of the application under the Town Planning Ordinance does not imply approval of tree works such as pruning, transplanting and felling under lease. The applicant should seek comments and approval from the relevant authority on the proposed tree works and compensatory planting proposal, where appropriate; and

(f) to note the comments of the Chief Engineer/Construction, Water Supplies Department (CE/C, WSD) that exiting water mains in the area will be affected (**Plan A-2** of the RNTPC Paper), the cost of any necessary diversion shall be borne by the applicant. In case it is not feasible to divert the affected water mains, a waterworks reserve within 1.5m from the centre line of the water mains shall be provided to WSD. No structure shall be built or materials stored within the waterworks reserve. Free access shall be made available at all times for staff of the Director of Water Supplies and their contractor to carry out construction, inspection, operation, maintenance and repair works. No trees or shrubs with penetrating roots may be planted within the waterworks reserve or in the vicinity of the water mains shown on **Plan A-2**. Government shall not be liable to any damage whatsoever and howsoever caused arising from burst or leakage of the public water mains within and in close vicinity of the Site.