# **Detailed Comments from Government Departments**

### Detailed comments of the Chief Town Planner/Urban Design and Landscape, Planning Department:

The applicant should note that approval of the subject application does not imply approval of tree works such as pruning, transplanting and/or felling. The applicant should be reminded to approach relevant authority/government department(s) to obtain necessary approval on tree works, where appropriate.

### **Detailed comments of the Chief Engineer/Construction, Water Supplies Department:**

1. The applicant shall provide a letter undertaking to comply with his department's following requirements: (a) implementation of the measures proposed in submitted risk assessment report to the satisfaction of his department; (b) a sewage holding tank system provided for foul effluent disposal shall be at a distance of not less than 30m from any water course. The whole system shall be properly maintained and desludged at a regular frequency. All sludge shall be carried away and disposed of outside the Water Gathering Grounds (WGG); (c) the applicant shall implement preventive, mitigation, contingency and remedial measures for preventing and containing overflow, leakage and spillage of sewage during operation and adverse weather conditions such as flooding and heavy rain; (d) performance verification and long-term maintenance of the proposed measures to demonstrate a long-term commitment on no material increase in pollution effect within WGG; (e) all spoils arising from the site formation and building construction works shall be contained and protected to prevent all nearby water courses from being polluted or silting up; (f) the applicant shall connect the whole of the foul/sewage system to the public sewers when they become available; and (g) the whole of foul effluent shall be conveyed through cast iron pipes or other approved material with sealed joints and hatched boxes from the proposed houses to the sewage holding tank system;

2. for provision of water supply to the development, the applicant may need to extend his/her inside services to the nearest suitable government water mains for connection. The applicant shall resolve any land matter (such as private lots) associated with the provision of water supply and shall be responsible for the construction, operation and maintenance of the inside services within the private lot to his department's standards; and

3. standard pedestal hydrant cannot be provided in the vicinity of application site (the Site).

# **Detailed comments of the Director of Electrical and Mechanical Services:**

1. No particular comment on the document from electricity supply safety aspect; and

2. in the interests of public safety and ensuring the continuity of electricity supply, the parties concerned with planning, designing, organising and supervising any activity near the underground cable or overhead line under the Site should approach the electricity supplier (i.e. CLP Power) for the requisition of cable plans (and overhead line alignment drawings, where applicable) to find out whether there is any underground cable and/or overhead line within and/or in the vicinity of the Site. They should also be reminded to observe the Electricity Supply Lines (Protection) Regulation and the "Code of Practice on Working near Electricity Supply Lines" established under the Regulation when carrying out works in the vicinity of the electricity supply lines.

#### **Detailed comments of the Director of Fire Services:**

The proposed Small House should not encroach on any existing emergency vehicular access or planned emergency vehicular access according to the Lands Department's record.

# Detailed comments of the Chief Building Surveyor/New Territories East 2 and Rail, Buildings Department:

1. All non-exempted ancillary site formation and/or communal drainage works are subject to compliance with Buildings Ordinance; and

2. Authorized Person must be appointed for the site formation and communal drainage works referred above.

Appendix III of RNTPC Paper No. Y/SK-HC/5

	1
就規劃申請/覆核提出意見 Making Comment on	Planning Application / Review
參考編號 Reference Number:	221231-155742-32606
提交限期 Deadline for submission:	20/01/2023
提交日期及時間 Date and time of submission:	31/12/2022 15:57:42
有關的規劃申請編號 The application no. to which the comment relates	Y/SK-HC/5
「提意見人」姓名/名稱 Name of person making this comment:	先生 Mr. steve
意見詳情 Details of the Comment : 加劇鄉郊交通嚴重,污染附近自然環境區域	
	· · · · · · · · · · · · · · · · · · ·

2

就規劃申請/覆核提出意見 Making Comment on Planning Application / Review		
参考編號 Poforon og Number	230111-150256-51837	
Kelerence Number:		
提交限期	20/01/2000	
Deadline for submission:	20/01/2023	
提交日期及時期		
Date and time of submission:	11/01/2023 15:02:56	
有關的規劃申請編號	Y/SK-HC/5	
The application no. to which the comment relates:		
「提意見人」姓名/名稱		
Name of person making this comment:	小姐 Miss, CHAN KA LAM	
音目送悟		
Details of the Comment .		
Ubject		
it is 90% on conservation area		

🗌 Urgent 📋 Return Receipt Requested 👘 Sign 🗍 Encrypt 🗋 Mark Subject Restricted 🗍 Expand personal&publi



Y/SK-HC/5 DD 249 Wang Che Conservation Area 13/01/2023 02:29

From: To: File Ref:

tpbpd <tpbpd@pland.gov.hk>

Y/SK-HC/5

Lot 764 in D.D. 249 and Adjoining Government Land, Wang Che, Sai Kung

Site area: About 123.25sq.m includes Government Land of about 58.22sq.m

Zoning: "Conservation Area" and "VTD"

Proposed Amendment: Rezone to "VTD

Dear TPB Members,

Strong objections, the "V' zone element is minuscule, half the site is Government Land and the Application Site falls within water gathering ground, hence its zoning.

Soil nailing of a slope close to the proposed development is required for slope stabilization and this would impact a number of trees both on and outside the site. That such a detailed Tree Survey Report is required is indicative of the impact the development would have on the local flora. The cumulative impact and probability of damage to some of the trees is far too great to justify for the construction of a single dwelling.

That the proposed effluent storage tank would have to be serviced once a week is a cause for concern with regard to the possibility of lax compliance and the possible impact of adverse weather conditions or other events on a continuous service pattern.

There are still undeveloped lots in the village, some being used for parking.

Approval of this application would encourage other applications to encroach on the CA zoning.

Mary Mulvihill



19 January 2023 Chairman and Members Town Planning Board 15/F, North Point Government Offices 333 Java Road, North Point, Hong Kong Fax: 2877 0245; Email: tpbpd@pland.gov.hk

To rezone the application site from "Conservation Area" and "Village Type Development" to "Village Type Development" (Application No. Y/SK-HC/5)

Dear Chairman and Members,

Designing Hong Kong Limited **objects** the captioned for the following reasons:

- Majority of the area is zoned as "**Conservation Area (CA)**". The planning intention of this zone is primarily for protecting and retaining 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. There is a general presumption against development in this zone. In general, only developments that are needed to support the conservation of the existing natural landscape or scenic quality of the area or are essential infrastructure projects with overriding public interest may be permitted.
- Land is still available within the "V" zone of Ho Chung, Tin Liu and Wang Che which are primarily intended for Small House development. It is considered more appropriate to concentrate the proposed development with in the "V" zone for more orderly development pattern, efficient use of land and provision of infrastructure and services. There is no strong planning justification in the submission for a departure from the planning intention.
- Ho Chung Road and the vehicle access to Wang Che Village which is the onlyroad connection to the proposed site is **a substandard road**. The increase of traffic flow may bring negative impact on the traffic and bring dangerous to other vehicles and pedestrian.
- It is mentioned in the Explanatory Statement that there is lack of sewerage infrastructure in the area. Due to the lack of monitoring of the efficiency of septic tanks and soakaway system in rural area, it is sceptical whether the rezoning will cause negative impacts to the environment and the water gathering ground designated by the Water Supplies Department.
- The approval of the application would set an undesirable precedent for other applications within the "Conservation Area (CA)" zone, and lead to a general degradation of the natural environment of the area.



Here we submit our concerns for your consideration.

Yours, Designing Hong Kong Limited

<u>Form No. S12A</u> 表格第 S12A 號

# APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP.131)

# 根 據 《 城 市 規 劃 條 例 》( 第 131 章 ) 第 12A 條 遞 交 的 修 訂 圖 則 申 請

Applicant who would like to publish the <u>notice of application</u> 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: <u>https://www.info.gov.hk/tpb/en/plan\_application/apply.html</u>

申請人如欲在本地報章刊登<u>申請通知</u>,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

> 2022年 12月 20日 收到·城市規劃委員會 只會在收到所有必要的資料及文件後才正式確認收到 申請的日期。

> > 2 0 DEC 2022

This document is received on <u>LOUGES LOLE</u> The Town Planning Board will formally acknowledge the date of receipt of the application only upon receipt of all the required information and documents.

#### <u>General Note and Annotation for the Form</u> <u>填寫表格的一般指引及註解</u>

- \* "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	Application No. 申請編號	Y/ 5K-HC/5
請勿填寫此欄	Date Received 收到日期	2 0 DEC 2022

- 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 <u>http://www.info.gov.hk/tpb/</u>. 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: <u>http://www.info.gov.hk/tpb/</u>),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. Litter About the state of the planning the required information or the required copies are incomplete. Litter About the state of the planning the state of the planning the planning of the state of the planning the planning of the state of the planning between the planning betwe

# 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 )

Yip Tin Leung

# 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 )

Albert So Surveyors Ltd.

3.	Application Site 申請地點	
(a)	Whether the application directly relates to any specific site? 申請是否直接與某地點有關?	Yes 是 ☑ No 否 □ (Please proceed to Part 6 請繼續填寫第 6 部分)
(b)	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)	Lot No. 764 in D.D. 249 and Adjoining Government Land Wang Che, Sai Kung, New Territories 新界西貢橫輋丈量約份第249約地段第764號及毗連政府土地
(c)	Site Area 申請地點面積	sq.m 平方米   ☑ About 約

	Area of Government land included (if any) 所包括的政府土地面積 (倘有)	58.22sq.m 平	方米   ☑ About 約	
(e)	Current use(s) 現時用途	Vacant 空置		
		<ul> <li>(If there are any Government, institution or community facili and specify the use and gross floor area)</li> <li>(如有任何政府、機構或社區設施,請在圖則上顯示,並</li> </ul>	ties, please illustrate on plan 註明用途及總樓面面積)	
4.	"Current Land Owner" of A	Application Site 申請地點的「現行土地扬	確有人」	
The	applicant 申請人 -			
	is the sole "current land owner" <sup>#&amp;</sup> (p 是唯一的「現行土地擁有人」 <sup>#&amp;</sup> ()	lease proceed to Part 6 and attach documentary proof of c 請繼續填寫第6部分,並夾附業權證明文件)。	ownership).	
	is one of the "current land owners" <sup>#</sup> 是其中一名「現行土地擁有人」 <sup>#&amp;</sup>	<sup>&amp;</sup> (please attach documentary proof of ownership). <sup>&amp;</sup> (請夾附業權證明文件)。		
	is not a "current land owner" <sup>#</sup> . 並不是「現行土地擁有人」 <sup>#</sup> 。			
	The application site is entirely on Go 申請地點完全位於政府土地上(訪	overnment land (please proceed to Part 6). 青繼續填寫第6部分)。		
5.	Statement on Owner's Const 就土地擁有人的同意/通	ent/Notification 知土地擁有人的陳述	/	
		of the Land Registry as at	(DD/MM/YYY), this	
(a)	According to the record(s) application involves a total of 根據土地註冊處截至	"current land owner(s)" <sup>#</sup> . 年日白 也擁有人」 <sup>#</sup> 。	的記錄,這宗申請共牽	
(a) (b)	According to the record(s) application involves a total of 根據土地註冊處截至	年	的記錄,這宗申請共牽	
(a) (b)	According to the record(s) of application involves a total of 根據土地註冊處截至		的記錄,這宗申請共牽	
(a) (b)	According to the record(s) of application involves a total of 根據土地註冊處截至		的記錄,這宗申請共牽	
(a) (b)	According to the record(s) of application involves a total of 根據土地註冊處截至	年	的記錄,這宗申請共牽 同意的詳情 ate of consent btained DD/MM/YYYY) 得同意的日期 日/月/年)	
(a) (b)	According to the record(s) application involves a total of	<pre></pre>	的記錄,這宗申請共牽 同意的詳情 ate of consent btained DD/MM/YYYY) 得同意的日期 日/月/年)	
(a) (b)	According to the record(s) of application involves a total of 根據土地註冊處截至	年	的記錄,這宗申請共牽 司意的詳情 ate of consent btained DD/MM/YYYY) 保同意的日期 日/月/年)	

· · · · · ·

۰,

De	tails of the "cu	rrent land owner(s)	)" <sup>#</sup> notified ⊟	獲通知「現行土」	地擁有人」"	的詳細資料
No La 「 有	o. of 'Current nd Owner(s)' 現行土地擁 人」數目	Lot number/addr Land Registry wl 根據土地註冊處	ress of premises here notificatior 記錄已發出通	as shown in the ra n(s) has/have been 知的地段號碼/函	ecord of the given 氪所地址	Date of not/fication given (DD/MM/YYYY) 通知日期(日/月/年)
					/	
(Plea	ase use separate s	heets if the space of	any box above is	insufficient. 如下列	何何方格的2	
has t 已挧	taken reasonab R取合理步驟以	le steps to obtain co 人取得土地擁有人I	onsent of or giv 的同意或向該。	e notification to ov 人發給通知。詳情	vner(s): '如下:	ska A sett ela EDe
Reas	sonable Steps to	o Obtain Consent o	of Owner(s) 均	得土地拥有人的	可意所採取的	的合理步驟
	sent request fo 於	or consent to the "c (日/月/纪	current land owr 年)向每一名「3	ner(s)" <sup>&amp;</sup> on 現行土地擁有人」	"郵遞要求同	(DD/MM/YYYY) 司意書 <sup>&amp;</sup>
Reas	sonable Steps to	o Give Notification	n to Owner(s)	向土地擁有人發出	出通知所採用	口的合理步驟
	published not 於	ices in local newsp (日/月/ <sup>庄</sup>	apers <sup>&amp;</sup> on 平)在指定報章题	就申請刊登一次通	(DD/MM/Y 訂知 <sup>&amp;</sup>	YYY)
	posted notice	in a prominent pos (DD/MN	itio, on or near	application site/pr	emises <sup>&amp;</sup> on	
	於	(日/月生	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 office(s) or ru 於	relevant owners' c ral committee <sup>&amp;</sup> on (日/月/组	orporation(s)/ov  手)把通知寄往林	wners' committee(s (DD/MM 泪關的業主立案法	s)/mutual aid /YYYY) <團/業主委員	committee(s)/managem 員會/互助委員會或管理
	或有關的鄉哥	事委員會*				
Othe	ers 其他	/				
	others (please 其他(清指明	specify) 引)				
-						
1-						
/						

6.	Plan Proposed to be Amended 擬議修訂的圖則			
(a)	Name and number of the related statutory plan(s) 有關法定圖則的名稱及編號	Approved Ho Chung Outline Zoning Plan No. S/SK-HC/11 蠔涌分區計劃大綱核准圖編號S/SK-HC/11		
(b)	Land use zone(s) involved (if applicable) 涉及的土地用途地帶(如適 用)	"Conservation Area" & "Village Type Development" 「自然保育區」及「鄉村式發展」		

, , , <sup>, ,</sup>

Г

7.	Proposed Amendments 擬議修訂	
(a)	Propose to rezone the application site to the following zone(s)/ (May insert more than one「✓」) (Please illustrate the details 建議將申請地點的用途地帶改劃作下列地帶/用途 (可在多於一個方格內加上「✓」號) (請在圖則顯示詳情)	use(s) on plan)
	Comprehensive Development Area [] 綜合發展區[] Residential (Group □A/□B/□C/□D/□E)[] 住宅 (□甲類/□乙類/□丙類/□丁類/□戊類)[] Agriculture[]農業[] Industrial (Group D)[]工業(丁類)[] Government, Institution or Community[] 政府、機構或社區[] Recreation[]康樂[] Country Park[]郊野公園[] Conservation Area[]自然保育區[] Other Specified Uses (□Business/□Industrial Estate/□] □Others (please specify	<ul> <li>□ Commercial [ ] 商業 [ ]</li> <li>☑ Village Type Development [ ] 鄉村式發展 [ ]</li> <li>□ Industrial [ ] 工業 [ ]</li> <li>□ Open Storage [ ] 露天貯物 [ ]</li> <li>□ Open Space [ ] 休憩用地 [ ]</li> <li>□ Open Space [ ] 綠化地帶 [ ]</li> <li>□ Green Belt [ ] 綠化地帶 [ ]</li> <li>□ Coastal Protection Area [ ] 海岸保護區 [ ]</li> <li>□ Site of Special Scientific Interest [ ] 具特殊科學價值地點 [ ]</li> </ul>
口 Plea 請於	Road 道路 se insert subzone in [ ] as appropriate. [ ]內註明支區,如適用。	□ Others (please specify) 其他 (請註明:)

(b)	Propose to amend the Notes of the Plan(s) 建議修訂圖則的《註釋》
	□ Covering Notes 《註釋》說明頁
	□ Notes of the zone applicable to the Site 適用於申請地點土地用途地帶的《註釋》
	Details of the proposed amendment(s) to the Notes of the Plan, where appropriate, are as follows:
	(Please use separate sheets if the space below is insufficient) 建議修訂圖則的《註釋》的詳情,如適用:
	(如下列空間不足,請另頁說明)
/	
	Proposed Notes of Schedule of Uses of the zone attached
	夾附對《 註釋 》的擬議修訂
8.	Details of Proposed Amendment (if any) 擬議修訂詳情(倘有)
$\checkmark$	Particulars of development are included in the <b>Appendix</b> . 附錄包括一個擬議發展的細節。
	No specific development proposal is included in this application. 這宗申請並不包括任何指定的擬議發展計劃。

# 9. 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 the attached supporting planning statement.
請參考夾附的規劃綱領。

Parts 7 (Cont'd), 8 and 9第7 (續)、第8及第9部分

·····
-/

· · · ·

. .

10. 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 this application 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 して Applicant 申請人 / 🗹 Authorised Agent 獲授權代理人				
Dr. Albert SO Chun HinManaging DirectorName in Block LettersPosition (if applicable)姓名(請以正楷填寫)職位 (如適用)				
Professional Qualification(s) 🗌 Member 會員 / 🗹 Fellow of 資深會員				
<ul> <li>專業資格</li> <li>□ HKIP 香港規劃師學會 / □ HKIA 香港建築師學會 /</li> <li>□ HKIS 香港測量師學會 / □ HKIE 香港工程師學會 /</li> <li>□ HKILA 香港園境師學會/ □ HKIUD 香港城市設計學會</li> <li>□ RPP 註冊專業規劃師</li> </ul>				
Others 其他 FRICS, MRTPI				
on behalf of 代表 Albert So Surveyors Ltd.				
✓ Company 公司 / □ Organisation Name and Chop (if applicable) 機構名稱及蓋章(如適用)				
Date 日期				
·····································				
Kemark 摘註         The materials submitted in this application 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 含約亦命上載至禾員會網頁供公眾在專瀏覽及下載。				
Winning Style				
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				
<ol> <li>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:</li> <li>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:</li> </ol>				
<ul> <li>(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</li> <li>(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。</li> </ul>				
<ol> <li>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.</li> <li>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。</li> </ol>				
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。				

# APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) 根據城市規劃條例(第 131 章)第 12A 條遞交的修訂圖則申請

Development Proposal (only for indicative purpose) 擬議發展的發展計劃(只作指示用途)

1. Development Proposal 擬議發展計	图
<ul> <li>✓ Proposed Gross floor area (GFA) 擬議總樓面前</li> <li>○ Proposed plot ratio 擬議地積比率</li> <li>✓ Proposed site coverage 擬議上蓋面積</li> <li>✓ Proposed number of blocks 擬議座數</li> <li>✓ Proposed number of storeys of each block</li> <li>每座建築物的擬議層數</li> </ul>	面積 195.09 sq.m. 平方米 □ About 約 □ About 約 100% (over Lot No. 764 in D.D. 249)% ☑ About 約 
✓ Proposed building height of each block 每座建築物的擬議高度	8.23 m 米 ☑ About 約 mPD 米(主水平基準上) □ About 約
☑ Domestic part 住用部分 GFA 總樓面面積 number of units 單位數目 average unit size 單位平均面積 * estimated number of residents 估計住客	195.09
<ul> <li>Non-domestic part 非住用部分</li> <li>hotel 酒店</li> </ul>	<u>GIX 認識面面積</u> 
<ul> <li>□ office 辦公室</li> <li>□ shop and services/eating place</li> <li>商店及服務行業/食肆</li> </ul>	sq.m.平方米 🗌 About 約 sq.m.平方米 🗌 About 約
<ul> <li>Government, institution or communit</li> <li>政府、機構或社區設施</li> </ul>	y facilities (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)
<ul> <li>□ Open space 休憩用地</li> <li>□ private open space 私人休憩用地</li> <li>□ public open space 公共休憩用地</li> </ul>	(please specify land area(s)) (請註明面積) sq.m.平方米□ Not less than 不少於 sq.m.平方米□ Not less than 不少於

Appendix 附錄

□ Transport-related facilities 與運輸有關的設施				
□ parking spaces 停車位	(please specify type(s) and number(s)) (請註明種類及數目)			
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)				
□ loading/unloading spaces 上落客貨車位	(please specify type(s) and number(s)) (請註明種類及數目)			
Taxi Spaces 的十重位				
Coach Spaces 旅游巴甫位				
Light Goods Vehicle Spaces 輕刑貨車車位				
Medium Goods Vehicle Spaces 中刑貨車車位				
Heavy Goods Vehicle Spaces 重刑貨車車位				
Others (Please Specify) 甘他 (諸別問)				
Others (Hease Speensy) Steller (in 54-54)				
6				
□ other transport related facilities	(please specify type(s) and number(s))			
上 one mansport fact activities	(6月6上"沙川里光行/文安(口)			
兵 世兴 建制 行 购口 功 2 加				
Use(a) of different floors (if annlieshlo) 夕捷國的田玲(加速田)				
Ose(s) of different noors (if applicable) 吞壤層的用述(如適用)	0			
[Block number] [Floor(s)]	[Proposed use(s)]			
[座數] [層數]	[擬議用途]			
1	Private Residential			
Proposed use(s) of uncovered area (if any) 露天地方(倘有)	的擬議用途			
Any vehicular access to the site? 是不有重路通往\\\\\\\\\\\				
Vec E There is an existing access (please indicate the str	eet name, where appropriate)			
「Firster 」「「Here's an existing access. (please indicate the su 有一條用有直敗。(請註用道路之稱(加適用))	eet name, where appropriate)			
有「陳亮有半路。(胡託马道路石碑(如週币)) Unnamed Road				
There is a proposed access (place illustrate on	nlan and specify the width)			
☐ There is a proposed access. (please illustrate on plan and specify the width) 有一條擬議直路。(請在圖則顯示,並註明直路的關度)				
a transmission and the second se				
No 否 □				
For Development involving columbarium use, please complete t	he table in the Annex to this Appendix.			
如發展涉及靈灰安置所用途,請填妥於此附件後附錄的表格。				

2. 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,請另頁註明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 No 否	<ul> <li>□ Please provide details 請提供詳情</li> <li></li></ul>	
Does the development proposal involve the operation on the right? 擬議發展是否涉及右 列的工程?	Yes 是 No 否	<ul> <li>✓ (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)</li> <li>(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)</li> <li>□ Diversion of stream 河道改道</li> <li>□ Filling of pond 填塘</li> <li>Area of filling 填塘面積</li></ul>	
Would the development proposal cause any adverse impacts? 擬議發展計劃會否造 成不良影響?	On environme On traffic 對 On water supp On drainage 当 On slopes 對 Affected by sl Landscape Im Tree Felling Visual Impact Others (Please Please state m at breast heig] 請註明盡量源 徑及品種(倘 Please re 請參考夾]	mt 對環境       Yes 會       No 不會       Yes 會         交通       Yes 會       No 不會       Yes 會         bly 對供水       Yes 會       No 不會       Yes         bly 對拔水       Yes 會       No 不會       Yes         bly jube       Yes 會       No 不會       Yes         pact 構成景觀影響       Yes 會       No 不會       Yes         pact 構成景觀影響       Yes 會       No 不會       Yes         yes Specify) 其他 (請列明)       Yes 會       No 不會       Yes         i 構成視覺影響       Yes 會       No 不會       Yes         i 構成視覺影響的措施。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       Jib       Jib         jube       Jube       Jube       Jube       Jub         diagon       Jub       Yes       No 不會       Yes         i 相応, 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       Jub       Jub       Jub       Jub         i diagon       Jub       Jub       Jub       Jub       Jub         i diagon	

Appendix (Cont'd) 附錄 (續)



Appendix Ia of RNTPC Paper No. Y/SK-HC/5

(Est. 1995)

#### ALBERT SO SURVEYORS LTD.

Our Ref.: AS024/17/III/77

14 November 2022

By Hand

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

Dear Sir/Madam,

#### Application for Amendment of Plan under Section 12A from "Conservation Area" and "Village Type Development" to "Village Type Development" for a New Territories Exempted House Development Lot No. 764 in D.D. 249 ("Subject Lot") and Adjoining Government Land <u>Wang Che, Sai Kung, New Territories</u>

As instructed by and on behalf of the registered owner of the Subject Lot, Mr. Yip Tin Leung ("the Applicant"), we herewith submit an application for amendment of plan under Section 12A of the Town Planning Ordinance to rezone the Subject Lot and adjoining Government Land from "Conservation Area" and "Village Type Development" to "Village Type Development".

The following documents are enclosed for your kind consideration:

- (a) Original authorisation letter
- (b) Documentary proof of land ownership
- (c) 1 signed original application form
- (d) 4 copies of the supporting planning statements

Should you have any enquiries, please contact the undersigned, or our Dr. Tsz-choi Wong or Mr. William Wong at 2882 3183. Thank you.

Yours faithfully, For and on behalf of ALBERT SO SURVEYORS LTD.

Albert So Managing Director

Encl.

- (a) Original authorisation letter
  (b) A set of Documentary proof of land ownership
  (c) 1 signed original application form
  (d) 4 copies of the supporting planning statements
- c.c. Client (by email) DPO/SKIs (by email; Attn: Mr. Matthew Tai)

AS/TC/ww \\ASSL\2020\AS00320\AS024'17'III'77.docx

P. 1 of 1

估價、相售、規劃及發展顧問 董事總經理·蘇振顯 地產代理(公司牌照號碼:C-007868)

Regulated by RICS 香港九龍官塘海濱道133號萬兆豐中心17樓H2室、電話:(852)28823183 圖文傳真:(852)28822810 Unit H2, 17/F, MG Tower, 133 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong Tel:(852)2882,3183 Fax:(852)28822810 Email: mail@assl.com.hk VALUERS, ESTATE AGENTS, PLANNING & DEVELOPMENT CONSULTANTS Managing Director: ALBERT SO PhD:MBA.BSC, FRICS, FHKIS, FHIREA, MRTPI



ALBERT SO SURVEYORS LTD.

Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap.131) Rezoning from "Conservation Area" & "Village Type Development" to "Village Type Development" For a New Territories Exempted House Development

Lot No. 764 in D.D. 249 and Adjoining Government Land Wang Che, Sai Kung

# **SUPPORTING PLANNING STATEMENT**

Applicant:	Mr Yip Tin Leung
Prepared by:	Albert So Surveyors Ltd.
Date of Submission:	November 2022

Our Ref.: AS024/17



# **TABLE OF CONTENTS**

Exe	cutive Summary	1
行政	【摘要	2
1.	Introduction	3
2.	Application Site and Its Surroundings	5
	Location	5
	Surrounding of the Site	5
	Accessibility	6
	Existing Condition of the Site	6
3.	Land Status	8
4.	the Proposed Rezoning	9
	Planning History of the Site	9
	The Proposed Rezoning1	0
	The Proposed New Territories Exempted House1	0
	Site Formation Proposal and Slope Stabilisation Works1	0
	Sewerage Proposal1	2
5.	Planning Justifications1	3
	Providing a Fair Opportunity to Exercise the Leasehold Rights under the Subject Land Grant 1	3
	Approval will not result in Additional Development1	3
	No Insurmountable Environmental Impact1	4
	Compatibility with Surrounding Environment1	5
	Not Setting an Undesirable Precedent1	5
6.	Conclusion1	7



# **LIST OF FIGURES**

- Figure 1.1: Location Plan
- Figure 1.2: Outline Zoning Plan Indicating the Location of the Site
- Figure 2.1: Village Environ Plan
- Figure 2.2: Site Context Plan
- Figures 2.3: Site Photos
- Area for Site formation Works and Location of Proposed Soil Nails Figure 4.1:

# LIST OF TABLES

- Table 3.1: Conditions under New Grant No.8351 relevant to Use of the Subject Lot
- Table 4.1: Zonings History of the Subject Lot, the Adjacent Lot, and the Adjoining Government Land
- Table 4.2: **Proposed Development Parameters**

# **APPENDICIES**

- Appendix A: **Response-to-Comment Table**
- Appendix B: New Grant No. 8351
- **Proposed Site Formation Plan** Appendix C:
- Appendix D: Sewerage Impact and Risk Assessment Report
- Appendix E: **Tree Survey Report**



#### **EXECUTIVE SUMMARY**

This is an application ("the Subject Application") for amendment of plan in accordance to Section 12A of the Town Planning Ordinance to rezone Lot No. 764 in D.D. 249 ("the Subject Lot") and a piece of adjoining Government Land ("the Adjoining Government Land") in Wang Che, Sai Kung (altogether "the Site") from "Conservation Area" ("CA") and "Village Type Development" ("V") to "V" for the development of a New Territories Exempted House ("NTEH") and its relevant site formation works ("the Proposed Development").

The Applicant is an indigenous villager of a recognized village known as Wang Che. By a land exchange in June 1994, the Applicant surrendered a larger agricultural lot at the same location and was regranted with the Subject Lot, which falls entirely within the Village Environ, allowing the construction of a NTEH having not more than 3 storeys or 8.23 metres in height for private residential purposes under New Grant No. 8351 ("the Subject New Grant").

Due to unknown reason, the town planning zoning of the Subject Lot under the statutory town plans has not been compatible with the permitted land use under the Subject New Grant. The majority part of the Subject Lot was zoned as "Green Belt" under the Interim Development Permission Area Plan and Development Permission Area Plan, and has later been rezoned as "CA" since the exhibition of the first Ho Chung Outline Zoning Plan in May 1994. As NTEH development is not permitted in "CA" zone, the Subject Lot could not have been developed although the land grant was executed about thirty years ago.

The Applicant hereby submits the Subject Application to seek the approval of the Town Planning Board for the building of a NTEH on the Subject Lot, which is a right under the Subject New Grant, and the relevant required site formation at the Adjoining Government Land. The Proposed Development will not cause insurmountable environmental impact according to the technical reports submitted together with this planning statement.



#### 行政摘要

(內文如與英文版本有任何差異,應以英文版本為準)

本報告書根據《城市規劃條例》第12A條申請修訂圖則(「有關申請」),把新界西貢橫輋 丈量約份第249約地段第764號(「有關地段」)及毗連政府土地(共稱為「申請地點」)由 「自然保育區」地帶及「鄉村式發展」地帶修訂為「鄉村式發展」地帶,以容許與建一 間新界豁免管制屋宇及進行所需之工地平整工程(「擬議發展」)。

申請人為橫輋原居民。根據1994年6月之換地,申請人交回一塊位於相同位置且面積較大的農地,並獲重批有關地段,其位置完全位於認可鄉村範圍內。根據新批土地契約編號 8351(「有關地契」),有關地段容許興建一所不多於三層或8.23米高的建築物,以作私人 住宅用途。

不知何故,有關地段於法定規劃圖則所屬的規劃地帶,與有關地契所容許之用途並不相容。於中期發展審批地區圖則及發展審批地區圖則,有關地段主要被劃為綠化地帶。其後,由1994年5月所展示之第一份蠔涌分區計劃大綱核准圖,有關地段被劃訂為「自然保育區」地帶。由於「自然保育區」地帶不容許作新界豁免管制屋宇之發展,因此有關地段在約三十年前獲批至今仍未能發展。

因此,申請人提出有關申請,尋求城規會之批准,以令有關地段可根據地契,發展新界 豁免管制屋宇,及在毗連政府土地進行所需的工地平整工程。根據技術報告,擬議發展 不會對環境帶來不可克服的負面影響。

基於此規劃綱領所提出的規劃理據,申請人懇請各城規會會員批准是次第12A條修訂圖則 申請。



### 1. INTRODUCTION

- 1.1 This is a submission for an application ("the Subject Application") for amendment of plan in accordance to Section 12A of the Town Planning Ordinance to rezone Lot No. 764 in D.D. 249 ("the Subject Lot") and a piece of adjoining Government Land ("the Adjoining Government Land") in Wang Che, Sai Kung (altogether "the Site") from "Conservation Area" ("CA") and "Village Type Development" ("V") to "V" for the development of a New Territories Exempted House ("NTEH") and its relevant site formation works ("the Proposed Development").
- 1.2 The Site has a total area of about 123.25 m<sup>2</sup>, comprising a piece of private land (i.e. the Subject Lot) of about 65.03 m<sup>2</sup> and a strip of government land (i.e. the Adjoining Government Land) of about 58.22 m<sup>2</sup> situated to the southwest of the Subject Lot. The location of the Site is shown in the following location plan.

FIGURE 1.1 LOCATION PLAN



Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (CAP.131) Rezoning from "Conservation Area" & "Village Type Development" to "Village Type Development" For a New Territories Exempted House Development Lot No. 764 in D.D. 249 and Adjoining Government Land, Wang Che, Sai Kung



1.3 Under the approved Ho Chung Outline Zoning Plan No. S/SK-HC/11 currently in force ("the OZP"), the Site falls within an area zoned "CA" and "V". The location of the Site as shown on the OZP is as follows.



FIGURE 1.2 OUTLINE ZONING PLAN INDICATING THE LOCATION OF THE SITE

- 1.4 There are 7 chapters in this supporting statement. <u>Chapter 1</u> is an introduction to the Subject Application. <u>Chapter 2</u> provides the characteristics of the subject location and the surrounding area, as well as the existing condition of the Site. <u>Chapter 3</u> details the land status and lease conditions of the Subject Lot. <u>Chapter 4</u> introduces the zoning history of the Site and the proposed amendment to the OZP in the Subject Application, which is supported by the planning justifications shown in <u>Chapter 5.</u> <u>Chapter 6</u> provides our concluding remarks.
- 1.5 Having reviewed the comments from the various government departments during the pre-submission stage and the follow-up discussions, an updated response-to-comment table is provided at **Appendix A** for further review.



# 2. APPLICATION SITE AND ITS SURROUNDINGS

#### Location

- 2.1 Wang Che is a recognised village located to the southwest of the Sai Kung Town Centre. It is accessible by a village road branching off from Ho Chung Road.
- 2.2 The Site is situated along the village road and within the Village Environ ("VE") of Wang Che. A copy of the VE plan is provided at <u>Figure 2.1</u>.

FIGURE 2.1 VILLAGE ENVIRON PLAN



#### Surrounding of the Site

- 2.3 Wang Che is a small village currently comprising about 30 NTEHs with a pleasant and quiet rural living environment.
- 2.4 The Site is situated near the entrance of Wang Che village. To the immediate north of the Site there is a NTEH, developed on Lot No. 757 in D.D. 249 ("the Adjacent Lot"), while to the south and west of the Site there is a rural path. A plan showing the land uses in the immediate neighbourhood of the Site is attached at Figure 2.2.







# Accessibility

- 2.5 The Site is accessible by the abovementioned village road which branches off from Ho Chung Road. The latter connects to Hiram's Highway, a major carriageway in the area connecting Sai Kung Town Centre at the northern end and Clear Water Bay Road at the southern end. It is about a 15-minute drive to Sai Kung Town Centre and the MTR Hang Hau Station, and about a 20-minute drive to the MTR Choi Hung Station.
- 2.6 Public light buses serving along Ho Chung Road are the only public transport available in the immediate neighbourhood.

# **Existing Condition of the Site**

2.7 The Site is vacant and has not built with any structure. Some photos showing the recent condition of the Site are provided overleaf.



#### FIGURES 2.3 SITE PHOTOS



Photo taken from the east showing the Site and the NTEH at the Adjacent Lot



Photo of the Site taken from the west



Photo of the Site taken from the south



Entrances of adjacent houses (including the NTEH at Adjacent Lot) at the west of the Site



### 3. LAND STATUS

- 3.1 The Site comprises a piece of private land, i.e. the Subject Lot, and a piece of adjoining Government Land, i.e. the Adjoining Government Land.
- 3.2 The Subject Lot was granted by way of land exchange on 17 June 1994. According to the conditions under New Grant No. 8351 ("the Subject New Grant"), the Subject Lot was permitted for the construction of a NTEH having not more than 3 storeys or 8.23 metres in height for private residential purposes. The relevant details under the Subject New Grant are shown in the following <u>Table 3.1</u>, and a copy of the Subject New Grant is attached at <u>Appendix B</u>.

Special Condition	Extract of Condition		
Special Condition (7) Development Conditions	(a) "No structure shall be erected on the lot other than one building which shall neither contain more than three storeys nor exceed a height of 8.23 metres, and the maximum roofed-over area of the lot shall not exceed 65.03 square meters"		
Special Condition (11) User	"The lot and any building erected thereon or any part of such building shall not be used for any purposes other than private residential purposes"		

TABLE 3.1 CONDITIONS UNDER NEW GRANT NO.8351 RELEVANT TO USE OF THE SUBJECT LOT

- 3.3 The Adjacent Lot was granted on the same date under the similar set of lease conditions by way of land exchange. Despite the high similarity in the lease status, the Subject Lot and Adjacent Lot have been under different zonings since the first statutory town plan. Further details are provided in the next chapter.
- 3.4 The Subject Lot was permitted to proceed with the relevant construction works after the execution of land exchange in June 1994. A Certificate of Exemption on Building Works on the Subject Lot and a set of Site Formation Plans covering the site formation works for both the Subject Lot and the Adjacent Lot were respectively issued by the Lands Department and approved by the Building Authority in August 1994.
- 3.5 In December 1996 the Building Authority approved another set of site formation plans covering the Adjacent Lot only. The new set of site formation plans covering the Subject Lot and the Adjoining Government Land was however not approved in 2016 due to the "CA" zoning of the Site.



#### THE PROPOSED REZONING 4.

#### **Planning History of the Site**

- 4.1 Although the Subject Lot was permitted to build a NTEH according to the Subject New Grant, its zoning under the statutory town plans has never been compatible with the permitted use under the land grant.
- 4.2 Table 4.1 highlights the zoning history of the Subject Lot and the Adjoining Government Land since the first publication of the Ho Chung Interim Development Permission Area Plan.

TABLE 4.1 ZONING HISTORY OF THE SUBJECT LOT, THE ADJACENT LOT, AND THE ADJOINING **GOVERNMENT LAND** 

Plan No.	Approval/ Exhibition Date	Zoning(s) of the Subject Lot	Zoning of the Adjacent Lot	Zoning(s) of the Adjoining Govt Land	Remarks
Ho Chung Interim Development Permission Area (IDPA) Plan No. IDPA/SK-HC/1	17 Aug 1990	Mostly not zoned, Partially "V"	"∖√"	Mostly not zoned, Partially "V"	It is the first statutory plan in Ho Chung. A majority part of the Subject Lot was not zoned under the IDPA Plan.
Draft Ho Chung Development Permission Area (DPA) Plan No. DPA/SK-HC/1	12 Jul 1991	Mostly "GB", Partially "V"	"V"	Mostly "GB", Partially "V"	The previous not zoned part of the Subject Lot was zoned as "GB".
Draft Ho Chung OZP No. S/SK-HC/1	20 May 1994	Mostly "CA", "V" Partially "V""		Mostly "CA", Partially "V""	The "GB" zoned part of the Subject Lot was rezoned as "CA"
(Note: The Subject Lot and the Adjacent Lot were granted by way of land exchange on 17 June 1994)					
Approved Ho Chung OZP No. S/SK-HC/11 (The OZP currently	11 Mar 2014	Mostly "CA", Partially "V"	"V"	Mostly "CA", Partially "V"	The zonings of the Subject Lot have remained unchanged since 20 May 1994

4.3 The Adjacent Lot, which was granted by way of land exchange on the same date as the Subject Lot under a similar set of lease conditions, has been zoned as "V" since the first statutory town plan come into force in August 1990. The Subject Lot should have been also zoned as "V" if the zonings had been reasonably delineated to align with the upcoming land grants in the early 1990s.

Lot No. 764 in D.D. 249 and Adjoining Government Land, Wang Che, Sai Kung

in force)

Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (CAP.131) Rezoning from "Conservation Area" & "Village Type Development" to "Village Type Development" For a New Territories Exempted House Development



# The Proposed Rezoning

- 4.4 As the development of a NTEH is not an existing use nor a use under Column 1 or Column 2 of the Schedule of Use for the "CA" zone, a rezoning would be required if the Applicant wishes to develop a NTEH on the Subject Lot.
- 4.5 In this application, we propose to rezone the Site from "CA" and "V" to "V" for the proper exercise of the Applicant's development rights on the Subject Lot, and the approval of necessary site formation works to be carried out on the Site.

#### The Proposed New Territories Exempted House

4.6 The Proposed NTEH will be developed in accordance with the restrictions stipulated under the Subject New Grant. Major development parameters are shown at <u>Table 4.2</u>.

Items	Details		
Site Area	Subject Lot	:	65.03 m² (about)
	Adjoining Government land	:	58.22 m² (about)
	Total	:	123.25 m² (about)
Proposed Uses	Subject Lot		
	G/F, 1/F and 2/F	:	Private Residential Use
	Adjoining Government land	:	Site formation works
No. of Building	1		
No. of building	1		
Roofed Over Area	Not more than 65.03m <sup>2</sup>		
Gross Floor Area	Not more than 195.09m <sup>2</sup>		
Building Height	Not more than 8.23m		
No. of Storeys	Not more than 3 storeys		

TABLE 4.2 PROPOSED DEVELOPMENT PARAMETERS

#### Site Formation Proposal and Slope Stabilisation Works

4.7 The proposed NTEH on the Subject Lot would require the approval of site formation works by the Building Authority. After seeking the advice of geotechnical consultant, the relevant site formation works would involve not only the Subject Lot but also some surrounding Government Land (i.e. the Adjoining Government Land), which is proposed at minimal scale. An indication of the site formation area suggested by the geotechnical consultant, which coincides with the proposed boundary of the Site in the



subject application, is shown as Green at **<u>Figure 4.1</u>**. Details of the site formation proposal is provided at **<u>Appendix C</u>**.

4.8 In addition to the above, we understand the Applicant was required to carry out stabilisation works to an existing slope on Government Land located to the southwest of the Site (area coloured blue at <u>Figure 4.1</u>). As the proposed works are essentially maintenance and repair works of an existing slope required by the Government, on the assumption that no additional planning approval is required, the relevant areas have not been included in the present rezoning application.

FIGURE 4.1 AREA FOR SITE FORMATION WORKS (COLOURED IN GREEN) AND LOCATION OF PROPOSED SOIL NAILS



Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (CAP.131) Rezoning from "Conservation Area" & "Village Type Development" to "Village Type Development" For a New Territories Exempted House Development

![](_page_33_Picture_0.jpeg)

### Sewerage Proposal

- 4.9 The subject Wang Che location, which is not served by any public sewer, is located within a Water Gathering Ground ("WGG") that septic tank installation is not encouraged under current policy.
- 4.10 A sewerage impact and risk assessment has been conducted (the full assessment report is attached at <u>Appendix D</u>) to assess the potential impacts on the WGG brought by the Proposed NTEH. As suggested in the report, all sewerage generated by the Proposed NTEH will be stored in an underground holding tank which will be regularly cleared by a registered contractor for further treatment outside the WGG.
- 4.11 Based on the proposal, no sewerage will be discharged into adjoining land or watercourse and will not cause any environmental pollution.

![](_page_34_Picture_0.jpeg)

# 5. PLANNING JUSTIFICATIONS

5.1 This Application aims to provide a solution to rectify the incompatibility between the planning restrictions and leasehold rights of the Subject Lot. The detailed justifications are highlighted below.

# Providing a Fair Opportunity to Exercise the Leasehold Rights under the Subject Land Grant

- 5.2 As detailed in <u>Chapter 3</u>, the Subject Lot was granted to the Applicant by way of land exchange for NTEH development on 17 June 1994, shortly after the publication of the first approved OZP governing the subject area on 20 May 1994.
- 5.3 Due to unknown reason, the town planning zoning of the Subject Lot under the statutory town plans has never been compatible with the permitted land use under the Subject New Grant, which technically prohibits the Applicant from exercising his leasehold rights to develop a NTEH on the Subject Lot.
- 5.4 The Adjacent Lot, situated in the "V" zone, was granted on the same date as the Subject Lot with a similar set of lease terms and was developed in around 1998. The Applicant's NTEH should have been developed around the same time if the Site had been under a compatible zoning when the Subject Lot was granted.
- 5.5 We recommend the TPB to approve this Application to provide a fair opportunity to the Applicant for a proper exercise of his leasehold rights under the Subject New Grant, which was caused by an unfortunate inconsistency of the town plans and the land lease.

#### Approval will not result in Additional Development

- 5.6 The Subject Lot was granted for NTEH development in June 1994, when due considerations should have been taken by the relevant authorities and government departments.
- 5.7 The Subject Application therefore does not intend to add a new NTEH development in the area, but instead serves to provide a way for the proper exercise of the existing

![](_page_35_Picture_0.jpeg)

leasehold rights of the Applicant. The approval of the Subject Application should not result in any unanticipated impact to the surrounding area.

### No Insurmountable Environmental Impact

5.8 To evaluate the potential environmental impact brought by the Proposed NTEH, a tree survey report and a sewerage impact and risk assessment report have been conducted. Based on the results of the reports, corresponding measures are proposed to ensure no insurmountable environmental impact will be induced.

#### <u>No Tree Felling</u>

- 5.9 A tree survey report has been conducted.
- 5.10 According to the report, there is no tree within the Site. 12 trees were found within or around the slope stabilization works boundary, but no tree felling would be required as the works would only involve the use of soil nails and does not involve any excavation works. The Applicant will adhere to the guidelines suggested in the report to protect the retained trees during the construction and after the completion of the Proposed NTEH.
- 5.11 A copy of the full tree survey report is attached at <u>Appendix E</u>.

#### Neglectable Impact towards Water Gathering Ground

- 5.12 As detailed in <u>Paragraphs 4.9 4.11</u>, a sewerage impact and risk assessment has been conducted. According to the suggestions in the report, all sewerage generated by the Proposed NTEH is proposed to be stored in an underground holding tank and cleared for further treatment outside the WGG and will not cause any environmental pollution.
- 5.13 The proposed arrangement avoids the use of septic tank which is not encouraged in WGG under current policy and is a more environmentally friendly method causing immaterial impact on the water quality of the WGG.


# <u>Others</u>

5.14 The Proposed NTEH development will comply with all other prevailing regulations to the satisfaction of relevant authorities to minimise its environmental impact.

# Compatibility with Surrounding Environment

- 5.15 As detailed in <u>Chapter 2</u> and <u>Figure 2.2</u>, Wang Che is a small village comprising 30 NTEHs with pleasant and quiet rural living environment. The Proposed NTEH at the Subject Lot is highly compatible with the existing habitat and is not going to pose any change to the profile of Wang Che or its surrounding environment.
- 5.16 The Site was vacant for years. The completion and occupation of the proposed NTEH development would help to maintain active management of the Site and create a pleasant and well managed environment for the neighbourhood.
- 5.17 The proposed NTEH development is not likely to have observable impact on the existing roads. The construction works of the proposed NTEH and the relevant site formation and slope stabilisation works are not expected to obstruct the traffic of the existing village road of Wang Che.

# Not Setting an Undesirable Precedent

- 5.18 It is understood that there are precedents in the recent years for TPB to approve S.12A applications involving rezoning of sites from "CA" to "V" despite the adverse comments of various departments on potential environmental impacts in some cases (e.g. Y/NE-SSH/1 and Y/NE-SSH/2). In the present case, as supported by the tree survey report and sewerage impact and risk assessment report, there is no known or expected insurmountable environmental impact caused by the Subject Application.
- 5.19 Part of the Site is currently situated within the "V" zone. In view of the small scale of the Site and its close proximity to the existing "V" zone, we do not consider there is observable impact in conservation value if the Site is rezoned from "CA" to "V".
- 5.20 The Subject Lot was granted with leasehold rights to develop a NTEH after the publication of the first statutory town plan governing the subject location. The

Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (CAP.131) Rezoning from "Conservation Area" & "Village Type Development" to "Village Type Development" For a New Territories Exempted House Development

Lot No. 764 in D.D. 249 and Adjoining Government Land, Wang Che, Sai Kung



mismatching of the existing town planning zoning of the Site is a tragedy to the Applicant, and the approval of this Application would provide a fair remedy to the circumstances. It is a unique situation and should by no means be considered as setting a "undesirable precedent" from a planning perspective.

Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (CAP.131) Rezoning from "Conservation Area" & "Village Type Development" to "Village Type Development" For a New Territories Exempted House Development Lot No. 764 in D.D. 249 and Adjoining Government Land, Wang Che, Sai Kung



# 6. CONCLUSION

- 6.1 The Subject Application only serves to rectify the incompatibility between the OZP and the Subject New Grant, and to provide a fair solution for the Applicant to re-exercise the leasehold rights as stipulated. Its approval will not result in any new development apart from one NTEH which all relevant authorities should have been aware, anticipated and acknowledged some twenty to thirty years ago.
- 6.2 According to the relevant supporting technical assessments, the Proposed NTEH will not cause insurmountable environmental impact. In view of the circumstances, we sincerely invite members of the TPB to give fair but empathetic consideration on the present case and approve this S.12A Application.

# ALBERT SO SURVEYORS LTD.

November 2022



# **CONTACT DETAILS**

# ALBERT SO SURVEYORS LIMITED

Unit H2, 17/F., MG Tower 133 Hoi Bun Road, Kwun Tong Kowloon, Hong Kong T 852 2882 3183 F 852 2882 2810

Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (CAP.131) Rezoning from "Conservation Area" & "Village Type Development" to "Village Type Development" For a New Territories Exempted House Development Lot No. 764 in D.D. 249 and Adjoining Government Land, Wang Che, Sai Kung

# **APPENDIX A**

# Response-to-Comment Table

#### **RESPONSE-TO-COMMENTS TABLE**

#### Item Departmental Comments

#### Responses

#### LandsD Lands Department ("LandsD")

- Contact Person: Ms W. T. Lo (Tel: 2792 4749)
- Via letter dated 21 April 2022
- LandsD 1 No objection to the proposed rezoning of the Small House site on Lot No. 764 in D.D. 249 ("the Subject Lot") from "Conservation Area" ("CA") to "Village Type Development" ("V") as the New Grant Condition was already executed on 17.6.1994. However, his office has reservation to the proposed rezoning of the adjoining government land from "CA" to "V" without having prior agreement by the relevant departments and his office on the extent of government land (i.e. 58.22 sq. m.) to be affected by the proposed site formation works.

According to Planning Department's letter dated 21 April 2022 (Attachment A-1), there was no adverse comment from any relevant department on the extent of Government Land to be involved in the proposed site formation works. An indication on the site formation area (i.e. the application site area) and site formation proposal are re-provided at **Figure 4.1** and **Appendix B** at the supporting planning statement for easy reference.

The Subject Lot is close to a slope. As advised by Geotechnical Engineer, in view of the special safety concern in the present case, the extent of site formation works for the proposed NTEH would have to cover surrounding land. The proposed site formation works have therefore included minimal scale of surrounding Government Land.

Please note that the proposed NTEH would be built entirely within the Subject Lot. The involved Government Land in the present rezoning application will solely be used for site formation works and is not intended for the exclusive use of the Applicant.

Alternatively, subject to the confirmation of the Planning Department and Lands Department, the surrounding Government Land may be excluded from the present rezoning application if it is acceptable for the proposed site formation works to be carried out in the current "CA" zone.

### DSD Drainage Services Department ("DSD")

- Contact Person: Mr. Henry Yeung (Tel: 2300 1343)
- Via letter dated 21 April 2022
- DSD 1 The concerned lot is currently not covered by his department's public drainage and sewerage networks. The applicant shall provide sufficient drainage details for review and comments. On the condition that adequate stormwater drainage collection and disposal facilities will be provided in connection with the proposed development to deal with the surface runoff of the site and the same flowing onto the site without causing any adverse impact or nuisance to the adjoining areas, he has no objection in-principle to the proposed rezoning.
- DSD 1 Requirements related to sewage treatment/disposal are Noted subject to the views of the Environmental Protection Department.
- WSD Water Supplies Department ("WSD")
  - Contact Person: Ms. Ruby HU (Tel: 2152 5719)
  - Via letter dated 21 April 2022
- WSD 1 The site is located within water gathering ground (WGG). Noted. There is no information in the pre-submission to indicate that the proposed development can be connected to the public sewerage system in the area. The wastewater generated from the proposed development will have potential to cause pollution to the WGG.
- WSD 2 His previous comments conveyed to you via email dated 14.9.2020 remain valid. The conditions stated in the said email have not been fulfilled on the following grounds:
  - (a) there is no information on detailed arrangement/operations of removing sewage from the holding tank; and

The proposed drainage details are provided at **Appendix C** of the supporting planning statement. It is understood that DSD's comments on the drainage system would be further addressed during the site formation plan approval stage.

Noted. The arrangement for removing sewage from the holding tank has been described in **Section 5.3.1** of the Sewerage Impact and Risk Assessment Report ("SI&R report") at Appendix D of the supporting planning statement.

- (b) detailed method of sludge removal from the holding tank is not provided.
- WSD 3 In view of the operations mentioned in items 2 (a) and (b) above may cause water pollution, further information from the applicant is anticipated.

#### - Via email dated 13 June 2022

- WSD 4 The pre-submission for proposed rezoning from 'CA' to 'V' uses is noted. After review, the proposal is considered insufficient to fully address our concerns; and to prove and demonstrate that there would be no material increase in pollution effect to the Water Gathering Grounds ('WGG') after the rezoning exercise. Therefore, our previous comments dated 21.04.2022 and 14.09.2020 remain valid, and our specific concerns on the pre-submission are provided as follows from the perspectives of water resources protection.
- WSD 5 It is noted in para. 4.2 of Appendix C that the joints and hatch boxes from the proposed house to the sewage holding tanks will be sealed. The applicant should advise how to ensure no overflow, leakage and seepage of sewage within WGG occur at all times.

Noted. The arrangement for desludging of the holding tank has been described in **Section 5.3.2** of the SI&R report.

Both the sewage and sludge removal operations will be conducted by sewage suction truck and are not anticipated to cause any water pollution. Please refer to **Section 5.3** of the SI&R report for details.

Noted.

Our latest response to the previous comments dated 21.04.2022 and 14.09.2020 are provided in this response-to-comment table (items WSD 1 to WSD 3 and WSD 18 to WSD 26).

The proposed physical implementation and the management strategy have been revised. The details are provided in **Chapters 4 and 5** of the revised SI&R report.

Proposed physical implementation includes: material selection, pipe alignment, provision of leakage/level sensor & warning system, as well as provision of bund wall. The details of each consideration are detailed in **Chapter 4** of the SI&R report. A tentative preliminary sewage holding tank design is illustrated in **Figure 4-1**.

For an effective and systematic management, an Operation and Maintenance Manual (O&M Manual) shall be prepared during the detailed design stage of the sewage holding system. The Standard Operation Procedure (SOP) for various situations, including maintenance procedure, shall also be included in the O&M Manual. In addition, a contingency plan shall be prepared during the detailed design stage for providing instruction to the occupants when system breakdowns. The operation and WSD 6 It is noted in para. 4.3 of Appendix C that the sewage holding tanks will be stored in a polypropylene tank which is placed in a concrete underground room. The floor and walls of the underground room will be coated with nonseeping materials whose integrity will be verified upon construction. In this regard, the applicant should indicate whether the underground room will be erected below or above the groundwater table. Besides, the applicant should provide a maintenance plan for the underground room to ensure that the structure is leak-proof and water tight at all times.

WSD 7 It is noted in para. 4.5 of Appendix C that duty and standby leakage detection sensors will be provided at the lowest point of the underground room structure. In this regard, the applicant should elaborate the action plan in case of leakage detection.

maintenance strategy are described in **Chapter 5** of the SI&R report.

No overflow, leakage and seepage of sewage within WGG is anticipated if the proposed measures are properly implemented.

The underground room will likely be partially below the water table. Providing a waterproof room is therefore essential not only for ensuring the potential leaked sewage from the holding tanks not entering the underground water system but also preventing the underground room from flooding by the underground water.

A practical way is to apply non-seeping material and/or membrane to the floor and walls of the underground room during construction. Leakage test will be performed upon construction to confirm the integrity of the wall and floor before placing the holding tank into the room.

When leakage has been detected during testing or during operation phase, the leakage will be rectified as soon as possible according to the maintenance manual.

A pair of water sensors will be provided at the lowest point of the room for water detection. If water is detected in the room, warning signal will be triggered to notify the user for inspection. An associated water pump will also be provided to pump the water in the room to the tank.

The physical implementations of the underground room are detailed in **Section 4.3** of the SI&R report. Operation and maintenance of the system are described in **Section 5.2** and **Section 5.4** of the same report respectively.

If these measures are properly implemented, no leakage from the structure is anticipated.

The logic of the sensor system is described in **Section 5.2** of the SI&R report.

Detailed action plan will be provided as part of the O&M Manual during the detailed design stage.

WSD 8 It is noted in para. 4.6 of Appendix C that an alert alarm will be set at 85% of the sewage holding tank capacity and can only be turned off by reducing the sewage level in the tank. In this regard, the applicant should elaborate how the alarm works at 85% of the sewage holding tank capacity to substantiate the practicability of the preventive measure. Besides, it is also noted that duty and standby level sensors will be installed inside the tank. As it is not uncommon that sensors fail to perform their intended functions after prolonged inactivation, the applicant should consider operation of level sensors in an alternating manner.

The regular inspection and maintenance as described in **Section 5.4** of the SI&R report provides basic requirement to prevent/identify any potential leakage and prevent the system from being beyond repair in early life cycle.

Emergency Response Plan (as part of O&M Manual) (detailed at **Section 5.5** of the SI&R report) and Contingency Plan for Occupants (detailed at **Section 5.6** of the SI&R report) will be prepared during the detailed design stage to handle emergency situation.

The logic of the sensor system & self-error detection is described in **Section 5.2** of the SI&R report.

There are five pairs of water sensors in the system. One pair is located at the lowest location of the underground room and the other 4 pairs will be in the sewage holding tank at different water levels.

To minimize the risk of leakage/overflow, the two sensors in the pair will be in duty concurrently. If either sensor is triggered, the system will indicate that water is detected at that particular level.

When the pair of sensors are out of sync for an extended period of time, say 24 hours, it is likely that the sensor(s) or its (their) transmission(s) is(are) not working properly. Warning signals including the ID or location of the potential faulty sensors will be displayed on the screen to inform the occupants and maintenance staff. Similarly, when there are contradictory sensor signals, e.g. the sensors at higher level are triggered before the sensors in lower level, warning signal including the ID or location of the potential faulty sensors will be displayed on the screen to inform the occupants and maintenance staff.

Besides the warning signals for self-error detection, there are four warning signals for normal operation including a warning signal on potential sewage holding tank leakage, and other three warning signals indicating the various sewage levels in the sewage storage tank as detailed at **Table 5-1** of the SI&R report. The required action and warning messages will be displayed on

WSD 9 It is noted in para. 4.8 of Appendix C that there will be a bund at door entrance to contain sewage spillage during desludging works. In this regard, the applicant should elaborate whether the bund is sufficiently high to prevent storm water ingress to the sewage holding tank compartment in case of flooding.

the screen of the control panel to remind the occupants until the warning signal wears off. The three warning signals on sewage levels will only be worn off by reducing the sewage level to below 25%.

The environment of the Application Site and the site formation plan is described in **Section 4.6** of the SI&R report.

The ground level of the house will be higher than the level of the access road on the eastern and southern sides, while the adjoining government land on the western will be at a level similar to the ground level of the house. Drainage channels will be provided at these three sides to collect the surface water.

By directing the surface water via the drainage channels, no accumulation of large amount of surface runoff near the proposed house during rainstorm is anticipated. Therefore, by providing the access door/opening of the underground room either within the building or surrounded by bunded wall with cover are sufficient to prevent water ingress into the underground room. As a conservative design, the access door/opening of the underground room shall not be placed near the western boundary of the lot where the slope locates.

For small amount of ingress water, a pump will be provided at the lowest point of the room to pump the water into the sewage holding tank.

On the same principle, locating the sewage holding tank indoor with paved waterproof ground and walls, with sufficient buffer volume, well-designed access door, and/or bunded wall with cover, any leakage from the tank or during desludging is not anticipated to flow onto the outdoor area.

WSD 10 It is noted in para. 4.9 of Appendix C that the sewage Th holding tank will be desludged on a weekly basis. In this de regard, the applicant should indicate in the submission whether proper desludging records will be maintained for inspection in future.

The occupants shall keep the sewage removal records & desludging records for inspection in future as mentioned in **Sections 5.3.1 & 5.3.2** of the SI&R report.

WSD 11 It is noted in para. 6.1 of Appendix C that water pollution risks and impacts arising from the operation of the sewage holding tank are assessed with proposals of preventive, monitoring and control measures. Further to the proposed measures, the proponent should provide a contingency plan in case of system breakdown and other emergency situations. In particular, downtime between breakdown and availability of an intact sewage holding tank should be critically reviewed. On the other hand, it is noted that sewage generation from the proposed village house will be suspended until defects of the sewage holding tank are rectified. The applicant should justify the practicability of the suspension in such case.

WSD 12 The applicant should indicate in the submission whether all wash waters from the village housing activities will be conveyed to the sewage holding tank and the holding tank capacity has taken the wash water generation into account.

For an effective and systematic management, an Operation and Maintenance Manual (O&M Manual) shall be prepared during the detailed design stage of the sewage holding system. Emergency Response Plan shall be prepared during the detailed design stage as part of the O&M Manual for handling accidental leakage/spillage and/or system breakdown.

In addition, a contingency plan shall be prepared during the detailed design stage for providing instruction to the occupants when system breakdowns. The operation and maintenance strategy area described in **Chapter 5** of the Sl&R report.

When potential overflow (tank 85% full), maintenance works required system shutdown, or emergency situation occurs (Sections 5.3.3, 5.4.7, & 5.5 of the SI&R report refers), the occupants shall stop producing any sewage until the sewage in the tank has been removed or the system has been restored. As the occupants will be the first victim from the smell and other potential hygiene concern due to the sewage overflowing from the tank, the occupants shall temporarily move out until the maintenance is completed.

It should be noted that Lot No. 764 in D.D. 249 will be fully occupied by the proposed house, while the outdoor area is government land. Therefore, no outdoor activity, including gardening and parking, is anticipated (**Section 6.3.2** of the SI&R report).

As stated in **Section 4.6.2** of the SI&R report, no accumulation of large amount of surface runoff near the house during rainstorm is anticipated. With door(s) protected by bunded wall, all indoor wastewater on the floor shall be blocked and eventually collected by the sewage storage tank via floor drains. Similarly, the wash water and other spilled water from village housing activities will also be collected by the sewage storage tank via floor drains. The occupants should be reminded not to dispose any wastewater outdoor, including the roof of the building which is connected to the drainage system. (**Section 6.3.3** of the SI&R report refers).

- WSD 13 The applicant should propose and implement effective water pollution control and mitigation measures to address our requirements as set out in the guidelines at enclosure of memo ref. (26) in WSD/M/SP3051/365/157A/18 Pt. 1. In particular, specific concerns on intentional and unintentional contamination to surface runoff arising from the village housing activities are provided as follows:
- WSD 14 In regard to requirement (2), as generation of general refuses, domestic wastes and/or pet wastes is anticipated during the village housing activities within WGG, a waste management plan should be provided to address our concerns on potential water pollution within WGG.
- WSD 15 In regard to requirements (3) & (4), as applications of chemicals such as fertilizers, detergents, pesticides and disinfectants are not uncommon for environmental greening, sanitation and management, the proponent should clarify whether there will be application of chemicals within the site. As reiterated, the proponent shall take note that the use and storage of pesticides, toxicants, flammable solvents, larvicidal oil, rodenticide, tar and petroleum oil are strictly prohibited in WGG. No chemicals including fertilizers and detergent shall be stored/used without the prior approval from the Water Authority.

The daily sewage flow and the holding tank capacity are calculated according to the information in EPD's Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning Version 1.0.

The wash water expected to be generated by the village housing activities has been taken into account in the calculation of sewage flow.

Noted. Please refer to our responses on items WSD 14 to WSD 26.

Considering the scale and type of the proposed development, i.e. a single village house, a waste management plan is unnecessary. Instead, the occupants are reminded to always dispose the domestic wastes and/or pet wastes to the nearest waste collection point.

Section 6.3.8 of the SI&R report has been revised accordingly.

It should be noted that Lot No. 764 in D.D. 249 will be fully occupied by the proposed house, while the outdoor area is government land. Therefore, no outdoor activity, including gardening and parking, is anticipated (**Section 6.3.2** of the SI&R report).

Household chemical such as detergent and cleaning agent are expected to be stored and used within the proposed house. The residue chemical is expected to directly discharge to the sewage system or collected by sewage collection tank via the floor drainage. The occupants should be reminded not to store or use any chemical outdoor, including the roof of the building which is connected to the drainage system. (**Section 6.3.4** of the SI&R report refers) following conditions:

In regard to requirement (5), the applicant should clarify

whether there will be any vehicle parking on site, and

provide water pollution control and mitigation

measures against oil leakage and spillage within WGG.

In regard to requirement (7), the applicant should

provide effective mitigation measures against soil

erosion, siltation and contamination to surface runoff arising from the construction activities and observe the

attached Conditions for Working within WGG.

We have no objection to the proposal subject to the

**WSD 19** assessment report to prove and demonstrate to the satisfaction of the Water Supplies Department that there will be no material increase in pollution effect resulting from the proposed "Village Type Development" within the Water Gathering Ground (WGGs) at all time according to the attached WSD

Guidelines;

Via email dated 14 September 2020

**WSD 16** 

**WSD 17** 

**WSD 18** 

- **WSD 20** (b) A sewage holding tank system, if provided for foul effluent disposal, shall be at a distance of not less than 30m from any water course. The whole system shall be properly maintained and desludged at a regular frequency. All sludge shall be carried away and disposed of outside the WGGs;
- **WSD 21** (c) The applicant shall propose and implement preventive, mitigation, contingency and remedial measures for preventing and containing overflow, leakage and spillage of sewage during operation and adverse weather conditions such as flooding and heavy rain;

It should be noted that Lot No. 764 in D.D. 249 will be fully occupied by the proposed house, while the outdoor area is government land. Therefore, no outdoor activity, including gardening and parking, is anticipated (Section 6.3.2 of the SI&R report).

Please refer to the Section 6.2 of the SI&R report for the mitigation during construction phase of the proposed development.

(a) The applicant shall provide a comprehensive risk Noted. A SI&R report has been prepared and is provided at Appendix D of the supporting planning statement.

> The lot boundary of Lot No. 764 in D.D. 249, where the sewage holding system located, is more than 30m from any natural water course.

> The whole system shall be inspected and maintained regularly. The sewage will be removed on a weekly basis. Additional sewage removal and desludging will be conducted as needed. Please refer to Sections 5.3 & 5.4 of the SI&R report for details.

> Measures for preventing and containing overflow, leakage and spillage of sewage during operation and adverse weather conditions such as flooding and heavy rain has been descripted in Chapter 4 (design) & Chapter 5 (management) of the SI&R report and discussed in Section 6.3 of the SI&R report.

ned and mitigation during construction phase of the proposed ses from development.

When public sewer is available near the Site in the future, the applicant shall connect the whole of the foul/sewage system to the public sewers. (**Section 2.2.5** of the SI&R report refers)

Please refer to the Section 6.2 of the SI&R report for the proposed

The sewer pipes shall be made of cast iron or other approved material with sealed joints and hatched boxes. (Section 4.2.2 of the SI&R report refers)

WSD 22 (d) The risk assessment shall be substantiated by the capability and operability of the proposed measures with respect to performance verification and long-term maintenance;
 Noted. The capability and operability have been considered in all of the proposed measures. The owner also agrees to temporarily move out from the property where necessary.

- WSD 23 (e) All spoils arising from the site formation and building construction works shall be contained and protected to prevent all nearby water courses from being polluted or silting up;
- WSD 24 (f) The applicant shall connect the whole of the foul/sewage system to the public sewers when they become available;
- WSD 25 (g) The whole of foul effluent shall be conveyed through cast iron pipes or other approved material with sealed joints and hatched boxes from the proposed houses to the sewage holding tank system; and
- WSD 26 (h) The applicant shall ensure that the measures agreed Noted. at the operation stage are implemented to WSD's satisfaction.
- EPD Environmental Protection Department ("EPD")
  - Contact Person: Mr. Henry LEUNG (Tel: 2835 2512)
  - Via letter dated 21 April 2022

EPD 1 According to the information provided in the application, all Noted. sewage generated from the proposed New Territories Exempted House (NTEH) will be stored in an underground holding tank which will be regularly cleared by a licensed contractor for further treatment outside the WGG instead of adopting septic tank and soakaway system (which is not an acceptable means within WGG according to the Hong Kong Planning Standards and Guidelines Chapter 9 Section 5.3.13) proposed in the previous application

P. 10

Contingency and emergency measures are outlined in **Sections 5.5 & 5.6** of the SI&R report.

- EPD 2 It is noted that the sewage holding tank is designed to hold 1.5-week volume of sewage, and the occupant will arrange regular sewage removal by a licensed contractor at weekly interval. The sewage holding tank will be designed to prevent sewage leakage and spillage with an emergency response plan in case of accident. The tank will also be designed to prevent odour release during normal operation and sewage pumping. In this connection, the applicant has committed to provide the following key preventive measures:
  - (a) sewage will be conveyed through sealed pipelines;
  - (b) sewage will be stored in double-layered holding tank which will be placed in a concrete underground room, and the room will be coated with non-seeping material;
  - (c) duty and standby detection sensors will be provided to the holding tank and the underground room, which will be connected to an alarm system;
  - (d) emergency response plan including notification of concerned department(s) within 24 hours in the unlikely case of accidental leakage/spillage;
  - (e) monthly inspection by a licensed contractor to ensure the integrity of the holding tank and submit the inspection results to concerned department(s); and
  - (f) no opening of manhole to minimise potential odour release during sewage pumping.
- EPD 3 With the implementation of the above measures, no Noted. adverse environmental impact from the proposed development is anticipated. Therefore, she has no inprinciple objection to the application provided that there is appropriate control mechanism for the implementation of the proposed measures.

Noted.

The key preventive measures shall be implemented.

The calculation of the daily/weekly sewage flow volume has been revised in the current version. The proposed size of the sewage holding tank (~34m<sup>3</sup>) remains unchanged (**Table 3-1** of the SI&R report refers).

### AFCD Agriculture, Fisheries and Conservation Department ("AFCD")

- Contact Person: Mr. TSANG Kwok-on (Tel: 2150 6943)
- Via letter dated 21 April 2022
- AFCD 1 The proposed small house site is mainly vacant and covered Noted. in common shrubs. The adjacent slope is partly covered in woodland vegetation with native trees. According to the planning statement, the slope stabilisation work will only involve soil nail installation. No land excavation and tree felling will be required. There is no strong view on the application.

### UD&L Urban Design and Landscape Section, Planning Department ("UD&L")

- Contact Person: Mr. Leo LAM (Tel: 3565 3956)
- Via letter dated 21 April 2022
- UD&L 1 Please note the following comments on Figure 1 (Tree Survey Plan) in the submitted Tree Survey Report from the landscape perspective: it is noted that the proposed soil nailing works on slope adjacent to the proposed NTEH with the presence of existing tree T7, T8 and T9, the applicant is advised to demonstrate the proposed soil nailing location will pose no adverse impact on the existing trees and landscape.

As mentioned in **Section 3.5** of the Tree Survey Report, the location of the soil nails will be adjusted onsite to avoid damaging the major roots. Other precautionary measures as per Clause 26.12 of the General Specification for Civil Engineering Works (2006 Edition), which are typical measures adopted in CEDD soil nailing projects, are extracted as **Appendix D** of the Tree Survey Report. No adverse impact on the existing trees and landscape is expected.

# CEDD Geotechnical Engineering Office), Civil Engineering and Development Department ("CEDD")

- Contact Person: Mr. Aries WONG (Tel: 2762 5385)
- Via letter dated 21 April 2022

## CEDD 1 No comments on the planning application. Noted.

- CEDD 2 It is noted that site formation works will be needed for the Noted. proposed small house development. The applicant should be reminded to make necessary submission to the Buildings Department in accordance with the provisions of Building Ordinance.
- CEDD 3 It is noted that the proposed site formation works will be Noted. carried out within government land, approval/comment from the Lands Department should be sought.

# Attachment A-1

# By Post & Fax (2882 2810) Planning Department

Sai Kung and Islands District Planning Office

15/F. Sha Tin Government Offices,

1 Sheung Wo Che Road, Sha Tin,

New Territories

規劃署

西貢及離島規劃處 新界沙田上禾輋路1號 沙田政府合署15樓



 本函檔號
 Your Reference
 AS024/17/III/54

 本署檔號
 Our Reference
 ( ) in SKT 5/3/HC/2

 電話號碼
 Tel. No. :
 2158 6174

 傳真機號碼
 Fax No. :
 2367 2976 / 2890 5194

Albert So Surveyors Ltd. Unit H2, 17/F, MG Tower 133 Hoi Bun Road Kwun Tong, Kowloon (Attn: Tsz-choi Wong)

21 April 2022

Dear Sir,

Pre-Submission of Application for Amendment of Plan under Section 12A from "Conservation Area" and "Village Type Development" to "Village Type Development" for Proposed New Territories Exempted House Development Lot No. 764 in D.D. 249 and Adjoining Government Land <u>Wang Che, Sai Kung, New Territories</u>

I refer to your above-referenced letter dated 20.1.2022 providing the pre-submission statement for departmental circulation, and my interim reply dated 12.4.2022.

I am pleased to enclose herewith the comments of the consulted departments on your pre-submission statement for your information and follow-up action, where appropriate.

It has been suggested in your submission that the result of the monthly inspection of the holding tank and accident report will be submitted to this department as part of the future management plan of the proposed development. In this regard, please note that this department has no expertise on the said matters. You are advised to identify a suitable authority to monitor the implementation of the management plan.

Fax received2.5 APR 202Original received2.5 APR 202Seen By $\bigcirc$  $\bigcirc$ Refer To $\bigcirc$  $\bigcirc$ On File for Action $\bigcirc$ Fax /<br/>EmailClientsOthersDone by & On $\bigcirc$ 

Yours faithfully,

( Matthew TAI ) for District Planning Officer/ Sai Kung and Islands Planning Department

Serving the community

JK/MT/mt

我們的理想 - 「透過規劃工作,使香港成為世界知名的國際都市。」 Our Vision – "We plan to make Hong Kong an international city of world prominence."

## **Departmental Comments**

# Comments of the District Lands Officer (Sai Kung), Lands Department (Contact Person: Ms. W. T. LO Tel.: 2792 4749):

No objection to the proposed rezoning of the Small House site on Lot No. 764 in D.D. 249 from "Conservation Area" ("CA") to "Village Type Development" ("V") as the New Grant Condition was already executed on 17.6.1994. However, his office has reservation to the proposed rezoning of the adjoining government land from "CA" to "V" without having prior agreement by the relevant departments and his office on the extent of government land (i.e. 58.22 sq. m.) to be affected by the proposed site formation works.

# Comments of the Chief Engineer/Mainland South, Drainage Services Department (Contact Person: Mr. Henry YEUNG Tel.: 2300 1343):

- 1. The concerned lot is currently not covered by his department's public drainage and sewerage networks. The applicant shall provide sufficient drainage details for review and comments. On the condition that adequate stormwater drainage collection and disposal facilities will be provided in connection with the proposed development to deal with the surface runoff of the site and the same flowing onto the site without causing any adverse impact or nuisance to the adjoining areas, he has no objection in-principle to the proposed rezoning.
- 2. Requirements related to sewage treatment/disposal are subject to the views of the Environmental Protection Department.

Comments of the Chief Engineer/Construction, Water Supplies Department (Contact Person: Ms. Ruby HU Tel.: 2152 5719):

- 1. The site is located within water gathering ground (WGG). There is no information in the pre-submission to indicate that the proposed development can be connected to the public sewerage system in the area. The wastewater generated from the proposed development will have potential to cause pollution to the WGG.
- 2. His previous comments conveyed to you via email dated 14.9.2020 remain valid. The conditions stated in the said email have not been fulfilled on the following grounds:
  - (a) there is no information on detailed arrangement/operations of removing sewage from the holding tank; and
  - (b) detailed method of sludge removal from the holding tank is not provided.
- 3. In view of the operations mentioned in items 2 (a) and (b) above may cause water pollution, further information from the applicant is anticipated.

Comments of the Director of Environmental Protection (Contact Person: Mr. Henry LEUNG Tel.: 2835 2512):

1. According to the information provided in the application, all sewage generated from the proposed New Territories Exempted House (NTEH) will be stored in an underground

holding tank which will be regularly cleared by a licensed contractor for further treatment outside the WGG instead of adopting septic tank and soakaway system (which is not an acceptable means within WGG according to the Hong Kong Planning Standards and Guidelines Chapter 9 Section 5.3.13) proposed in the previous application.

- 2. It is noted that the sewage holding tank is designed to hold 1.5-week volume of sewage, and the occupant will arrange regular sewage removal by a licensed contractor at weekly interval. The sewage holding tank will be designed to prevent sewage leakage and spillage with an emergency response plan in case of accident. The tank will also be designed to prevent odour release during normal operation and sewage pumping. In this connection, the applicant has committed to provide the following key preventive measures:
  - (a) sewage will be conveyed through sealed pipelines;
  - (b) sewage will be stored in double-layered holding tank which will be placed in a concrete underground room, and the room will be coated with non-seeping material;
  - (c) duty and standby detection sensors will be provided to the holding tank and the underground room, which will be connected to an alarm system;
  - (d) emergency response plan including notification of concerned department(s) within 24 hours in the unlikely case of accidental leakage/spillage;
  - (e) monthly inspection by a licensed contractor to ensure the integrity of the holding tank and submit the inspection results to concerned department(s); and
  - (f) no opening of manhole to minimise potential odour release during sewage pumping.
- 3. With the implementation of the above measures, no adverse environmental impact from the proposed development is anticipated. Therefore, she has no in-principle objection to the application provided that there is appropriate control mechanism for the implementation of the proposed measures.

Comments of the Director of Agriculture, Fisheries and Conservation (Contact Person: Mr. TSANG Kwok-on Tel.: 2150 6943):

The proposed small house site is mainly vacant and covered in common shrubs. The adjacent slope is partly covered in woodland vegetation with native trees. According to the planning statement, the slope stabilisation work will only involve soil nail installation. No land excavation and tree felling will be required. There is no strong view on the application.

Comments of the Chief Town Planner/Urban Design and Landscape, Planning Department (Contact Person: Mr. Leo LAM Tel.: 3565 3956):

Please note the following comments on Figure 1 (Tree Survey Plan) in the submitted Tree Survey Report from the landscape perspective: it is noted that the proposed soil nailing works on slope adjacent to the proposed NTEH with the presence of existing tree T7, T8 and T9, the applicant is advised to demonstrate the proposed soil nailing location will pose no adverse impact on the existing trees and landscape.

Comments of the Head (Geotechnical Engineering Office), Civil Engineering and Development Department (Contact Person: Ms. Aries WONG Tel.: 2762 5385):

- 1. No comments on the planning application.
- 2. It is noted that site formation works will be needed for the proposed small house development. The applicant should be reminded to make necessary submission to the Buildings Department in accordance with the provisions of Building Ordinance.
- 3. It is noted that the proposed site formation works will be carried out within government land, approval/comment from the Lands Department should be sought.

- END -

# **APPENDIX B**

New Grant No. 8351

NEW GRANT NO. 8-3-5/ (CONDITIONS OF EXCHANGE)
DISTRICT: <u>SAI KUNG</u> SURVEY/DEMARCATION DISTRICT NO. 249
! OWNER YIP TIN KEING (葉天良)
TERM 75 YEARS FROM 1ST JULY 1898 RENEWABLE FOR A FUR- THER TERM OF 24 YEARS LESS THE LAST 3 DAYS THEREOF
<ul> <li>99 YEARS FROM 1ST JULY 1898 LESS THE LAST 3 DAYS THEREOF</li> <li>EXPIRING ON 30TH JUNE 2047</li> </ul>
s

.

Entered and Indexed

RG/NT 208

÷

•

- 11 F

. . . . . . . . .

**,** 1

ì

New Grant No. 835 DLO/SK 179/SPA/71

÷

# PARTICULARS AND CONDITIONS OF EXCHANGE

PARTICULARS AND CONDITIONS for the GRAMT by the Government of Hong Kong (hereinafter referred to as "the Government"), acting in accordance with the provisions of the Joint Declaration of the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the People's Republic of China on the Question of Hong Kong, of the lot described in the First Schedule hereto and shown coloured pink on Plan 1 annexed hereto for a term of years commencing on the date of the Memorandum of Agreement annexed hereto and expiring on the 30th day of June 2047 at the rent specified in the said First Schedule and subject to the General and Special Conditions hereunder in exchange for the surrender of the OLD LOTS described in the Second Schedule hereto and shown edged blue on Plan II annexed hereto.

#### First Schedule

Registry Number	Location	Site	Area in square metres	Rent	Premium	
Lot No.764 in <sup>D.D</sup> .249	Wang Che Village Kai Ham Sai Kung New Territorie	As delineated and shown coloured espink on Plan I annexed hereto	65.03 (about)	Up to 30th June 1997 \$20 per annum, and thereafter, subject to General Condition 1, an amount equal to 3% of the rateable value for the time being of the lot	Nil	5 f

## PARTICULARS OF THE LOT

#### Second Schedule

.

#### OLD LOTS TO BE SURRENDERED

Registry No.	Location	Area in Square Metres	Rent per annum	Remarks
Lot No. 713R.P. in D.D. 249	Wang Che Village Kai Ham Sai Kung New Territories	68.2	\$0.02	Nil
		(about)		

SK/SHE06/92

. L ,

#### GENERAL CONDITIONS

Rent

1. (a) Rent as specified in the Particulars of the Lot shall commence from the date of this Agreement and until the 30th day of June 1997 shall be paid in arrear on the 1st day of July in every year, the first yearly rent or a due proportion thereof becoming due and to be paid on the 1st day of July next following the date of this Agreement.

(b) Subject to sub-clause (f) hereof, from the 1st day of July 1997 until the expiry of the term hereby granted the rent for the lot shall be calculated and paid with reference to the period commencing on the 1st day of April and ending on the 31st day of March in each year, and the Grantee shall pay and there shall be collected by the Director of Buildings and Lands (hereinafter called "the Director") as rent for the lot for each such period an amount equal to 3% of the rateable value from time to time of the lot, the said rent to be paid by four equal. quarterly instalments in advance on the 1st day of April, the 1st day of July, the 1st day of October and the 1st day of January in each year, and the first quarterly payment together with all accrued arrears of rent becoming due and to be paid on the 1st day of July 1997.

(c) For the purposes of this General Condition and subject to sub-clause (e) hereof, the rateable value of the lot shall be the rateable value as set out from time to time in the list declared or the interim valuation made by the Commissioner of Rating and Valuation (hereinafter called "the Commissioner") under the Rating Ordinance or any legislation amending or replacing the same, of the tenement, or, if there is more than one tenement, the aggregate of the rateable values and/or interim valuations as so set out or made of all the tenements comprised wholly or partly within the lot.

(d) For the purposes of sub-clause (c) hereof :-

- Effective (i) a rateable value in a new list, when declared, an interim valuation, when made, and a correction, alteration or variation of a rateable value or an interim valuation, when made, shall take effect from the effective dates for the same under the Rating Ordinance;
- Adjustment (ii) if the effective date of an interim valuation is earlier than the date of the making of the of effective interim valuation, or if the rateable value has been corrected, altered or varied and the effective date of such correction, alteration or variation is earlier than the date of the making of the correction, alteration or variation, and as a result the rent for the lot

;

Rateable va]ue

date

date

3

is increased, the rent due for the period since the effective date of the interim valuation or the correction, alteration or variation shall, in so far as it has not been already paid, be added by the Director to the next payment of rent due following the date of the making of the interim valuation, correction, alteration or variation, and if as a result of the making valuation, correction, interim the of alteration or variation the rent for the lot is reduced, any amount found to be overpaid by the Grantee may be deducted by the Director from the next payment of rent due following the date the making of the interim valuation, of correction, alteration or variation, or shall be otherwise credited to the account of or refunded to the Grantee;

- tenement shall be deemed to be comprised (**ii**i) а partly within the lot if the building in which it is contained stands partly within the lot; and where a tenement is so deemed to be comprised partly within the lot, there shall be included for the purpose of determining the rateable value of the lot only the same proportion of the rateable value in the list declared or the interim valuation made under the Rating Ordinance or, as the case may be, the rateable value fixed under sub-clauses (d)(iv), (d)(v) and (d)(vi) hereof, as, in the opinion of the Director whose decision thereon shall be final, the area of the lot bears to the area of all the lots on which the building stands;
- in the event that no rateable value has been ascertained under the Rating Ordinance in (iv) respect of a tenement, whether by reason of the exemption of such tenement from assessment to rates or otherwise, the Director may cause to be fixed such rateable value as if the tenement were assessable to rates under that Ordinance, and the rateable value so fixed shall be the rateable value of the tenement;
  - in the event that as a result of the demolition of a tenement or of a tenement being unoccupied by reason of an order of the Government its rateable value is deleted under the Rating Ordinance, the rateable value of the lot shall, if the Director in his absolute discretion thinks fit and until an interim valuation of a tenement or tenements wholly replacing the demolished or unoccupied tenement is made under the Rating Ordinance, include the rateable value of such tenement as last ascertained by the Commissioner; ۰,

.

.

Tenement 👘 partly on lot

Notional rateable value

Deletion of rateable value

.

(v)

(vi)

Tenement partly replaced where an interim valuation is made of a tenement or tenements which replace part of a former tenement in respect of which the rateable value as last ascertained by the Commissioner was included in the rateable value of the lot in accordance with sub-clause (d)(v)hereof the rateable value of the part of the former tenement not replaced by the interim valuation shall be such portion of the rateable value of the former tenement, as last ascertained the Commissioner, by as the in his absolute discretion Director shall consider appropriate to that part.

(e) There shall be added to the yearly rent of the lot fixed in accordance with sub-clause (b) hereof such sum as may be necessary to make the total number of dollars a multiple of four.

Exemption from rent under subclause (a)

Rounding up

(f) For so long as the lot is beneficially ewned by the Grantee or in an unbroken line of succession in title to the lot by a person who is descended through the male, but not the female, line from him the yearly rent for the lot shall be the sum of \$20, if demanded, provided that if an undivided share or interest in the lot together with the right to the exclusive use and occupation of all or a part of a building on the lot is beneficially owned by a person other than the Grantee or in an unbroken line of succession in title to such undivided share or interest a person who is descended through the male line from him the rent for the lot shall be calculated and paid in the manner described and shall be the amount specified in sub-clause (b) hereof in which event for the purpose of this provise -

- (i) the rateable value of the lot shall be the rateable value of the said building or part thereof, and
  - (i1) the yearly rent or a due proportion thereof for the lot under sub-clause (b) hereof shall become due and shall be paid on the first quarterly day after the date on which the said undivided share or interest was first beneficially owned by a person other than the Grantee or in an unbroken line of succession in title to the said undivided share or interest a person who is descended through the male line from him.

A 2. (a) In lieu of the collection of the yearly rent by the Director under General Condition 1(b) hereof, there may, in addition to the rates to be collected quarterly by the Collector of Rates under the Rating Ordinance in respect of any tenement comprised wholly or partly within the lot, be demanded and collected by the Collector of Rates from the Grantee an amount equal to one fourth of 3% of the rateable value of any such tenement together with such sum as may be necessary to make the total number of dollars in any such demand an integer. For the purpose of this sub-clause the provisions of General Condition 1(d)(i) and (ii) hereof shall apply mutatis mutandis.

- · · · ·

Collection of amount in lieu of rent Tenement partly on lot (b) For the purpose of sub-clause (a) hereof, in the event that only part of a tenement is comprised within the lot the amount that may be demanded in respect of that part shall bear the same proportion to 3% of the rateable value of the tenement as, in the opinion of the Director whose decision shall be final, the area of such part bears to the area of the whole of such tenement.

5

Payment on demand

(c) Upon a demand being made by the Collector of Rates under sub-clause (a) hereof the Grantee shall pay the amount so demanded within the time specified in such demand.

Discharge

(d) Payment under sub-clause (c) hereof of an additional demand under sub-clause (a) shall operate as an absolute discharge for the Grantee from his liability to pay the rent in respect of the quarter for which such demand was made.

Correction of rateable value

3. The reference in General Condition 1(c) hereof to the rateable value of a tenement as set out from time to time in the list declared or to an interim valuation made under the Rating Ordinance shall include in a case where such rateable value or interim valuation is corrected, altered or varied under that Ordinance, a reference to such rateable value or interim valuation as so corrected, altered or varied.

Acknowledge- 4. ment by Grantee

The Grantee hereby expressly acknowledges :

- (a) that the Government shall be under no liability whatsoever to the Grantee (which expression shall for the purpose of this Condition only include his successors, assigns, mortgagees, tenants or other occupiers of the lot whether lawful or otherwise) for any loss or damage howsoever arising in connection with or as a consequence of his grant of the lot and its subsequent development;
- (b) that he has acquired the lot based upon his own evaluation of land records and available geotechnical information whether obtained from Government sources or otherwise and has satisfied himself as to the state and condition of the lot in relation to the purposes for which the lot is to be developed or redeveloped;
- (c) that he takes the lot, whether on, above or below the surface of the ground, in the state and condition as it exists on the date on which possession of the lot is deemed to be given in accordance with Special Condition No. 2 of these Conditions; and
- (d) that he shall not be entitled to revoke, withdraw, cancel or resile in any way whatsoever from this Agreement nor be entitled in any way whatsoever to compensation or a reduction in the premium or any other compromise whatsoever should he subsequently determine that the lot is not fit for the purposes for which he acquired the lot.

warranty

Exclusion of 5. (a) The Government has given no warranty, express or implied, as to the suitability or fitness of the lot or any part thereof for development whether in accordance with these Conditions or otherwise. The Grantee for himself, his successors or assigns undertakes not to make any claim against the Government for any loss or damage whatsoever which he may suffer as a result of or arising from the state and condition of the lot making it either unfit for the purpose for which he acquired the lot or rendering it impossible to achieve the scale of development originally intended.

> (b) The Government in no way warrants the accuracy or correctness in any way whatsoever of any information made available or obtained, and in particular does not warrant that the lot is fit and suitable for any particular purpose.

6 The Grantee shall indemnify and keep indemnified the Government against all actions, proceedings, liabilities, demands, costs, expenses and claims whatsoever arising from any damage caused to adjacent or adjoining land where such damage has, in the opinion of the Director (whose opinion shall be final and binding upon the Grantee), arisen out of any development or redevelopment affecting the lot or part thereof or out of any other works which the Grantee is required to undertake in compliance with these Conditions.

Setting out

-- ,

Indemnity

by Grantee

7. (a) The District Lands Officer, Sai Kung (hereinafter called "the District Lands Officer") will, at such time as he thinks fit or upon the application of the Grantee, set out the lot on the ground and the Grantee or his authorized representative after such setting out, when called upon by the District Lands Officer, will attend at the lot to inspect the survey marks delineating the lot on the ground and will be given a plan showing the positions and descriptions of each such mark. The Grantee shall not commence any operations for building on the lot until it shall have been so set out by the District Lands Officer. The Grantee shall take or cause to be taken all proper care and precautions to safeguard the said survey marks from disturbance or removal. If, before commencing any operations for building on the lot, any of the said survey marks are disturbed or removed, the Grantee shall apply in writing to the District Lands Officer for replacement by survey and shall pay on demand to the Government in advance the prescribed fee therefor.

SK/SHE06/92

Eneroachment upon Government land

(b) In the event that the Grantee is found to have encroached upon and to be occupying Government land the District Lands Officer may in his absolute discretion either require the Grantee to demolish any building or part of any building standing on such Government land, to reinstate such Government land to his satisfaction and deliver vacant possession of the same to the Covernment or pay to the Government such sum as the District Lands Officer in his absolute discretion shall determine as the premium in respect of such Government land. A certificate under the hand of the District Lands Officer shall be conclusive as to the extent of any such encroachment and as to the amount of the premium payable in respect thereof. If the Grantee fails to demolish any building as required by the District Lands Officer as above, it shall be lawful for the District Lands Officer to demolish such building and the Grantee shall pay on demand to the Government the amount certified by the District Lands Officer as In the event that the District the cost of such demolition. Lands Officer exercises his discretion to require the payment of premium as aforesaid, upon the payment of such premium the area of Government land encroached upon shall be deemed in all respects to be part of the lot and shall be included in the lease of the lot when issued.

Maintenance

The Grantee of the lot shall throughout the tenancy 8. maintain all buildings erected or which may at any time hereafter be erected on the lot in good and substantial repair and condition, and in such repair and condition deliver up the same at the expiration or sooner determination of the tenancy. In the event of the demolition at any time during the tenancy of any building then standing on the lot or any part thereof the Grantee shall replace the same either by sound and substantial buildings of the same type and of no less gross floor area or by buildings of such type and value as shall be approved by the District Lands Officer. In the event of demolition as aforesaid the Grantee shall within one month of such demolition apply to the District Lands Officer for consent to carry out building works for the redevelopment of the lot and upon receiving such consent shall within three months thereof commence the necessary work of redevelopment and shall complete the same to the satisfaction of and within such time limit as is laid down by the District Lands · · · Officer. . .

Boundary stones 9. The Grantee shall permit boundary stones properly cut and marked with the number of the lot to be fixed at each angle thereof and either in or on the land itself or in or on any building erected thereon as may be required by the District Lands Officer and shall pay the fees prescribed by him therefor as well as the prescribed fees for the refixing of such boundary stones which, through being lost, damaged or removed, need replacing.

SK/SHE06/92

Right to inspect

10. (a) The Grantee shall throughout the tenancy, at all reasonable times, permit the District Lands Officer or his authorised representatives, with or without having given notice, to enter in or upon the lot or any part thereof or any building or part of any building erected on the lot for the purpose of inspecting the same so as to ascertain that there is no breach of or failure to observe any of these Conditions.

Breach of lease conditions

fulfilment by the Grantee of his obligations (b) The under these Conditions shall be a condition precedent to the grant or continuance of the tenancy, and in the event of any default by the Grantee in complying therewith such default shall be deemed to be a continuing breach and the subsequent acceptance by or on behalf of the Government of any rent or rates or other payments whatsoever shall not (except where the Government has notice of such breach and has expressly acquiesced therein) be deemed to constitute any waiver or relinquishment or otherwise prejudice the enforcement of the Government's right of re-entry for or on account of such default or any other rights, remedies or claims of the Government in respect thereof under these Conditions which shall continue in force and shall apply also in respect of default by the Grantee in the fulfilment of his obligations under these Conditions within any extended or substituted period as if it had been the period originally provided.

Re-entry

11. (a) Upon any failure or neglect by the Grantee to perform, observe or comply with any of these Conditions the Government shall be entitled to re-enter upon and take back possession of the lot or any part thereof and all or any buildings, erections and works thereon or on such part and thereupon this Agreement and the rights of the Grantee hereunder shall absolutely cease and determine (in respect of such part if the re-entry is upon a part only) but without prejudice nevertheless to the rights, remedies and claims of the Government in respect of any breach, non-observance or non- performance of any of these Conditions.

Nο on re-entry

(b) In the event of re-entry by the Government for or in compensation respect of or arising out of the breach, non-observance or non-performance by the Grantee of the provisions of these Conditions, the Grantee shall not be entitled to any payment or compensation whatsoever whether in respect of the value of the land, or for any buildings thereon, or for any amount expended by the Grantee in the preparation, formation or development of the lot or otherwise. • -

Lease

12. (a) When these Conditions have been performed and complied with to the satisfaction of the District Lands Officer, the Grantee shall subject to approval of his title by the District Lands Officer be entitled to a lease of the lot for the term stated in the preamble to these Conditions.

. .

(b) The Grantee shall execute and take up the lease of the lot when called upon to do so by the District Lands Officer and shall pay the prescribed fees therefor, and an endorsement by the

- 9 -

Land Officer on these Conditions or on the District Land Office Registers that plans of the lot are in the District Land Office and that the lease thereof must be taken up before any further dealings with the lot can be registered shall have effect accordingly.

(c) Pending the issue of the lease the tenancy of the lot shall be deemed to be upon and subject to, and such lease when issued shall be subject to and contain all exceptions, reservations, covenants, clauses, conditions and provisos as are now inserted in the leases of similar lots in Hong Kong as varied, modified or extended by these Conditions.

Definitions

13. (a) Except in General Condition 1(f) hereof for the purposes of which it shall mean only the original Grantee named in the Memorandum of Agreement, the expression "Grantee" shall in these Conditions include the person or persons entering into and executing this Agreement and where the context so admits or requires his, her or their executors, administrators and assigns, and the expression "lot", except where the context otherwise requires, means the lot stated in the Particulars of the Lot hereof. Where the context so admits or requires, words importing the masculine gender shall be deemed to include females and corporations, and words in the singular shall be deemed to include the plural.

(b) The foregoing General Conditions shall be read and construed as varied or modified by the Special Conditions hereinafter contained, and the expression "these Conditions" whenever used shall mean and include the General and Special Conditions.

Marginal notes 14. The marginal notes to these Conditions shall not be deemed to be part of these Conditions and shall not affect the interpretation or construction thereof.

1.0

\$

#### 10 -

#### SPECIAL CONDITIONS

- 1.
- The Grantee shall at his own expense :
  - (a) surrender to the Government the old lot or lots described in the Second Schedule hereto contemporaneously with the execution of this Agreement; and
  - (b) remove any structure and material therefrom as may be required by and to the satisfaction of the District Lands Officer.

Possession 2. Possession of the lot shall be deemed to be given and taken by the Grantee on the date of this Agreement.

3. (a) The Grantee shall develop the lot by the erection thereon of a building in all respects complying with these Conditions and the provisions of all Ordinances, Byelaws and Regulations relating to building and sanitation and planning which are or may at any time be in force in the New Territories (other than New Kowloon), such building to be completed and made fit for occupation before the expiration of 36 months from the date hereof.

. (b) Upon development or re-development of the lot or any part thereof the total gross floor area of the building erected or to be erected on the lot shall not be more than 195.09 square metres or less than 117.05 square metres.

(c) For the purposes of these Conditions the expression "gross floor area" means that area contained within the external faces of the external walls of any building erected or to be erected on the lot measured at each floor level (including any floor below the level of the ground) but excluding the area of two balconies and one canopy, all projecting from the same side of the building for a distance of not more than 1.22 metres and each of such balconies having a parapet or railing not being more than 1.22 metres nor less than 0.92 metre in height and not being enclosed, and the area of any air-conditioner hoods projecting from the said building for a distance of not more than 0.61 metre.

Warranty 4. (a) The Grantee expressly warrants, represents and declares by Grantee that -

- (i) he is a person descended through the male line from a person who was in 1898 a resident of an established village in Hong Kong,
- (ii) he has not received a grant of any land, other than the lot, by way of private treaty grant, or restricted village auction or exchange at nil or concessionary premium, or a modification of a lease by way of a grant of any building licence free of or at concessionary premium,

Building covenant

- (iii) he has not acquired (except under the terms of a will, letters of administration or under the provisions of Chapter 97 of the Laws of Hong Kong), without the payment of additional premium to the Government, the ownership of any land previously granted by the Government by way of private treaty grant, restricted village auction, exchange or building licence at nil or concessionary premium to a person descended through the male line from a person who was in 1898 a resident of an established village in Hong Kong, and
  - (iv) consequently he is qualified to receive the grant of the lot by way of private treaty from the Government/at a concessionary premium/free of premium,

and agrees that if he is found to be in breach of this warranty, representation and declaration the right of re-entry referred to in General Condition 11 of these Conditions shall be exercisable in respect of such breach.

the additional premium having been paid in (b) Upon accordance with Special Condition 5(d)(ii) hereof; upon the consent in writing of the District Lands Officer to an alienation having been obtained and upon such written consent having been registered against the lot in the District Land Office, Sai Kung, this Special Condition shall be null and void and shall cease to have effect,

(a) Except as provided in sub-clauses (b), (c) and (d) Restriction 5. hereof, the Grantee (which expression shall, for the purpose of this Special Condition, include any mortgagee, whether legal or equitable, or an assignee of such mortgagee), having obtained this grant by way of private treaty at a concessionary premium, shall not assign, partition, mortgage, charge, demise, underlet, part with the possession of or otherwise dispose of the lot or any part thereof or any interest therein or enter into any agreement so to do, whether directly or indirectly, or whether by' way of direct or indirect reservation, grant of any right of first refusal, option, power of attorney, building agreement or through a solicitor, agent, contractor. trustee or otherwise howsoever unless-

- (i) a period of Five years has lapsed form the date of a letter issued by the District Lands Officer confirming that these Conditions have been complied with to his satisfaction, or
- (ii) the Grantee has paid to the Government the additional premium in accordance with Special Condition 5(d)(11) hereof."

(b) The Grantee may, with the prior written consent of the Building District Lands Officer and in conformity with any conditions mortgage imposed by him (including the payment of such fees as may be required by him), mortgage or charge the lot as a whole (but not a part thereof or an undivided share or interest therein) but only for the purpose of the development of the lot and then only by way of a building mortgage in such form and containing such provisions as the District Lands Officer shall approve or require.

SK/SHD06/92

on allenation Underletting (c) Upon certification by the District Lands Officer that these Conditions have been complied with to his satisfaction the Grantee may underlet the lot if, and only if, the underletting is-

- (i) at a rack rent,
- (ii) without the charge of a premium or fine,
- (iii) for a term not exceeding 5 years, and
- (iv) without any right or option of renewal or extension.

Alienation (d) Upon certification by the District Lands Officer that these Conditions have been complied with to his satisfaction the Grantee may, with the prior written consent of the District Lands Officer and on such conditions as may be imposed by him (including the payment of such fee as may be required by him), assign (but not partition), mortgage, charge or part with the possession of the lot (as a whole only and not a part thereof) or the building or part of the building thereon or, subject to sub-clause (e) hereof, any interest therein or enter into any agreement so to do but only to -

- a person who has satisfied the District Lands Officer that at the date of the application for such consent he is a person descended through the male line from a person who was in 1898 a resident of an established village in Hong Kong, or
- (ii) a person other than a person referred to in sub-clause (d)(i) hereof provided the Grantee shall have first paid to the Government an additional premium equivalent to the difference between the amount of premium (if any) paid by the Grantee to the Government at the date , of this grant and the full market value of the lot as at the date of the application to the District lands Officer for such consent, such value to be determined by the District Lands Officer whose decision shall be final and binding upon the Grantee, whereupon, such additional premium having been paid and such consent having been obtained, sub-clauses (a), (b), (c) and (d) hereof shall be null and void and shall cease to have effect.

Undivided (e) The Grantee shall not assign or otherwise create an shares undivided share or interest in the lot without complying with the following provisions -

- (i) one undivided 1/3rd share each shall first be allocated, by a Deed of Mutual covenant complying with (iii) hereunder to the Ground Floor, the First Floor and the Second Floor of the building on the lot;
- (ii) neither the lot nor any unit in the building thereon shall be divided, as to the title thereto, vertically; and

- 12

SK/SHE06/92

(iii) such assignment or other disposal (other than an underletting not exceeding 5 years) shall be made subject to and with the benefit of a Deed of Mutual Covenant which shall provide, inter alia, for a right of access to and through all the common parts of the lot and the building thereon and for the proper maintenance and repair of the said building and the common parts thereof free from obstruction.

Registration 6. Every assignment, mortgage, charge, underletting or other alienation of the lot or any part thereof or any interest therein shall be registered at the District Land Office, Sai Kung.

Development conditions 7. (a) No structure shall be erected on the lot other than one building which shall neither contain more than three storeys nor exceed a height of 8.23 metres, and the maximum roofed-over area of the lot shall not exceed 65.03 square metres PROVIDED always that where the building is of a height of more than 7.62 metres but not more than 8.23 metres, then the thickness of each load-bearing wall -

- (i) shall, in the case of a load-bearing reinforced concrete wall, be not less than 175 millimetres; or
- (ii) of the lowest storey shall, in the case of a load-bearing brick wall, be not less than 340 millimetres; and
- (iii) of any higher storey shall, in the case of a load-bearing brick wall, be not less than 225 millimetres.

(b) The Grantee shall not divide vertically the building erected or to be erected on the lot or make or erect or permit or suffer to be made or erected any openings, doorways, walkways, passages or other works within or outside the said building or in or on any walls or floors or any part of such building, which shall result in such building being internally linked to and accessible from any building adjoining or adjacent thereto.

The Grantee shall not make or permit to be made any 8. window or other opening in any building erected or to be erected on the lot without the prior written consent and approval of the District Lands Officer provided that a window or windows, opening or openings may be made in the front or rear of such building without such consent and approval (the decision of the District Lands Officer as to which face or faces of such building constitute the front and rear and as to what shall constitute a window or opening shall be conclusive and binding upon the Grantee). If the District Lands Officer gives his consent and approval to a window or opening in a face of any building erected or to be erected on the lot (other than the front and rear faces) such consent and approval shall be given on such terms and conditions as he sees fit, and in addition any such window or opening shall be so made that it can, if required by the District Lands Officer at his absolute discretion, be closed up in the event of any development of any adjoining or neighbouring lots.

. .

Side windows

SK/SHE06/92
Balconies Not more than two balconies and one canopy will be 9. permitted to project over and above Government land provided and canopy that :-

- (a) such balconies and canopy shall be erected on the same side of the building erected or to be erected on the lot and project for a distance of not more than 1.22 metres; and
- (b) each of such balconies shall have a parapet or railing not exceeding 1.22 metres nor less than 0.92 metre in height along the outer edges and shall not be enclosed.
- (c) the position of such balconies and canopy shall be subject to the prior written approval of the District Lands Officer.

Definitions 10. For the purposes of these Conditions -

> "balcony" means any structure projecting from any wall of the building erected or to be erected on the lot to carry a floor or roof load either cantilevered or supported by brackets;

"roofed-over area" means the area of the building erected or to be erected on the lot enclosed within the external faces of the main structural walls (which includes any party wall) of that building together with the area of any balcony, stairway, verandah, porch, canopy or any other projection from the said building but excludes -

- (i) the area of any over-hang;
- (ii) the area of not more than two balconies;

(1ii) one canopy;

(provided such balconies and canopy project from the same side of the said building for a distance of not more than 1.22 metres, and each of such balconies a parapet or railing not being more than having 1.22 metres nor less than 0.92 metre in height and not being enclosed); and

(iv) the area of any air-conditioner hood projecting from the said building for a distance of not more than 0.61 metre;

"canopy" means any structure which projects more than 750 millimetres from any wall of the building erected or to be erected on the lot to provide protection from rain or sum, not carrying any floor load, either cantilevered or supported by brackets;

"height" in relation to the building means the perpendicular height measured from the level of its lowest point at ground level to the level of the highest point of its roof provided that in determining the highest point of a roof no account will be taken of -

SK/SHE06/92

t.

. . .

15

:

. .

- (i) one stairhood if it has a roof area of not more than 7.44 square metres, a height of not more than 2.14 metres and is erected and used solely to provide protection from rain and sun for a stairway used to gain access to the roof of the building:
- (ii) any parapet on the roof if the height is not more than 1.22 metres; or · \_\_\_\_

• 1

· , · ·

· ·

. . .

(iii) one water storage tank if it has a roof area of not more than 2 square metres, a height of not more than 1.22 metres and is installed at any point on the roof other than on a stairhood.

· · · "overhang" means any structure projecting for a distance of not more than 0.23 metre from any wall of the building erected or to be erected on the lot to provide protection from rain or sun, not carrying any floor load.

User

5/1 .

, e •

The lot and any building erected thereon or any part of 11. such building shall not be used for any purpose other than 

- Formation The area shown coloured pink on the plan annexed hereto 12. shall be formed to the satisfaction of the District Lands Officer by the Grantee at his own expense before any building operations commence on the lot.
- The Grantee shall not do or permit or suffer anything Anti-13. to be done at any time in or upon the lot or any part thereof or nuisance any building or any part of any building erected or to be erected thereon which may be or become a nuisance or annoyance or which may cause damage or inconvenience ito the Government or to the owners or occupiers of any adjoining or neighbouring lot or lots or premises.
- 14. (a) The Grantee shall not cut away, remove or set back any Set back Government land adjoining the lot except with the special written approval of the District Lands Officer who may at his sole discretion give such consent on such terms and conditions as he may see fit including the granting of an additional area of Government land as an extension to the lot at such premium as he may determine. ,

(b) Where consent has been given pursuant to Special Cutting Condition No.14(a) hereof for any cutting away, removal or away setting back of any land, or any building up or filling in or any slope treatment works of any kind whatsoever within the lot or on any Government land which is required for the purpose of or in connection with the formation, levelling or development of the lot or any part thereof or any other works required to be done by the Grantee under these Conditions, the Grantee shall carry out, construct or bear the cost of the carrying out or construction of such slope treatment works, retaining walls or other support, protection, drainage or ancillary or other works as shall or may

1.1.5 前:

1. 1. 1.

¢

then or at any time thereafter be necessary to protect and support such land within the lot and also any adjacent or adjoining Government or leased land and to obviate and prevent any falling away, landslip or subsidence occurring thereafter, and shall at all times during the term hereby granted maintain at his own expense the said land, slope treatment works, retaining walls or other support, protection, and drainage works in good and substantial repair and condition to the satisfaction of the District Lands Officer. In the event that as a result or arising out of any formation, levelling, development or other works done by the Grantee any falling away, landslip or subsidence occurs at any time, whether in or from any land, within the lot or from any adjacent or adjoining Government or leased land, the Grantee shall at his own expense reinstate and make good the same to the satisfaction of the District Lands Officer and shall indemnify the Government its agents and contractors from and against all costs, charges, damages, demands and claims whatsoever which shall or may be made, suffered or incurred through or by reason of such falling away, landslip or subsidence. In addition to any other rights or remedies herein provided for breach of any of these Conditions the District Lands Officer shall be entitled by notice in writing to call upon the Grantee to carry out, construct and maintain the said slope treatment works, retaining walls, Clandr or other support, protection, and drainage works or to reinstate and make good any falling away, landslip or subsidence, and if the Grantee shall neglect or fail to comply with such notice to the satisfaction of the District Lands Officer within the period specified therein the District Lands Officer may forthwith execute and carry out the work and the Grantee shall on demand repay to the Government the cost thereof.

Slopes

1

15. The Grantee shall, if required so to do by the investigation District Lands Officer, appoint at his own expense an engineer or consultant specialising in the practice of soil and rock engineering and, using the services of the said engineer or , consultant, shall undertake a full soil and rock investigation of such slopes, whether within or adjoining or adjacent to the lot, as shall be specified by the District Lands Officer.

Spoil or debris

16. (a) In the event of spoil or debris from the lot or from other areas affected by any development of the lot being eroded and washed down on to public lanes or roads or into road-culverts, sewers, storm-water drains or nullahs or other Government properties, the Grantee shall be held responsible and shall pay to the Government on demand the cost of removal of the spoil and debris from or of damage to the public lanes or roads or road-culverts, sewers, storm-water drains or nullahs or other properties. Government The Grantee shall indemnify the Government against all actions, claims and demands arising out of any damage or nuisance to private property caused by such erosion and washing down.

earth, debris, spoil of whatsoever nature, Dumping on (ь) No OF building materials shall be dumped on any adjoining Government Government land land.

Storm or rain water 17. All storm or rain water from the lot shall be conveyed into the nearest stream course, catchpit, channel or storm-water drain as required and in a manner to be approved by the District Lands Officer.

Connecting 18. The Grantee shall pay to the Government on demand the drains and cost of connecting any drains and sewers from the lot to the sewers Government storm-water drains and sewers when laid. Such works shall be carried out by the District Lands Officer who shall incur no liability to the Grantee in respect thereof.

17

Water supply

19. The Government does not undertake to supply water to the lot. The Grantee shall make his own arrangement with regard to such supply under such conditions as may be imposed by the District Lands Officer. If water from Government mains should become available, it shall not be used for flushing purposes on any part of the lot without the written consent of the Water Authority. Consent to use fresh water for such purposes will not be given unless an alternative supply is impracticable and evidence to that effect is offered to and accepted by the Water Authority. If salt water is provided, the fact that the water may be unsuitable for the plumbing installed will not be accepted as a justification for use of mains fresh water for flushing purposes.

Flushing water 20. An adequate supply of flushing water must be provided whenever a water closet fitment is installed. In the event of such flushing supply being of Government mains fresh or salt water, the entire plumbing system for such flushing purpose shall be constructed with materials suitable for use with salt water and the flushing apparatus shall be of the valveless syphonic type with external overflow.

Utility services

The Grantee shall take or cause to be taken all proper 21. and adequate care, skill and precautions at all times and particularly during any construction, maintenance, renewal or repair work to avoid doing any damage to any Government or other existing drain, waterway or watercourse (including water main), footpath, sewer, nullah, pipe, cable, wire, utility service or any other works or installations (all together hereinafter referred to as "the Works and Services") being or running upon, over, under or adjacent to the lot or any part thereof, provided that the Grantee before carrying out any such work as aforesaid shall make or cause to be made such proper search and enquiry as may be necessary to ascertain the present position and levels of any of the Works and Services, and shall submit his proposals for dealing with any of such Works and Services in writing to the District Lands Officer for his approval in all respects, and shall not carry out any work whatsoever until the District Lands Officer shall have given his written approval to the works and to such proposals aforesaid, and shall comply with any requirement of the District Lands Officer in respect of the Works and Services, and shall bear the cost of meeting such requirements including the cost of any necessary diversion, relaying or reinstatement, and shall at his own expense, in all respects repair, make good and reinstate to the satisfaction of the District Lands Officer any damage or disturbance caused to the

SK/SHE06/92

- 18 -

surface of the lot or any of the Works and Services running on, over, under or adjacent to the lot in any manner arising out of any such construction, maintenance, renewal or repair work. If the Grantee fails to carry out any such necessary diversion, relaying, repairing, making good and reinstatement of the lot or any part thereof or of any of the Works and Services to the satisfaction of the District Lands Officer, he, the District Lands Officer may carry out any such diversion, relaying, reinstatement or making good as he considers necessary and the Grantee shall pay to the Government on demand the cost of such works.

Drainage 22. The drainage of any building erected on the lot shall be effected as may be required by the District Lands Officer, and the Grantee shall make all arrangements at his own expense and to the satisfaction of the District Lands Officer for the treatment and disposal of sewage, sullage and foul, contaminated or waste water by the construction of suitable works either within the lot or on Government land or otherwise and on such terms as the District Lands Officer shall require, and the Grantee shall be solely liable for any damage or nuisance caused thereby.

Facilities 23. The Government does not undertake to provide facilities for flush for flush drainage and gives no guarantee that such facilities drainage will become available.

Grave 24. No grave shall be made on the lot, nor shall any human remains whether in earthenware jars or otherwise be interred therein or deposited thereon.

Right-of-way 25. The Government does not guarantee any right-of-way to the lot and the Grantee must accordingly make his own arrangements for acquiring such right-of-way.

Certificate 26. (a) No building works, site formation works or drainage of exemption works shall be carried out on the lot unless and until the Grantee shall have applied for and obtained from the District Lands Officer a certificate of exemption or separate certificates of exemption in respect of such building works, site formation works or drainage works pursuant to the Buildings Ordinance (Application to the New Territories) Ordinance Chapter 121.

Certificate (b) Within two weeks of the completion of any building of compliance hereafter to be erected on the lot the Grantee shall inform the District Lands Officer in writing of such completion.

> (c) No building at any time erected on the lot shall be occupied in any way, except by not more than two watchmen, until the District Lands Officer shall have certified in writing that these Conditions have been complied with to his satisfaction.

Compliance 27. The Grantee shall comply with and observe all with Ordinances, bye-laws, regulations and rules for the time being in legislation force in Hong Kong governing the control of any form of pollution, including air, noise, water and waste pollution, and for the protection of the environment. - 19 -

Compliance 28. Any building or buildings erected on or to be erected with Town on or development on or proposed development on or use of or Planning proposed use of the lot or any part thereof and/or of any area or ordinance areas outside the lot shall in all respects comply with the requirements of the Town Planning Ordinance and any amending legislation.

Director of Except with the prior written consent of the Director 29. Environmental of Environmental Protection, the Grantee shall not, in or upon Protection's the lot or any part thereof or any building or part of any prior consent building erected or to be erected thereon, install or permit or to equipment suffer to be installed any machinery, furnace or boiler or any other equipment or use or permit or suffer to be used any fuel or and process any method or process of manufacture or treatment that might in · . any circumstance result in the discharge or emission of any pollutant or any noxicus, harmful or corrosive matter, whether it be in the form of gas, smoke, liquid, solid or otherwise. The granting of such consent shall not be deemed to modify or alter in any way the Covernment's powers for controlling pollution now or hereafter imposed by any Ordinance, byelaw, regulation or other enactment.

Fuel

30. The Grantee shall not use any fuel on the lot or any part thereof or in any building or any part of any building erected or to be erected thereon other than town gas, liquefied petroleum gas, natural gas, kerosene or other conventional liquid fuel with a sulphur content not exceeding 0.5% by weight and a viscosity of not more than 6 centistokes at  $40^{\circ}$ C, or a conventional solid fuel with a sulphur content not exceeding 1% by weight.

- Removal of waste affluent containing sand, cement, silt or any other suspended or dissolved material to flow from the let onto any adjoining land or allow any waste matter which is not part of the final product from waste processing plants to be deposited anywhere within the lot and shall have all such matter removed from the lot or any building erected or to be erected thereon in a proper manner to the satisfaction of the Water Authority/Director of Environmental Protection.
- Discharge 32. The Grantee shall not discharge directly or indirectly or cause or permit or suffer to be discharged into any public into sewers etc. sewer, storm-water drain, channel, stream-course or sea any trade effluent or foul or contaminated water or cooling or hot water without the prior written consent of the Water Authority/Director of Environmental Protection, who may as a condition of granting consent require the Grantee to provide, operate and his maintain at the Grantee's own expense, within the lot or otherwise and to the satisfaction of the Water Authority/Director of Environmental Protection suitable works for the treatment and disposal of such trade effluent or foul or contaminated or cooling or hot water.

~ 20 -

Supervisory 33. and overhead charges Wherever in these Conditions it is provided -

- (i) that the Government or its duly authorized officers referred to in these Conditions shall or may carry out works of any description on the lot or any part thereof or outside the lot (whether on behalf of the Grantee or on the failure of the Grantee to carry out such works or otherwise) at the cost of the Grantee or that the Grantee shall pay or repay to the Government or its duly authorized officers on demand the cost of such works, such cost shall include such supervisory and overhead charges as may be fixed by the Government or by its duly authorized officers; or
- (ii) that the prior approval or consent in writing of the Government or its duly authorized officers is required, they may give the approval or consent on such terms and conditions as they see fit or refuse it at their sole discretion.

MEMORANDUM OF AGREEMENT

MEMORANDUM that yIP Tin-leung (美 大 良 ) of Ground Floor, No. 88, Wang Che Village, Kai Ham, New Territories

the person whose name is hereunder written, has this day agreed to carry out the terms and conditions of the foregoing Conditions of Exchange and hereby agrees fully to observe and perform the said Conditions and to be bound thereby, and the District Lands Officer on behalf of the Governor hereby ratifies and confirms the said Exchange on the above Conditions.

Dated this 17th day of June 1994 ••••• Signature of the Grantee Witness to signature of the Grange Stephen W K. Lo (HKIC No. ) Address 3rd Floor, Fung House, 19-20 Connaught Road Central, Hong Kong Occupation Solicitor, Hong Kong. ( LJ. MacNaughton ì Witness to signature of District District Lands Officer, Sai Kung Lands Officer, Sai Kung : District Lands Office, Address Certified Correct, Sai Kung, 3/F., Sai Kung Government Offices Occupation : Personal Secretary ( YEUNG Siu Fung Senior Land Executive )

SK/SHE06/92

÷...

Dated 17th June 19 94

AGREEMENT

&c

CONDITIONS OF EXCHANGE

OF

D.D. 249 764 ..... Grantee :---Crown Rent :- As specified in General

Condition No. 1

Term :~ From the date hereof until 30th June 2047.

ę

( LJ. MacNaughton ) Assistant Land Officer

"A" Book Vol. ..... Page ..... Paid Vide Receipt No. .... Shroff ..... Date .....

District Land Office, Sai Kung







Date: 16.12.92

# **APPENDIX C**

**Proposed Site Formation Plan** 



# NOTES FOR SOIL NAILS

# GENERAL NOTES

- 1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
- 2. ALL LEVELS ARE IN METRES ABOVE PRINCIPAL DATUM.
- 3. FOR INSTALLATION DETAILS OF SOIL NAILS, REFER TO SOIL NAIL SCHEDULE.
- 4. RECOMMENDATIONS AND REQUIREMENTS GIVEN IN GEOGUIDE 7 SHALL BE FOLLOWED.

# MATERIALS

- 1. THE CONTRACTOR SHALL SUBMIT SAMPLES OF SOIL NAILS COMPONENTS TO THE ENGINEER FOR APPROVAL AND INSTALL AS DIRECTED BY THE ENGINEER 2. ALL STEEL BARS SHALL COMPRISE HIGH YIELD TENSILE STEEL MANUFACTURED TO CS2:2012, ALL STEEL BARS SHALL BE PRE-FABRICATED WHICH THE STEEL BARS TO BE OBTAINED SHALL BE APPROVED BY THE ENGINEER. IN FCTORY CONDITIONS. BEFORE ANY ORDER IS PLACED. THE SOURCE FROM ARRANGEMENTS SHALL BE MADE TO THE SATISFACTION OF THE ENGINEER TO ENSURE THAT ALL
- MATERIALS DELIVERED TO SITE SHALL COME FROM THIS SOURCE ONLY. 3. APPROVAL GIVEN BY THE ENGINEER TO ANY SOURCE OF SOIL NAILS DOES NOT RELIEVE THE CONTRACTOR OF HIS CONTRACTUAL OBLIGATION TO SUPPLY MATERIALS WHICH COMPLY WITH THE SPECIFICATION. ANY MATERIAL WHICH IS UNSATISFACTORY, IN THE OPINION OF THE ENGINEER, SHALL BE REJECTED.
- 4. ALL STEEL BARS AND ASSOCIATED COUPLERS, STEEL PLATES AND NUTS SHALL BE HOT-DIP GALVANISED WITH A MINIMUM ZINC COATING OF 610 g/m<sup>2</sup> TO BS EN ISO 1461: 1999.
- 5. ALL EXPOSED STEEL SHALL BE PROTECTED BY APPROVED CORROSION PROTECTION. THREADS TO NUTS AND COUPLERS SHALL BE CUT PRIOR TO GALVANISING AND SHALL BE SIZED TO MATCH WITH THE GALVANISED HREAD ON THE BAR
- 6. MANUFACTURERS TEST CERTIFICATES AND TEST CERTIFICATES OF APPROVED LABORATORY SHALL BE SUPPLIED FOR EACH CONSIGNMENT OF BARS TO SHOW COMPLIANCE WITH THE MINIMUM REQUIREMENTS OF THIS STANDARD. ANY BARS ARS SHOWING SIGNS OF PITTING SHALL NOT BE USED.
- 7. THE CONTRACTOR SHALL FURNISH WITH EACH NAIL ALL ACCESSORIES INCLUDING STEEL BARS, PLASTIC SPACERS, STEEL BEARING PLATES, BALL WASHERS, MACHINE WASHERS, HEXAGONAL NUT, WEDGES AND TAPER WASHERS IF USED, SEALS AND RIGID PLASTIC GROUT INJECTION TUBES FOR APPROVAL BY THE ENGINEER.
- 8. ALL THREADS SHALL BE FREE OF RUST AND BURRS AND THE NUT SHALL BE FREE RUNNING ON THE BOLT. THE THREADS OF THE NUT AND OF THE PROJECTING END OF THE BOLT, AND THE SURFACES OF THE BALL MACHINES AND TAPERS WASHERS SHALL BE LUBRICATED WITH AN APPROVED RUST PREVENTATIVE PLASTIC GREASE BEFORE TIGHTENING THE NUT.
- 9. CLASS 1 CORROSION PROTECTION MEASURES ARE PROVIDED WHERE SOIL NAIL BARS ARE HOT-DIP GALVANISED WITH ZINC COATING PLUS CORRUGATED PLASTIC SHEATHING

# DRILLING

- 1. THE NAIL LOCATIONS ARE TO BE CONFIRMED ON SITE BY THE ENGINEER BASED ON THE SITE CONDITIONS.
- 2. THE ORIENTATION FOR EACH DRILL HOLE SHALL BE NORMAL TO THE SLOPE FACE AT THAT POINT. A SUITABLE TEMPLATE SHALL BE USED TO ENSURE THAT ALL HOLES ARE DRILLED IN THE CORRECT ORIENTATION.
- 3. HOLES OF DIAMETER SPECIFIED SHALL BE DRILLED FOR THE SOIL NAILS IN LOCATIONS, ORIENTATIONS AND TO THE DEPTHS ACCORDANCE WITH THE DRAWINGS OR AS SPECIFIED BY THE ENGINEER. DRILLING SHALL USE ONLY AIR FLUSH UNLESS SPECIFICALLY INSTRUCTED OTHERWISE BY THE ENGINEER IN WRITING. THE DRILLING METHOD USED SHALL BE SUBJECT TO THE AGREEMENT OF THE ENGINEER.
- 4. THE DRILLING EQUIPMENT SHALL BE SUITABLE FOR THE STRATA ENCOUNTERED AND FOR INSERTION OF STEEL BARS TO THE REQUIRED LENGTH. THE DEVIATION FROM THE SPECIFIED DIRECTION SHALL NOT EXCEED 5% OF THE LENGTH. THE PERMITTED DEVIATION OF DRILLHOLES SHALL BE SUCH THAT A ALL PLACES A MINIMUM OF 10mm GROUT COVER TO THE SOIL NAILING BARS AND COUPLER IS ACHIEVED. WHERE REQUIRED BY THE ENGINEER. THE CONSTRACTOR SHALL CARRY OUT AN INTERNAL SURVEY OF THE DRILLED HOLE TO CONFIRM THAT THE HOLE IS WITHIN THE SPECIFIED TOLERANCE
- 5. ON COMPLETION OF DRILLING, THE DRILLHOLE SHALL BE PLUGGED OR OTHERWISE PROTECTED TO PREVENT THE ENTRY OF FOREIGN MATERIAL.
- 6. EACH HOLE SHALL BE CLEANED OF ALL DRILL CUTTINGS, SLUDGE AND DEBRIS BY THE CONTRACTOR.
- 7. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A DRILLING RECORD OF EACH DRILLHOLE INCLUDING A BRIEF DESCRIPTION OF THE STRATA ENCOUNTERED AND THE APPROXIMATE PENETRATION RATE OF DRILLING NOT LATER THAN ONE DAY AFTER DRILLING THE HOLE AND PRIOR TO GROUTING. THE FORMAT AND CONTENT OF THE DRILLING RECORD SHALL BE APPROVED IN ADVANCE BY THE ENGINEER.
- 8. THE CONTRACTOR SHALL PROVIDE EQUIPMENT TO CHECK THE SLOPING ANGLE AND DIRECTION OF THE DRILLHOLES. BEFORE THE STEEL BAR IS INSERTED, THE CONTRACTOR SHALL IN THE PRESENCE OF THE ENGINEER CHECK THE NCLINATION, BEARING, CLEANLINESS AND LENGTH OF EACH DRILLHOLE. THE CONTRACTOR SHALL MAKE SURE THAT HIS METHOD OF DRILLING WILL NOT CAUSE COLLAPSE OF THE DRILLHOLE DURING DRILLING OPERATIONS AND/OR
- 9. DRILLHOLES SHALL BE CLEANED BY AIR FLUSH IMMEDIATELY PRIOR TO STEEL BARS INSERTION IF NECESSARY INSERTION OF STEEL BARS
- 1. THE INSERTION PROCEDURES SHALL BE TO THE APPROVAL OF THE ENGINEER AND SHALL CAUSE NO BENDING OF THE BAR SHANK OR DAMAGE TO THE THREAD ON THE PROJECTING END OF THE SOIL NAIL.
- 2. ALL ASSOCIATED COMPONENTS SHALL BE PROPERLY AND SECURELY ASSEMBLIED TO THE STEEL BARS IN ACCORDANCE WITH THE TYPICAL DETAILS BEFORE INSERTION.
- 3. BEFORE INSERTION, THE CONTRACTOR SHALL IN THE PRESENCE OF THE ENGINEER CHECK THE CONDITIONS OF EACH COMPONENT ASSEMBLIED AND THE STEEL BARS, AND REPLACE WITH THE SAME BATCH TO THE SATISFACTION OF THE ENGINEER IF NECESSARY

# GROUTING

- 1. THE SOIL NAIL SHALL BE GROUTED AS SOON AS PRACTICABLE AFTER INSERTION, BUT IN ANY EVENT WITHIN 48 HOURS OF INSTALLATION TO ENSURE THE STABILITY OF THE SOIL NAILED SLOPE. ALL NECESSARY PREPARATIONS FOR GROUTING OF NAILS SHALL BE MADE DURING THE INSTALLATION OF THE NAIL. THE METHODS OF ENSURING THAT THE SOIL NAIL IS GROUTED UP TO AND INCLUDING THE ANCHORAGE AND THAT THE AIR IS VENTED OUT OF THE DRILLHOLE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- 2. ALL SOIL NAILS SHALL BE GROUTED IN ACCORDANCE WITH THE FOLLOWING: a. ALL CEMENT USED IN THE GROUTING OF THE SOIL NAIL SHALL COMPLY WITH THE PROVISION OF BS 12.
- b. THE WATER CEMENT RATIO SHALL NOT EXCEED 0.45.
- c. BATCHING OF THE DRY MATERIALS SHALL BE BY WEIGHT. THE AMOUNT OF WATER USED SHALL BE MEASURED BY A CALIBRATED FLOWMETER OR
- MEASURING TANK. d. THE GROUT SHALL BE MIXED BY ADDING APPROXIMATELY TWO-THIRDS OF THE CEMENT TO THE WATER ADDING ANY ADMIXTURE AND ADDING THE REMAINING ONE-THIRD OF CEMENT. OTHER MIXING PROCEDURES SHALL
- NOT BE USED UNLESS PERMITTED BY THE ENGINEER. e. GROUT TO WHICH A RETARDING AGENT HAS NOT BEEN ADDED, AND WHICH IS NOT USED WITHIN 30 MINUTES OF MIXING, SHALL NOT BE USED FOR
- 3. NINE 100mm TEST CUBES SHALL BE MADE FROM EACH SAMPLE OF GROUT TAKEN AS STATED IN GS. EACH GROUP OF THREE TEST CUBES SHALL BE TESTED TO DETERMINE THE CRUSHING STRENGTH AT 3 DAYS. 7 DAYS AND 28 DAYS RESPECTIVELY. FOR PERMANENT SOIL NAILS, THE TEST CUBES FOR DETERMINING THE CRUSHING STRENGTH AT 3 DAYS AND 7 DAYS CAN BE OMITTED.
- 4. THE MINIMUM CRUSHING STRENGTH AT 28 DAYS SHALL BE 30MPa. THE ENGINEER MAY APPROVE OR ACCEPT CEMENT FOR GROUT ON THE RESULTS OF TESTS AT OTHER PERIODS LESS THAN 28 DAYS, BUT WILL DO SO ONLY AS LONG AS HE IS SATISFIED THAT THE RESULTS OF THE TESTS AT THE LESSER PERIOD ARE AN ADEQUATE GUIDE TO THE PROPERTIES AT THE LONGER PERIOD.

# PULL OUT TESTS FOR SOIL NAILS

- 1. THE LOADING APPARATUS SHALL BE SET UP IN SUCH A WAY THAT NO LOADING, OTHER THAN THE PULLOUT LOAD, ACTS ON THE STEEL BAR AT THE NAIL HEAD. THE REACTION OF PULL-OUT LOAD FROM THE LOADING APPARATUS SHALL ACT ON A SUFFICIENTLY SIZED RIGID BEARING PLATE PLACED AGAINST A TEMPORARAY CUT FACE AT NORMAL TO THE ALIGNMENT OF THE STEEL BAR TO ENSURE ADEQUATE LOAD SPREADING AND TO AVOID ECCENTRIC LOADING. MONITORING INSTRUMENTS SHALL BE CAREFULLY POSITIONED AND INDEPENDENTLY SUPPORTED TO RECORD THE EXTENSION OF THE SOIL NAIL STEEL BAR AND ANY MOVEMENT OF THE STEEL BEARING PLATE.
- 2. THE SOIL NAIL SHALL BE GROUTED OVER THE LENGTH AS SPECIFIED IN THE DRAWINGS OR AS DIRECTED BY THE ENGINEER. THE LENGTH TO BE GROUTED SHALL BE ISOLATED BY MEANS OF A PACKER THAT CAN PREVENT GROUT FROM LEAKING THROUGH TO THE FREE-LENGTH SECTION DURING GROUTING AND THAT CAN ENSURE THAT THE PROPOSED BONDED SECTION IS EFFECTIVELY GROUTED TO THE REQUIRED LENGTH AS SHOWN IN THE DRAWINGS. THE ENTIRE FREE LENGTH OF THE STEEL BAR SHALL BE PROPERLY DEBONDED OR CAPPED TO ENSURE THAT THE TEST LOAD CAN BE DIRECTLY TRANSFERRED TO THE BONDED ZONE IN CASE OF GROUT LEAK THROUGH THE PACKER.

- 3. THE PULLOUT TEST SHALL NOT BE CARRIED OUT UNTIL THE GROUT HAS REACHED A CUBE STRENGTH OF 21MPa.
- 4. THE TEST SOIL NAIL SHALL BE LOADED IN STAGES: FROM THE INITIAL LOAD (Ta) VIA TWO INTERMEDIATE TEST LOADS (TDL1 AND TDL2) TO
- THE MAXIMUM TEST LOAD
- 5. TDL1 SHALL BE THE ALLOWABLE PULLOUT RESISTANCE PROVIDED BY THE BOND LENGTH OF THE CEMENT GROUT SLEEVE OF THE TEST SOIL NAIL.
- 6. TDL2 SHALL BE TDL1 TIMES THE FACTOR OF SAFETY AGAINST PULLOUT FAILURE AT SOIL-GROUT INTERFACE (FSG).
- 7. THE MAXIMUM TEST LOAD SHALL BE 90% OF THE YIELD LOAD OF THE TEST SOIL-NAIL REINFORCEMENT (TP) UNLESS THE ULTIMATE GROUND-GROUT BOND LOAD (T ULT) IS REACHED DURING THE TEST. REINFORCEMENT SIZE LARGER THAN THAT OF THE WORKING SOIL NAIL SHOULD BE USED IN THE PULLOUT TEST, WHERE NECESSARY, TO ALLOW THE DEVELOPMENT OF T ULT PRIOR TO REACHING TP.
- 8. To SHALL BE TDL1 OF 5% OF TP, WHICHEVER IS SMAILLER.
- 9. DURING THE FIRST TWO LOADING CYCLES, TDL1 AND TDL2 SHALL BE MAINTAINED FOR 60 MINUTES FOR DEFORMATION MEASUREMENT. THE MEASUREMENT AT EACH OF THE CYCLES SHALL BE TAKEN AT TIME INTERVALS OF 1, 3, 6, 10, 20, 30, 40, 50 AND 60 MINUTES. IF THE TEST SOIL NAIL CAN SUSTAIN THE TEST LOAD SUBJECT TO THE ACCEPTANCE CRITERIA GIVEN BELOW, THE LOAD SHALL BE REDUCED TO TO AND THE RESIDUAL DEFORMATION SHALL BE RECORDED AFTER WHICH THE TEST SHALL PROCEED TO THE NEXT LOADING CYCLE.
- 10. IN THE LAST LOADING CYCLE, THE TEST LOAD SHALL BE INCREASED GRADUALLY FROM TO STRAIGTH TO THE MAXIMUM TEST LOAD AND THEN MAINTANINED FOR DEFORMATION MEASUREMENT. THE MEASUREMENT SHALL BE TAKEN AT TIME INTERVALS OF 1, 3, 6, 10, 20, 30, 40, 50 AND 60 MINUTES. IF THE TEST SOIL NAIL CAN SUSTAIN THE TEST LOAD SUBJECT TO THE ACCEPTANCE CRITERIA GIVEN BELOW, THE LOAD SHALL BE REDUCED TO TO AND THE RESIDUAL DEFORMATION SHALL BE RECORDED, AFTER WHICH THE TEST IS COMPLETED.
- 11. IF THE TEST SOIL NAIL FAILS TO SUSTAIN TDL1 TDL2 OF THE MAXIMUM TEST LOAD IN ANY CYCLE, THE TEST SHALL BE TERMINATED AND THE SOIL NAIL MOVEMENT AGAINST RESIDUAL LOAD WITH TIME SHALL BE RECORDED. THE MEASUREMENTS SHALL BE TAKEN AT TIME INTERVALS OF /1. 3. 6. 10 AND, EVERY 10 MINUTES THEREAFTER OVER A PERIOD FOR AT LEAST TWO HOURS. THE MEASUREMENTS SHALL BE TAKEN FOR A LONGER PERIOD WHERE CONSIDERED NECESSARY.
- 12. ACCEPTANCE CRITERIA: THE TEST SOIL NAIL IS CONSIDERED TO BE ABLE TO SUSTAIN THE TEST LOAD IF THE DIFFERENCE OF SOIL NAIL MOVEMENTS AT 6 MINUTES AND 60 MINUTES DOES NOT EXCEED 2mm OR 0.1% OF THE BOND LENGTH OF THE TEST SOIL NAIL.
- (SEE DETAIL 'A') EXISTING GROUND -500-SOIL NAIL SCHEDULE NAIL LENGTH NAIL ROW NO. NOS. OF NAILS (m) Α 4 2 B ~~~~ 4 PULLOUT TEST SCHEDULE NAIL LENGTH DRILLHOLE DIA. TEST NAIL NO. (m) (mm) 150 T2 4 150 2 4 Ω 7 Ľ Z И 1 4 4 STAGE 1 EXTENT OF -MOTACENT EX LALL (BASED ON PLAN) (BASED ON PLAN) F8790 G<sup>92.06</sup> Wall height 1.15m 4100 Wall height 1.07 (+89.90) 2000 RW2 (+89.70) Nater /



# APPENDIX D

Sewerage Impact and Risk Assessment Report

# Lot No. 764 in D.D.249 and Adjoining Government Land Wang Che, Sai Kung, New Territories

# Sewerage Impact and Risk Assessment (Version 2.0)

# September 2022



The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

CINOTECH CONSULTANTS LIMITED Room 1710, Technology Park 18 On Lai Street Shatin, NT, Hong Kong Tel: (852) 2151 2083 Fax: (852) 3107 1388 Email: info@cinotech.com.hk

# TABLE OF CONTENTS

1	INTRODUCTION1
1.1	Background1
2	THE PROJECT
2.1	The Project
2.2	THE APPLICATION SITE
3	SEWEAGE ESTIMATION AND PROPOSED SEWAGE HOLDING TANK CAPACITY 3
3.1	SEWEAGE ESTIMATION
3.2	PROPOSED SEWAGE HOLDING TANK CAPACITY
4	MEASURES TO SEWAGE LEAKAGE/OVERFLOW – DESIGN ASPECT 4
4.1	OVERVIEW
4.2	SEWAGE PIPELINES
4.3	The Underground Room
4.4	THE SEWAGE HOLDING TANK
4.5	SEWAGE LEVEL AND LEAKAGE MONITORING SYSTEM 5
4.6	PREVENTION OF WATER INGRESS TO THE ROOM AND SEWAGE OVERFLOW TO OUTDOOR AREA 7
5	MEASURES TO SEWAGE LEAKAGE/OVERFLOW – MANAGEMENT ASPECT 8
5.1	OVERVIEW
5.2	OPERATION OF THE SEWAGE LEVEL AND LEAKAGE MONITORING SYSTEM
5.3	REGULAR/NON-REGULAR SEWAGE REMOVAL AND DESLUDGING
5.4	REGULAR INSPECTION AND MAINTENANCE10
5.5	EMERGENCY RESPONSE PLAN11
5.6	CONTINGENCY PLAN FOR OCCUPANTS
6	MINIMIZATION OF POTENTIAL ENVIRONMENT IMPACT
6.1	INTRODUCTION
6.2	CONSTRUCTION PHASE
6.3	OPERATION PHASE
7	WATER POLLUTION RISK ASSESSMENT16
8	CONCLUSION

# LIST OF TABLES

Table 3-1	Sewage Flow from the Site	3
Table 5-1	List of Warning Related to the Water Sensors	9

# **LIST OF FIGURES**

Figure 1-1	Site Location Plan
Figure 1-2	Outline Zoning Plan
Figure 2-1	The Application Site
Figure 4-1	Proposed Design of the Sewage Holding Tank System

# LIST OF APPENDICES

Appendix 2-1	Site Formation Plan
Appendix 6-1	Conditions for Working within Gathering Ground
Appendix 6-2	Conditions for Working in the Vicinity of Waterworks Installation
Appendix 7-1	Potential Risk, Precautionary Measures and Risk Assessment

# **1 INTRODUCTION**

## 1.1 Background

- 1.1.1 The registered owner (the Applicant) of Lot No. 764 in D.D. 249 (the Subject Lot) submitted a Section 12A Amendment of Plan Application to Town Planning Board (TPB) to allow the proposed Small House and site formation works at the Subject Lot and adjoining Government land in Wan Che, Sai Kung (the Application Site).
- 1.1.2 The Site currently falls within an area zoned mainly "Conservation Area" ("CA") and partly "Village Type Development" ("V") under the Approved Ho Chung Outline Zoning Plan No. S/SK-HC/11(the OZP). The Applicant proposes to rezone the Site from mainly "CA" and partly "V" to wholly "V" in order to allow him to build a Small House and carry out site formation works on the Site. The Site is about 123.25 square metres and accessible via an unnamed village road branched off from Ho Chung Road. It is located within the established village environs of a recognised village, namely Wang Che Village of Sai Kung.
- 1.1.3 The location of the Application Site is shown in Figure 1-1, and the zoning of the Application Site is illustrated in Figure 1-2.
- 1.1.4 Cinotech Consultants Limited was commissioned by the Applicant to conduct a Sewerage Impact and Risk Assessment for the planning application submission.

# 2 THE PROJECT

# 2.1 The Project

- 2.1.1 The Project involves construction of a village house in the private Lot No. 764 in D.D. 249; land formation works and drainage channels laying work in the adjoining Government land; as well as slope stabilization works and drainage channels laying works for the slope in the south of the Lot No. 764 in D.D. 249. The corresponding work areas are marked in Figure 2-1. A Site Formation Plan is provided in Appendix 2-1.
- 2.1.2 A typical three stories village house will be adopted with some design modification to accommodate a proposed underground sewage holding tank system, which will be described in the later Chapters. It should be noted that the proposed village house, including the proposed underground sewage holding tank, will be confined within the Lot No. 764 in D.D. 249 and not occupying any government land.

# 2.2 The Application Site

- 2.2.1 The Application Site is located in a rural area including the private lot No. 764 in D.D. 249 and the adjoining Government land as shown in **Figure 2-1**. The Application Site is located in rural area but not covered by "V" zone. The developments in the vicinity are mostly village houses (Wang Che Village).
- 2.2.2 The Application Site is currently vacant thus no demolition works are required. It should be noted that the elevation of the western portion of lot No. 764 in D.D. 249 (~92mPD) is higher than that of the footpaths in east (~90mPD) and in south(~90-91mPD). After the site formation (Appendix 2-1), the elevation of the whole lot No. 764 in D.D. 249 will be ~92mPD. During operation of the proposed village house, only the adjoining government land in the west is having similar elevation (~92mPD) of No. 764 in D.D. 249.
- 2.2.3 The Application Site falls within water gathering ground (WGG). According to Section 5.3.13 Water Gathering Grounds, Chapter 9 of Hong Kong Planning Standard and Guidelines, sewage should be discharged into public sewers or treated by sewage treatment plant. Use of septic tank and soakaway systems should be avoided. However, the Application Site and its vicinity are not served by the public sewer. Although the existing village houses adopt septic tank and soakaway systems, the Applicant agrees to adopt a more environmentally friendly method to handle sewage instead of septic tank to protect water quality of the WGG.
- 2.2.4 For a single house development for 2 persons only (i.e.: the Applicant and his wife), installation of an onsite sewage treatment plant is not cost effective. A reasonable solution for this small-scale development is to temporarily store the sewage underground and arrange a registered contractor to remove the sewage for offsite treatment regularly. The following chapters detail the proposed sewage holding tank and maintenance works to be implemented.
- 2.2.5 When public sewer is available near the Site in the future, the applicant shall connect the whole of the foul/sewage system to the public sewers.

# **3** SEWEAGE ESTIMATION AND PROPOSED SEWAGE HOLDING TANK CAPACITY

## 3.1 SEWEAGE ESTIMATION

- 3.1.1 The proposed village house is a 3-storey village type house. According to the Applicant, the designed population is 2 persons. To cater for the potential expansion of the family, it is assumed that each floor will have two family members, giving a total of 6 persons.
- 3.1.2 According to Table T-1 of Environmental Protection Department (EPD)'s Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning (Version 1.0), the planned unit flow factor for planned Modern Village is 0.270 m<sup>3</sup>/day. For a 6 persons village house, the daily discharge shall be ~1.62 m<sup>3</sup> and the weekly discharge shall be ~11.34m<sup>3</sup>.

## **3.2 PROPOSED SEWAGE HOLDING TANK CAPACITY**

- 3.2.1 As there is no nearby public sewer and the site falls within WGG, an underground holding tank is proposed to store the sewage generated from the proposed development. The underground holding tank will be placed in an underground room beneath the proposed house.
- 3.2.2 The holding tank would be cleared weekly by a registered contractor by tankering away all sewage and sludge for treatment outside the WGG. No discharge of sewage into adjoining land, storm water drain, channel, stream or river course will be allowed. Therefore, the holding tank should have sufficient capacity to store the sewage generated in 7 days as minimum.
- 3.2.3 The volume of the holding tank is proposed to be 34 m<sup>3</sup>, which is sufficient for storing two weeks of generated sewage, with considering a safety factor of 1.5 to account for variation of water consumption and water leakage accidents. The estimated sewage discharge from the proposed development is summarised in **Table 3-1**.

Туре	Unit Flow Factors <sup>[1]</sup> (m <sup>3</sup> /day/per son)	No. of Residents	Weekly Sewage Discharge (m <sup>3</sup> )	Safety Factor	Weekly Sewage Volume (m <sup>3</sup> )	Proposed Holding Tank Volume (m <sup>3</sup> )
Residential	0.27	6	11.34	1.5	17	34

Table 3-1Sewage Flow from the Site

[1] EPD's Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning Version 1.0 defining unit flow factors.

# 4 MEASURES TO SEWAGE LEAKAGE/OVERFLOW – DESIGN ASPECT

## 4.1 Overview

- 4.1.1 To safeguard the underground water quality, a number of measures are considered to prevent potential sewage leakage through careful design and management measures.
- 4.1.2 Various design considerations have been incorporated into the preliminary design of the sewage holding tank system not only to minimise the potential risk of sewage leakage or overflow but also to provide necessary equipment for a smooth on-going operation.
- 4.1.3 The measures include: material selection, pipe alignment, provision of leakage/level sensor & warning system, as well as provision of a bund wall. The details of each consideration are detailed in the following paragraphs. A tentative preliminary sewage holding tank design is illustrated in **Figure 4-1**.

#### 4.2 Sewage Pipelines

- 4.2.1 Both pipeline material and alignment should be carefully designed to minimise the risk of potential leakage.
- 4.2.2 The sewer pipes shall be made of cast iron or other approved material with sealed joints and hatched boxes.
- 4.2.3 All sewer pipes shall be located within building footprint to ensure that any potential leakage will be collected by the floor drain(s) and reach the underground holding tank.

# 4.3 The Underground Room

- 4.3.1 The underground room will likely be partially below the water table, therefore, providing a waterproof room is essential not only for ensuring the potential leaked sewage from the holding tanks will not enter the underground water system but also prevent the underground room flooded by the underground water.
- 4.3.2 A practical way is to apply non-seeping material and/or membrane to the floor and walls of the underground room during construction. Leakage test shall be performed upon construction to confirm the integrity of the wall and floor before placing the holding tank into the room.
- 4.3.3 When leakage has been detected during testing or during operation phase, the leakage shall be rectified as soon as possible according to the maintenance manual.
- 4.3.4 A pair of water sensors shall be provided at the lowest points of the room for the detection of water. If water is detected in the room, warning signal will be triggered to notify the user for inspection. An associated water pump shall also be provided to pump the water in the room to the tank.
- 4.3.5 The room shall provide sufficient space (at least 1m width) for access door/platform and maintenance work. The room shall also have sufficient volume for buffering ~1 week volume of sewage (17m<sup>3</sup>) in case of leakage.

## 4.4 The Sewage Holding Tank

- 4.4.1 The sewage holding tank shall be a double-layered polypropylene tank. The double layer design can prevent any crack propagate to another layer thus the chance of leakage will be greatly reduced.
- 4.4.2 The double layer design can also provide longer time between noticeable damage occurred and sewage leakage, thus more time is available for arranging temporary repair or replacement.
- 4.4.3 Level sensors shall be mounted at various levels for monitoring the sewage level (to be explained in **Section 4.5**).
- 4.4.4 Access door shall be provided for inspection or desludging.
- 4.4.5 The vent pipe shall be equipped with rain cap to prevent ingress of rainwater into the tank.
- 4.4.6 Leakage test shall be performed upon construction to confirm the integrity of the sewage holding tank before operation.
- 4.4.7 The feasibility of providing dual tank system has been explored in early state but found to be not practical for this scale of project (a single village house). The extra complexity of the system will likely add more risk for the operation of the sewage holding system.

#### 4.5 Sewage Level and Leakage Monitoring System

- 4.5.1 To facilitate display of the signal from the sensors, a control panel with programmable logic controller (PLC), display screen, indicator light bulbs, and audible and visual alarm shall be provided. Pairs of water sensors shall be provided at the lowest points of the room as well as various level (25%, 50%, 70% and 85% full) in the sewage holding tank.
- 4.5.2 The control panel shall be able to determine any fault signal and broken sensor by comparing the status of sensor signal, or at least able to provide warning signal to inform the occupants for arranging an inspection. For example, when both of the 50% level sensors have been triggered, if one or both of the 25% level sensor is not triggered, it is likely that at least one of the sensors is not working properly thus inspection and maintenance shall be scheduled.
- 4.5.3 The details of the hardware of the Sewage Level and Leakage Monitoring System will be present in following paragraphs while the operation of the monitoring system will be presented in the Management Sections.

#### Programmable Logic Controller (PLC)

- 4.5.4 A PLC system shall be provided for flexible system where the program can be updated as suited. The PLC shall have the ability to provide the following functions: -
  - Identify potential issue from the sensors signal;
  - Control the alarm, indicator lights, & water pump;
  - Self-error checking function (for faulty sensor);
  - Auto power-on after recovery from power-outage;
  - Allow replacement of sensor/alarm without system shutdown; &
  - Any modification to the program shall be password or key protected.

# Display Screen

- 4.5.5 The display screen shall provide interactive interface for accessing the followings: -
  - Show the status of each physical light indicator (for trouble-shooting),
  - Show the type and location of on-going warning, and provide instruction to the occupants and maintenance staff,
  - Provide interface to turn off warning alarm (password required),
  - Provide interface to turn off the system (password required),
  - Provide interface to unlock the system for overwriting the PLC program (password required).
- 4.5.6 In case touch screen has been adopted as the major input method, a separated physical power off switch for the monitoring system shall be provided for avoiding unintentional system shutdown.
- 4.5.7 Emergency system shutdown switch near the control panel shall be protected by physical key to avoid unauthorised showdown. Otherwise, system shutdown shall be conducted using the main circuit breaker of the house.

# Light Indicator

- 4.5.8 Individual physical light indicator shall be provided to indicate the following: -
  - Power on/off status;
  - Status of each water/sewage sensor (on/off);
  - Warning Indicator (for inspection);
  - Warning Indicator (for sewage removal); &
  - Warning Indicator (for emergency).
- 4.5.9 The individual physical light indicator can provide a quick way for the occupant to identify the status of the sewage holding system for quick action.

# Audible and Visual Alarm

4.5.10 Audible and visual alarm shall be installed in both the living area and underground room for informing the occupants and inspector. Additional battery powered visual alarm, similar to emergency light, shall be provided to indicate the breakdown/power-off of the monitoring system.

# Water/ Sewage Level Sensors

- 4.5.11 A pair of water level sensors or sewage level sensors shall be provided at each sensing location. The pair of sensors is planned to operate concurrently to prevent the chance of faulty signal. For example, if one of the sensors in the pair has been triggered, the system will consider the water level has reached that location as the sensor elevation could be slightly different. If the pair of sensors are out-of-sync for an extended time, warning signal shall be provided on the control panel to inform the occupants.
- 4.5.12 A third standby sensor at each sensing location is not recommended as it will induce extra complexity to the system which will increase the chance of system bugs. Instead, prompt

replacement of faulty sensor without system shutting down is the key idea to provide longterm ono-going monitoring system. Therefore, selection of sensors mounting shall make easy sensor replacement a priority as it can enable quick replacement of sensors after the sewage from the tank has been removed without shutting down the whole system.

#### 4.6 Prevention of Water Ingress to the Room and Sewage Overflow to Outdoor Area

- 4.6.1 The ground elevation of the house is higher than that of the access road in east and south; and only the adjoining government land in the west is at the same elevation. Drainage channels surround the lot of the proposed house in all three available directions. The landscape and drainage channels after the site formation are shown in **Appendix 2-1**.
- 4.6.2 With sufficient drainage system, it is expected that no accumulation of large amount of surface runoff near the house during rainstorm is anticipated. Therefore, providing the access door/opening of the underground room either within building or surrounded by bunded wall with cover are sufficient to prevent water ingress to the underground room. For conservative design, the access door/opening of the underground room shall not be placed near the west boundary of the lot.
- 4.6.3 For small amount of ingress water, a pump will be provided at the lowest point in the room to pump to the water into the sewage holding tank.
- 4.6.4 With the same principle, locating the sewage holding tank indoor with paved waterproof ground and walls, with sufficient buffer volume, well-designed access door, and/or bunded wall with cover, any leakage from the tank or during desludging will not flow to outdoor area.

# 5 MEASURES TO SEWAGE LEAKAGE/OVERFLOW – MANAGEMENT ASPECT

## 5.1 Overview

- 5.1.1 Although the necessary hardware will be provided, a good and reasonable on-going operation and maintenance strategy is essential for a sustainable system.
- 5.1.2 For an effective and systematic management, an Operation and Maintenance Manual (O&M Manual) shall be prepared during the detailed design stage of the sewage holding system. The Standard Operation Procedure (SOP) for various situations, including maintenance procedure, shall also be included in the O&M Manual.
- 5.1.3 As the occupants are not expected to possess technical knowledge nor fully understand the O&M Manual, the sewage holding system shall be configured to display all necessary information for the occupants such as "arranging an additional sewage removal service" or "stop producing sewage". In addition, a contingency plan shall be prepared during the detailed design stage for providing instruction to the occupants when system breakdowns.
- 5.1.4 The O&M Manual shall include the followings area: -
  - Operation of the Sewage Level and Leakage Monitoring System;
  - Regular/Non-regular Sewage Removal;
  - Regular Inspection and Maintenance; and
  - Emergency Response Plan
- 5.1.5 The key items of each area of are described in the following paragraphs.

#### 5.2 Operation of the Sewage Level and Leakage Monitoring System

5.2.1 As mentioned in Section 4.5.1, the Sewage Level and Leakage Monitoring System shall contain a control panel with programmable logic controller (PLC), display screen, indicator light bulbs, and audible and visual alarm as well as are pairs of water sensors provided at the lowest points of the room as well as various level (25%, 50%, 70% and 85% full) in the sewage holding tank.

#### Logic of the Sensor System & Self-error Detection

- 5.2.2 There are five pairs of water sensors in the system. One pair is located at the lowest location of the underground room and 4 pairs in the sewage holding tank.
- 5.2.3 For minimising the risk of leakage/overflow, both sensors in the pair will be in duty concurrently. If either one of the pair is triggered, the system will consider that there is water in that location.
- 5.2.4 When the pair of sensors is out of sync for an extended period of time, say 24 hours, it is likely that at least one sensor or its transmission is not working properly. Warning signal including the ID or location of the potential faulty sensors shall be displayed on the screen to inform the occupants and maintenance staff. Similarly, when there is contradiction in the sensor signals, e.g.: the sensors at higher level have been triggered before the sensors in lower level, a warning signal including the ID or location of the potential faulty sensors shall be displayed on the screen to inform the occupants and maintenance staff.

5.2.5 Besides the warning signals for self-error detection, there are four warning signals for normal operation. One of the warnings will be triggered by the water sensor at the lowest location of the room. The other warning will be triggered by various sewage levels in the sewage storage tank as listed in **Table 5-1**. It should be noted that the required action and warning message shall be displayed on the screen of the control panel to remind the occupants until the warning signal wears off. The warning signal will only be worn off by reducing the sewage level below 25% mark.

Warning Signal	Triggered Condition	Worn Off Condition	Action by the System
Potential Leakage	otential Leakage Water is detected in the Room Room		Trigger warning signal
Tank 50% Full	Sewage is detected at 50% location		Trigger warning signal and message
Tank 70% Full	Sewage is detected at 70% location	Sewage is not detected at 25%, 50%, 70% & 85%	Trigger warning signal and message Trigger Alarm (can be turned off by the occupant) Replace the 50% Full warning
Tank 85% Full	Sewage is detected at 85% location	locations	Trigger warning signal and message Trigger Alarm (cannot be turned off by occupant) Replace the 50% & 70% Full warning

Table 5-1	List of Warning Related to the Water Sensors
1 abic 5-1	List of warning Related to the water Schools

Note: Self-error detection warning not included.

5.2.6 When there is a power outage and/or system breakdown, i.e.: no signal output from the monitoring system, the battery power visual alarm, as stated in **Section 4.5.10**, shall be switched on automatically to inform the occupants for arranging emergency checking and maintenance.

# 5.3 Regular/Non-regular Sewage Removal and Desludging

- 5.3.1 As shown in **Table 3-1**, the sewage holding tank is designed to hold 2 weeks volume of sewage under reasonable worst scenario (6 persons instead of 2 persons). During normal operation, the weekly sewage should occupy around 50% of the tank or less. The occupants shall arrange regular weekly sewage removal with a contractor. The sewage removal shall be performed by connecting the sewage pumping pipe from sewage suction truck to the connector of the pumpout pipe of the sewage holding tank to minimum potential odour release during sewage pumping. The occupants shall keep the sewage removal records for inspection in future.
- 5.3.2 Normally, the sludge at the bottom of the sewage holding tank shall be removed together with the stored sewage during sewage removal process. However, there is still some case that some sludge will stay at bottom/corner of the tank, reducing the effective capacity of the sewage holding tank. When the sludge accumulated to certain amount, desludging shall be performed by placing the sewage pumping pipe from the sewage suction truck directly into the bottom/corner of the sewage holding tank to pump out the sludge. An access of the holding tank has been prepared for this purpose. It should be noted that desludging shall be conducted only when necessary, i.e.: when suggested by the sewage removal contractor or

instructed by the checker. The occupants shall keep the desludging records for inspection in future.

- 5.3.3 Besides the regular weekly sewage removal, the occupants shall conduct the following actions when the warning signal and message have been triggered: -
  - When the sewage holding tank reaches 50% full, warning signal (light indicator only) will be triggered and the occupants shall arrange an early sewage removal service for that week.
  - When the sewage holding tank reach 70% full, warning signal (light indicator, as well as the audible and visual alarms) will be triggered and the occupants shall arrange an addition sewage removal service as soon as possible. The audible and visual alarms (but not the warning indicator) can be switched off by occupants in this case. However, as this water level is not expected under normal circumstance, the occupant is advised to check the water fixture for potential leakage.
  - When the sewage holding tank reach 85% full, warning signal (light indicator, as well as the audible and visual alarms) will be triggered and the occupants shall arrange an addition sewage removal service as soon as possible. The audible and visual alarms **<u>cannot</u>** be switched off by occupants in this case. As the occupants will be the first victims from the smell and hygiene issue due to potential sewage overflowing from the tank, the occupants shall stop producing any sewage until the sewage in the tank has been removed.
- 5.3.4 It should be noted that the required action and warning message shall be displayed on the screen of the control panel to remind the occupants until the warning signal wears off. The warning signal shall be worn off after the sewage level is below 25% mark.

# 5.4 Regular Inspection and Maintenance

5.4.1 Regular inspection and maintenance are the key items in the longevity of the sewage holding system. Minor issues in the system could be identified and resolved before the issue become a disaster that requires an emergency response. The occupants are reminded to strictly fulfil the inspection and maintenance requirements.

#### Routine Inspection by Independent Checker

- 5.4.2 Monthly inspection by an independent checker is required to ensure the integrity of the holding tank. The inspection results will be prepared, for Water Supplies Department (WSD) and Planning Department (PlanD) checking, at quarterly interval.
- 5.4.3 During the inspection, the priority is to identify any leakage/spillage from the sewage holding tank and/or walls of the underground room. Depending on the degree of leakage/spillage, the checker shall decide the necessity of declaring an emergency according to the O&M Manual.
- 5.4.4 The independent checker shall also check the warning records, identify the potential sources of warnings, and schedule the next maintenance to address the potential issues according to the O&M Manual.

Scheduled Maintenance

- 5.4.5 All of the issues identified during the inspection shall be addressed in a timely manner.
- 5.4.6 The maintenance usually involves replacement of parts as well as seal-up of the crack on the sewage storage tank or walls. As the PLC will be designed for allowing replacement of sensor/alarm without system shutdown, most of the maintenance works, including replacement of sensors and alarm can be conducted once the sewage has been removed. No system shutdown shall be required.
- 5.4.7 There are some maintenance works that require system shutdown, such as replacement of a completely broken sewage storage tank or replacement of the PLC unit. In such case, the occupants shall not generate any sewage during the maintenance period. Replacement of PLC unit could be completed in a few hours, but replacement of the sewage holding tank will require days or weeks. The occupants shall temporarily live in another house or hotel until the maintenance is completed.
- 5.4.8 The occupants shall be reminded to strictly fulfil the inspection and maintenance requirements to prevent/identify any potential leakage and prevent the system from being beyond repair in early lift cycle.

## 5.5 Emergency Response Plan

- 5.5.1 Emergency Response Plan shall be prepared during the detailed design stage as part of the O&M Manual for handling accidental leakage/spillage and/or system breakdown.
- 5.5.2 The following items shall be included in the Emergency Response Plan: -
  - Stop generating sewage, i.e.: stop using the toilet and the kitchen, to prevent generation of extra sewage, until the leakage/spillage has been resolved;
  - Notify WSD and PlanD within 24 hours;
  - Call a licensed contractor to tanker away the sewage and clean up the underground room;
  - Ask the licensed contractor to conduct necessary repair/replacement to rectify the leakage/spillage; and
  - Ask the licensed contractor to investigate the cause of leakage/spillage and make change to the system (including both hardware and management changes) when necessary to prevent future leakage.

#### 5.6 Contingency Plan for Occupants

- 5.6.1 As stated in **Section 5.1.3**, a contingency plan shall be prepared for providing instruction to the occupants when system breakdown.
- 5.6.2 As it is also possible that the display of the monitoring system malfunctions, the corresponding actions for each warning, as described in **Sections 5.2 & 5.3**, when the system is operating normally shall also be included.

- 5.6.3 The contingency plan shall contain the followings: -
  - A list of contact person (e.g. inspector, licensed contractor, WSD/PlanD, etc...);
  - Corresponding actions for each warning when the system is operating normally;
  - Corresponding actions for system breakdown; &
  - Corresponding actions for significant leakage, i.e.: emergency situations.

# 6 MINIMIZATION OF POTENTIAL ENVIRONMENT IMPACT

## 6.1 Introduction

- 6.1.1 Other than the sewage leakage during the operation of the sewage holding system, there are other potential environment issues during construction and operation of the proposed house.
- 6.1.2 As the Application Site is location in WGG, the water quality impact related item, such as surface run-off during both construction and operation shall be the priority to be addressed. In addition, the potential odour issue arising from the operation of the sewage holding tank and household activities shall also be discussed.

## 6.2 Construction Phase

- 6.2.1 Construction site runoff should be prevented or minimized in accordance with the guidelines stipulated in the ProPECC PN 1/94 published by the EPD, which includes but not limited to the followings:
  - Provide sufficient chemical toilets with regular maintenance by licensed collector where necessary.
  - Channels, earth bunds or sand bag barriers should be provided on site to direct stormwater to sand/silt removal facilities. Where necessary, perimeter channels should be provided at the Site boundary to intercept storm-runoff from outside the site. These shall be implemented in advance of construction work.
  - Sand/silt removal facilities such as sand traps, silt traps and sediment basins shall be provided to remove sand/silt particles from runoff to meet the requirements of the Technical Memorandum standard under the Water Protection Control Ordinance (WPCO). These facilities shall be properly and regularly maintained.
  - Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation in soil could not be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporarily exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest/edge of excavation) to prevent storm runoff from washing across exposed soil surfaces.
  - Trench digging work should be minimized and the trenches should be backfilled in short sections during wet season.
  - Rainwater pumped out from trenches/foundation excavations, groundwater pumped out from wells, as well as groundwater seepage pumped out of tunnels/caverns under construction should be discharged into storm drains via silt removal facilities.
  - Water used in ground boring and drilling should be recirculated as far as practicable after sedimentation. The wastewater should be discharged into storm drains via silt removal facilities.
  - Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.

- The Contractor should implement the Precautions/Actions relating to rainstorms as summarized in Appendix A2 of ProPECC PN 1/94.
- Open stockpiles of materials on site shall be covered with tarpaulin or similar fabric during rainstorms.
- Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.
- Wastewater from building construction works like cleaning of works, concreting and similar activities shall not be discharged into the storm drains. The wastewater shall be treated by the silt removal facilities to remove settleable solids and pH adjustment before discharging into foul sewers.
- Silty runoff collected shall be treated by sedimentation up to the standard stipulated in the water discharge license issued by EPD. Only that effluent can be discharged into the designated discharge point to safeguard the water quality in the receiving water. If discharge to stormwater system is not permitted under the WPCO, the treated water is proposed to be removed from the Site by tankers. The effluent will then be delivered to public sewage treatment plant.
- 6.2.2 The follow mitigation measures for potential leaked oil and chemical should be applied to both construction phase:
  - Oil interceptors and/or grease trap shall be provided in the drainage system. They shall be emptied regularly to prevent the release of oil and grease into water drainage system after accidental spillages. Interceptors shall have a bypass to prevent flushing during periods of heavy rain.
  - All chemicals shall be stored in suitable containers which are sealable, robust and in good condition.
  - Chemical storage areas shall have impermeable floor and bund-wall. The bund shall at least have a capacity of 110% of the volume of the largest container or 20% by volume of the chemical stored in the area, whichever is largest. All liquid collected within the bund shall be treated as chemical waste. Where possible, storage areas should be sheltered to prevent rainfall entering.
- 6.2.3 Besides the aforementioned measures, the construction shall also fulfill WSD's Conditions for Working within Gathering Ground (**Appendix 6-1**), and Conditions for Working in the Vicinity of Waterworks Installation (**Appendix 6-2**).
- 6.2.4 The above mitigation measures will be incorporated into the tender of this proposed development to ensure that the project team will minimize the potential water quality impact.

# 6.3 **Operation Phase**

- 6.3.1 During operation phase, the major potential environment impact arising from the proposed development are:-
  - Potential leakage of household wastewater to the outdoor area;
  - Potential leakage of household chemical to the outdoor area;
  - Potential odour impact from the exhaust vent of the sewage holding tank; &
  - Potential odour impact during pumping of the sewage/sludge.

6.3.2 It should be noted that the Lot No. 764 in D.D. 249 will be fully occupied by the proposed house, while the outdoor area is government land. Therefore, no outdoor activity, including gardening and parking, is anticipated during operation of the house at the Application Site.

#### Leakage of household wastewater to the outdoor area

6.3.3 The outdoor area of the proposed house is within WGG, no household waste water shall be disposed or leaked to the outdoor area. As stated in **Section 4.6.2**, no accumulation of large amount of surface runoff near the proposed house during rainstorm is anticipated. With door(s) protected by bunded wall, all indoor wastewater on the floor shall be blocked and eventually collected by the sewage storage tank via floor drains. Similarly, the wash water and other spilled water from village housing activities will also collected by the sewage storage tank via floor drains. The occupants should be reminded to never dispose any wastewater outdoor, including the roof of the building which is connected to the drainage system.

#### Leakage of household chemical to the outdoor area

- 6.3.4 Household chemical such as detergent and cleaning agent are expected to be stored and used within the proposed house. The residual chemical is expected to be directly discharged to the sewage system or collected by sewage collection tank via the floor drainage. The occupants should be reminded to never store and use any chemical outdoor, including the roof of the building which is connected to the drainage system.
- 6.3.5 <u>Potential odour impact from the exhaust vent of the sewage holding tank</u>
- 6.3.6 The sewage holding system consists of a vent pipe (**Figure 4-1**) that has the exhaust located above the roof. The vent pipe will be erected high above the roof of the house, allowing the exhaust to well disperse to the open air instead of concentrating at the ground level.

#### Potential odour impact from during pumping of the sewage/sludge

- 6.3.7 As stated in **Section 5.3.1**, the pump out pipe will extend near the bottom of the holding tank to above the ground (**Figure 4-1** refers). As the bottom opening of the pipe is submerged in the sewage, this prevents release of odourous gas from the pipe when it is opened for sewage pumping. The pump out pipe section above ground will have quick connect coupling to the sewage suction truck of the licensed contractor. The sewage holding tank shall not be exposed during normal sewage removal process. This minimizes odour release to the air during sewage pumping.
- 6.3.8 During desludging, the sewage pumping pipe from sewage suction truck will be placed directly into the bottom/corner of the sewage holding tank to pump out the sludge via the access. As the frequency and duration should be limited, no odour impact is anticipated.

#### Others

6.3.9 Considering the scale and type of the proposed development, i.e.: a single village house, a waste management plan is unnecessary. Instead, the occupants are reminded to always dispose the domestic wastes and/or pet wastes to the nearest waste collection point.

# 7 WATER POLLUTION RISK ASSESSMENT

- 7.1.1 This chapter list out the potential water pollutant risk and compare the likelihood and consequence of the with and with the measures proposed in **Chapters 4, 5 & 6**.
- 7.1.2 The major items of water pollutant risks arising from the proposed development are: -
  - Leakage from Indoor to Outdoor Area
  - Leakage from Sewage Pipelines to Outdoor Area
  - Leakage from the Underground Room to Groundwater
  - Leakage from the Underground Room to Outdoor Aera
  - Leakage from Sewage Holding Tank to the Underground Room caused by:
    - Flooding of Sewage Holding Tank due to Water Ingress under Heavy Rain
    - Overflowing of Sewage Holding Tank
    - o Crack, External Damage or Deterioration
    - o System Breakdown
  - Water Pollution Arising from The Construction Activities
- 7.1.3 The likelihood and consequence of the aforementioned items with the corresponding mitigation measures and monitoring are listed in **Appendix 7-1**.
- 7.1.4 Without the proposed mitigations measures, the likelihood and consequence of those items are ranging from low to high level, meaning there is a high chance to significantly pollute the WGG area. With the proposed mitigation, the likelihood and consequence of those items are expected to become low and/or non-existence level.
- 7.1.5 It should be noted that water pollutant to the WGG only occurs when multiple of the aforementioned items occurs. For example, pipeline leakage can only reach indoor area due to the proposed measures, and the leaked sewage from indoor area will only reach the outdoor area under extreme condition (flooding/broken bund wall). Similar situations are for the sewage in the holding tank to reach groundwater or outdoor area. A complete system breakdown may render the monitoring system powerless but the physical implementation such as buffer volume and waterproof wall shall still works properly when regular inspection and maintenance are provided. Therefore, the risk of polluting the WGG arising from the proposed house is extremely small.

# 8 CONCLUSION

- 8.1.1 The registered owner of Lot No. 764 in D.D. 249 (the Subject Lot) submitted a Section 12A Amendment of Plan Application to Town Planning Board to allow the proposed Small House and site formation works at the Subject Lot and adjoining Government land in Wan Che, Sai Kung.
- 8.1.2 The Application Site falls within water gathering ground thus no use of septic tank with soakaway systems, as well as discharge of effluent or foul water into adjoining land, storm water drain, channel, stream or river course is allowed.
- 8.1.3 As the Application Site and its vicinity are not served by the public sewer, an underground sewage holding system with capacity of about 34m<sup>3</sup> (2 weeks of sewage under reasonably worst situation). Monitoring system as well as high standard of leakage prevention mechanism have been proposed to protect water quality of the WGG.
- 8.1.4 An Operation and Maintenance Manual shall be prepared during the detailed design stage of the sewage holding system. The Standard Operation Procedure for various situations, including maintenance procedure and emergency response plan, shall also be included in the Manual. In addition, a contingency plan shall be prepared during the detailed design stage for providing instruction to the occupants when system breakdown.
- 8.1.5 The sewage holding system shall be designed in the way that everything the occupants need to know would be displayed on the screen of the control panel, or in the contingency plan for occupants when the screen and/or the system is down.
- 8.1.6 The sewage holding tank would be cleared weekly by registered contractor by tankering away all sewage and sludge for treatment outside the WGG. Monthly inspection would be conducted by independent checker.
- 8.1.7 With the proposed sewage holding system, as well as other measures implemented properly, no sewerage impact, water quality impact and odour impact on the surrounding residents and waterbodies is anticipated. The risk of the potential leaked pollution to reach the outside of the proposed house is extremely small.
FIGURES



•

_		$\langle \ \rangle$		$\backslash / \backslash$
		$\langle \ \rangle$		
_		$\overline{\ }$	$\frown$	$\bigcirc$
_				
Г	Drainat S	ita Da	undon	$\frown$
L	Project S	ILE DO	unuary	$\sim$
_		_		
L	Land Lot	Boun	dary	
				$\sim$
	Applicatio	on Site	e	$\sim$
/		$\leq$		$\frown$
		$\sim$	$\parallel / $	// /
			/////	$\setminus$
/	$\langle \ \rangle$			>  ) ,
		$\sim$		$\setminus \setminus \setminus$
			$\langle / / / \rangle$	$\langle / \rangle$
/	$\sim$		$\langle \rangle \rangle \rangle$	$\langle \rangle$
	$\frown$		$\nearrow$	$\langle \rangle \rangle$
	_		/)  /	$\setminus$ $\setminus$
				$\setminus$ $\setminus$
	$\$	7/	$    \setminus \langle$	
	$\langle \rangle \sim \rangle$		$   \langle \rangle$	
			$   \langle \rangle$	$\langle \rangle$
			$  \langle \rangle$	
7 /	$> \langle \rangle >   \rangle      $			
$\square$		$^{\prime}$		
		//		
	$ \langle \langle \rangle \rangle \langle \rangle \langle \rangle \langle \rangle \rangle \langle \rangle \langle \rangle \langle \rangle \rangle \langle \rangle$	$ \backslash $		_ /
2		$\sim$		
		$\langle $		//
/		$\langle \rangle$		
		$\searrow$		
	$ \longrightarrow // / $	$\backslash$		
		$\sim$		
$\wedge$		$\sim$		
(		$\backslash$		
	60	$\mathbb{N}^{\sim}$		$ \frown $
1)		$\backslash /$		
)	$   \rangle \rangle > \rangle$	/ /	$\searrow$	
/	$  //  \setminus f(x) \to f(x)$		$\searrow$	
	$ /// \wedge \rangle$	$\langle \rangle$	×	
/ /		$\times$		
/	$/// \wedge \rangle$			
	//// XX \\			
/ /				
LE	1.1000 @ 43	DATE	Sen 20	22
CK			000 20	
3 No.	BC	DRAWING	No.	REV
	IA19020		1-1	_

•







APPENDIX 2-1 Site Formation Plan



## NOTES FOR SOIL NAILS

## GENERAL NOTES

- 1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
- 2. ALL LEVELS ARE IN METRES ABOVE PRINCIPAL DATUM.
- 3. FOR INSTALLATION DETAILS OF SOIL NAILS, REFER TO SOIL NAIL SCHEDULE.
- 4. RECOMMENDATIONS AND REQUIREMENTS GIVEN IN GEOGUIDE 7 SHALL BE FOLLOWED.

## MATERIALS

- 1. THE CONTRACTOR SHALL SUBMIT SAMPLES OF SOIL NAILS COMPONENTS TO THE ENGINEER FOR APPROVAL AND INSTALL AS DIRECTED BY THE ENGINEER 2. ALL STEEL BARS SHALL COMPRISE HIGH YIELD TENSILE STEEL MANUFACTURED TO CS2:2012, ALL STEEL BARS SHALL BE PRE-FABRICATED WHICH THE STEEL BARS TO BE OBTAINED SHALL BE APPROVED BY THE ENGINEER. IN FCTORY CONDITIONS. BEFORE ANY ORDER IS PLACED. THE SOURCE FROM ARRANGEMENTS SHALL BE MADE TO THE SATISFACTION OF THE ENGINEER TO ENSURE THAT ALL
- MATERIALS DELIVERED TO SITE SHALL COME FROM THIS SOURCE ONLY. 3. APPROVAL GIVEN BY THE ENGINEER TO ANY SOURCE OF SOIL NAILS DOES NOT RELIEVE THE CONTRACTOR OF HIS CONTRACTUAL OBLIGATION TO SUPPLY MATERIALS WHICH COMPLY WITH THE SPECIFICATION. ANY MATERIAL WHICH IS UNSATISFACTORY, IN THE OPINION OF THE ENGINEER, SHALL BE REJECTED.
- 4. ALL STEEL BARS AND ASSOCIATED COUPLERS, STEEL PLATES AND NUTS SHALL BE HOT-DIP GALVANISED WITH A MINIMUM ZINC COATING OF 610 g/m<sup>2</sup> TO BS EN ISO 1461: 1999.
- 5. ALL EXPOSED STEEL SHALL BE PROTECTED BY APPROVED CORROSION PROTECTION. THREADS TO NUTS AND COUPLERS SHALL BE CUT PRIOR TO GALVANISING AND SHALL BE SIZED TO MATCH WITH THE GALVANISED HREAD ON THE BAR
- 6. MANUFACTURERS TEST CERTIFICATES AND TEST CERTIFICATES OF APPROVED LABORATORY SHALL BE SUPPLIED FOR EACH CONSIGNMENT OF BARS TO SHOW COMPLIANCE WITH THE MINIMUM REQUIREMENTS OF THIS STANDARD. ANY BARS ARS SHOWING SIGNS OF PITTING SHALL NOT BE USED.
- 7. THE CONTRACTOR SHALL FURNISH WITH EACH NAIL ALL ACCESSORIES INCLUDING STEEL BARS, PLASTIC SPACERS, STEEL BEARING PLATES, BALL WASHERS, MACHINE WASHERS, HEXAGONAL NUT, WEDGES AND TAPER WASHERS IF USED, SEALS AND RIGID PLASTIC GROUT INJECTION TUBES FOR APPROVAL BY THE ENGINEER.
- 8. ALL THREADS SHALL BE FREE OF RUST AND BURRS AND THE NUT SHALL BE FREE RUNNING ON THE BOLT. THE THREADS OF THE NUT AND OF THE PROJECTING END OF THE BOLT, AND THE SURFACES OF THE BALL MACHINES AND TAPERS WASHERS SHALL BE LUBRICATED WITH AN APPROVED RUST PREVENTATIVE PLASTIC GREASE BEFORE TIGHTENING THE NUT.
- 9. CLASS 1 CORROSION PROTECTION MEASURES ARE PROVIDED WHERE SOIL NAIL BARS ARE HOT-DIP GALVANISED WITH ZINC COATING PLUS CORRUGATED PLASTIC SHEATHING

## DRILLING

- 1. THE NAIL LOCATIONS ARE TO BE CONFIRMED ON SITE BY THE ENGINEER BASED ON THE SITE CONDITIONS.
- 2. THE ORIENTATION FOR EACH DRILL HOLE SHALL BE NORMAL TO THE SLOPE FACE AT THAT POINT. A SUITABLE TEMPLATE SHALL BE USED TO ENSURE THAT ALL HOLES ARE DRILLED IN THE CORRECT ORIENTATION.
- 3. HOLES OF DIAMETER SPECIFIED SHALL BE DRILLED FOR THE SOIL NAILS IN LOCATIONS, ORIENTATIONS AND TO THE DEPTHS ACCORDANCE WITH THE DRAWINGS OR AS SPECIFIED BY THE ENGINEER. DRILLING SHALL USE ONLY AIR FLUSH UNLESS SPECIFICALLY INSTRUCTED OTHERWISE BY THE ENGINEER IN WRITING. THE DRILLING METHOD USED SHALL BE SUBJECT TO THE AGREEMENT OF THE ENGINEER.
- 4. THE DRILLING EQUIPMENT SHALL BE SUITABLE FOR THE STRATA ENCOUNTERED AND FOR INSERTION OF STEEL BARS TO THE REQUIRED LENGTH. THE DEVIATION FROM THE SPECIFIED DIRECTION SHALL NOT EXCEED 5% OF THE LENGTH. THE PERMITTED DEVIATION OF DRILLHOLES SHALL BE SUCH THAT A ALL PLACES A MINIMUM OF 10mm GROUT COVER TO THE SOIL NAILING BARS AND COUPLER IS ACHIEVED. WHERE REQUIRED BY THE ENGINEER. THE CONSTRACTOR SHALL CARRY OUT AN INTERNAL SURVEY OF THE DRILLED HOLE TO CONFIRM THAT THE HOLE IS WITHIN THE SPECIFIED TOLERANCE
- 5. ON COMPLETION OF DRILLING, THE DRILLHOLE SHALL BE PLUGGED OR OTHERWISE PROTECTED TO PREVENT THE ENTRY OF FOREIGN MATERIAL.
- 6. EACH HOLE SHALL BE CLEANED OF ALL DRILL CUTTINGS, SLUDGE AND DEBRIS BY THE CONTRACTOR.
- 7. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A DRILLING RECORD OF EACH DRILLHOLE INCLUDING A BRIEF DESCRIPTION OF THE STRATA ENCOUNTERED AND THE APPROXIMATE PENETRATION RATE OF DRILLING NOT LATER THAN ONE DAY AFTER DRILLING THE HOLE AND PRIOR TO GROUTING. THE FORMAT AND CONTENT OF THE DRILLING RECORD SHALL BE APPROVED IN ADVANCE BY THE ENGINEER.
- 8. THE CONTRACTOR SHALL PROVIDE EQUIPMENT TO CHECK THE SLOPING ANGLE AND DIRECTION OF THE DRILLHOLES. BEFORE THE STEEL BAR IS INSERTED, THE CONTRACTOR SHALL IN THE PRESENCE OF THE ENGINEER CHECK THE NCLINATION, BEARING, CLEANLINESS AND LENGTH OF EACH DRILLHOLE. THE CONTRACTOR SHALL MAKE SURE THAT HIS METHOD OF DRILLING WILL NOT CAUSE COLLAPSE OF THE DRILLHOLE DURING DRILLING OPERATIONS AND/OR
- 9. DRILLHOLES SHALL BE CLEANED BY AIR FLUSH IMMEDIATELY PRIOR TO STEEL BARS INSERTION IF NECESSARY INSERTION OF STEEL BARS
- 1. THE INSERTION PROCEDURES SHALL BE TO THE APPROVAL OF THE ENGINEER AND SHALL CAUSE NO BENDING OF THE BAR SHANK OR DAMAGE TO THE THREAD ON THE PROJECTING END OF THE SOIL NAIL.
- 2. ALL ASSOCIATED COMPONENTS SHALL BE PROPERLY AND SECURELY ASSEMBLIED TO THE STEEL BARS IN ACCORDANCE WITH THE TYPICAL DETAILS BEFORE INSERTION.
- 3. BEFORE INSERTION, THE CONTRACTOR SHALL IN THE PRESENCE OF THE ENGINEER CHECK THE CONDITIONS OF EACH COMPONENT ASSEMBLIED AND THE STEEL BARS, AND REPLACE WITH THE SAME BATCH TO THE SATISFACTION OF THE ENGINEER IF NECESSARY

## GROUTING

- 1. THE SOIL NAIL SHALL BE GROUTED AS SOON AS PRACTICABLE AFTER INSERTION, BUT IN ANY EVENT WITHIN 48 HOURS OF INSTALLATION TO ENSURE THE STABILITY OF THE SOIL NAILED SLOPE. ALL NECESSARY PREPARATIONS FOR GROUTING OF NAILS SHALL BE MADE DURING THE INSTALLATION OF THE NAIL. THE METHODS OF ENSURING THAT THE SOIL NAIL IS GROUTED UP TO AND INCLUDING THE ANCHORAGE AND THAT THE AIR IS VENTED OUT OF THE DRILLHOLE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- 2. ALL SOIL NAILS SHALL BE GROUTED IN ACCORDANCE WITH THE FOLLOWING: a. ALL CEMENT USED IN THE GROUTING OF THE SOIL NAIL SHALL COMPLY WITH THE PROVISION OF BS 12.
- b. THE WATER CEMENT RATIO SHALL NOT EXCEED 0.45.
- c. BATCHING OF THE DRY MATERIALS SHALL BE BY WEIGHT. THE AMOUNT OF WATER USED SHALL BE MEASURED BY A CALIBRATED FLOWMETER OR
- MEASURING TANK. d. THE GROUT SHALL BE MIXED BY ADDING APPROXIMATELY TWO-THIRDS OF THE CEMENT TO THE WATER ADDING ANY ADMIXTURE AND ADDING THE REMAINING ONE-THIRD OF CEMENT. OTHER MIXING PROCEDURES SHALL
- NOT BE USED UNLESS PERMITTED BY THE ENGINEER. e. GROUT TO WHICH A RETARDING AGENT HAS NOT BEEN ADDED, AND WHICH IS NOT USED WITHIN 30 MINUTES OF MIXING, SHALL NOT BE USED FOR
- 3. NINE 100mm TEST CUBES SHALL BE MADE FROM EACH SAMPLE OF GROUT TAKEN AS STATED IN GS. EACH GROUP OF THREE TEST CUBES SHALL BE TESTED TO DETERMINE THE CRUSHING STRENGTH AT 3 DAYS. 7 DAYS AND 28 DAYS RESPECTIVELY. FOR PERMANENT SOIL NAILS, THE TEST CUBES FOR DETERMINING THE CRUSHING STRENGTH AT 3 DAYS AND 7 DAYS CAN BE OMITTED.
- 4. THE MINIMUM CRUSHING STRENGTH AT 28 DAYS SHALL BE 30MPa. THE ENGINEER MAY APPROVE OR ACCEPT CEMENT FOR GROUT ON THE RESULTS OF TESTS AT OTHER PERIODS LESS THAN 28 DAYS, BUT WILL DO SO ONLY AS LONG AS HE IS SATISFIED THAT THE RESULTS OF THE TESTS AT THE LESSER PERIOD ARE AN ADEQUATE GUIDE TO THE PROPERTIES AT THE LONGER PERIOD.

## PULL OUT TESTS FOR SOIL NAILS

- 1. THE LOADING APPARATUS SHALL BE SET UP IN SUCH A WAY THAT NO LOADING, OTHER THAN THE PULLOUT LOAD, ACTS ON THE STEEL BAR AT THE NAIL HEAD. THE REACTION OF PULL-OUT LOAD FROM THE LOADING APPARATUS SHALL ACT ON A SUFFICIENTLY SIZED RIGID BEARING PLATE PLACED AGAINST A TEMPORARAY CUT FACE AT NORMAL TO THE ALIGNMENT OF THE STEEL BAR TO ENSURE ADEQUATE LOAD SPREADING AND TO AVOID ECCENTRIC LOADING. MONITORING INSTRUMENTS SHALL BE CAREFULLY POSITIONED AND INDEPENDENTLY SUPPORTED TO RECORD THE EXTENSION OF THE SOIL NAIL STEEL BAR AND ANY MOVEMENT OF THE STEEL BEARING PLATE.
- 2. THE SOIL NAIL SHALL BE GROUTED OVER THE LENGTH AS SPECIFIED IN THE DRAWINGS OR AS DIRECTED BY THE ENGINEER. THE LENGTH TO BE GROUTED SHALL BE ISOLATED BY MEANS OF A PACKER THAT CAN PREVENT GROUT FROM LEAKING THROUGH TO THE FREE-LENGTH SECTION DURING GROUTING AND THAT CAN ENSURE THAT THE PROPOSED BONDED SECTION IS EFFECTIVELY GROUTED TO THE REQUIRED LENGTH AS SHOWN IN THE DRAWINGS. THE ENTIRE FREE LENGTH OF THE STEEL BAR SHALL BE PROPERLY DEBONDED OR CAPPED TO ENSURE THAT THE TEST LOAD CAN BE DIRECTLY TRANSFERRED TO THE BONDED ZONE IN CASE OF GROUT LEAK THROUGH THE PACKER.

- 3. THE PULLOUT TEST SHALL NOT BE CARRIED OUT UNTIL THE GROUT HAS REACHED A CUBE STRENGTH OF 21MPa.
- 4. THE TEST SOIL NAIL SHALL BE LOADED IN STAGES: FROM THE INITIAL LOAD (Ta) VIA TWO INTERMEDIATE TEST LOADS (TDL1 AND TDL2) TO
- THE MAXIMUM TEST LOAD
- 5. TDL1 SHALL BE THE ALLOWABLE PULLOUT RESISTANCE PROVIDED BY THE BOND LENGTH OF THE CEMENT GROUT SLEEVE OF THE TEST SOIL NAIL.
- 6. TDL2 SHALL BE TDL1 TIMES THE FACTOR OF SAFETY AGAINST PULLOUT FAILURE AT SOIL-GROUT INTERFACE (FSG).
- 7. THE MAXIMUM TEST LOAD SHALL BE 90% OF THE YIELD LOAD OF THE TEST SOIL-NAIL REINFORCEMENT (TP) UNLESS THE ULTIMATE GROUND-GROUT BOND LOAD (T ULT) IS REACHED DURING THE TEST. REINFORCEMENT SIZE LARGER THAN THAT OF THE WORKING SOIL NAIL SHOULD BE USED IN THE PULLOUT TEST, WHERE NECESSARY, TO ALLOW THE DEVELOPMENT OF T ULT PRIOR TO REACHING TP.
- 8. To SHALL BE TDL1 OF 5% OF TP, WHICHEVER IS SMAILLER.
- 9. DURING THE FIRST TWO LOADING CYCLES, TDL1 AND TDL2 SHALL BE MAINTAINED FOR 60 MINUTES FOR DEFORMATION MEASUREMENT. THE MEASUREMENT AT EACH OF THE CYCLES SHALL BE TAKEN AT TIME INTERVALS OF 1, 3, 6, 10, 20, 30, 40, 50 AND 60 MINUTES. IF THE TEST SOIL NAIL CAN SUSTAIN THE TEST LOAD SUBJECT TO THE ACCEPTANCE CRITERIA GIVEN BELOW, THE LOAD SHALL BE REDUCED TO TO AND THE RESIDUAL DEFORMATION SHALL BE RECORDED AFTER WHICH THE TEST SHALL PROCEED TO THE NEXT LOADING CYCLE.
- 10. IN THE LAST LOADING CYCLE, THE TEST LOAD SHALL BE INCREASED GRADUALLY FROM TO STRAIGTH TO THE MAXIMUM TEST LOAD AND THEN MAINTANINED FOR DEFORMATION MEASUREMENT. THE MEASUREMENT SHALL BE TAKEN AT TIME INTERVALS OF 1, 3, 6, 10, 20, 30, 40, 50 AND 60 MINUTES. IF THE TEST SOIL NAIL CAN SUSTAIN THE TEST LOAD SUBJECT TO THE ACCEPTANCE CRITERIA GIVEN BELOW, THE LOAD SHALL BE REDUCED TO TO AND THE RESIDUAL DEFORMATION SHALL BE RECORDED, AFTER WHICH THE TEST IS COMPLETED.
- 11. IF THE TEST SOIL NAIL FAILS TO SUSTAIN TDL1 TDL2 OF THE MAXIMUM TEST LOAD IN ANY CYCLE, THE TEST SHALL BE TERMINATED AND THE SOIL NAIL MOVEMENT AGAINST RESIDUAL LOAD WITH TIME SHALL BE RECORDED. THE MEASUREMENTS SHALL BE TAKEN AT TIME INTERVALS OF /1. 3. 6. 10 AND, EVERY 10 MINUTES THEREAFTER OVER A PERIOD FOR AT LEAST TWO HOURS. THE MEASUREMENTS SHALL BE TAKEN FOR A LONGER PERIOD WHERE CONSIDERED NECESSARY.
- 12. ACCEPTANCE CRITERIA: THE TEST SOIL NAIL IS CONSIDERED TO BE ABLE TO SUSTAIN THE TEST LOAD IF THE DIFFERENCE OF SOIL NAIL MOVEMENTS AT 6 MINUTES AND 60 MINUTES DOES NOT EXCEED 2mm OR 0.1% OF THE BOND LENGTH OF THE TEST SOIL NAIL.
- (SEE DETAIL 'A') EXISTING GROUND -500-SOIL NAIL SCHEDULE NAIL LENGTH NAIL ROW NO. NOS. OF NAILS (m) Α 4 2 B ~~~~ 4 PULLOUT TEST SCHEDULE NAIL LENGTH DRILLHOLE DIA. TEST NAIL NO. (m) (mm) 150 T2 4 150 2 4 Ω 7 Ľ Z И 1 4 4 STAGE 1 EXTENT OF -MOTACENT EX LALL (BASED ON PLAN) (BASED ON PLAN) F8790 G<sup>92.06</sup> Wall height 1.15m 4100 Wall height 1.07 (+89.90) 2000 RW2 (+89.70) Nater /





APPENDIX 6-1 Conditions for Working within Gathering Ground

## Conditions for Working within Gathering Grounds

- (a) Adequate measures shall be taken to ensure that no pollution or siltation occurs to the gathering grounds.
- (b) No earth, building materials, fuel, oil or toxic materials and other materials which may cause contamination to the gathering grounds are allowed to be stockpiled or stored on site.
- (c) All surplus spoil shall be removed from gathering grounds as soon as possible.
- (d) Temporary drains with silt traps shall be constructed at the boundary of the site prior to the commencement of any earthworks.
- (e) Regular cleaning of the silt traps shall be carried out to ensure that they function properly at all time.
- (f) All excavated or filled surfaces which have the risk of erosion shall be protected from erosion at all time.
- (g) Facilities for washing the wheels of vehicles before leaving the site shall be provided.
- (h) Any construction plant which causes pollution to the gathering grounds due to leakage of oil or fuel shall be removed off site immediately.
- (i) Any soil contamination with fuel leaked from plant shall be removed off site and the voids arising from removal of contaminated soil shall be replaced by suitable material to the approval of the Director of Water Supplies.
- (j) Provision of temporary toilet facilities is to be subject to the approval of the Director of Water Supplies.
- (k) All waterworks access roads must be maintained unobstructed at all time.
- (1) Site formation plans shall be submitted to W.S.D. for approval prior to commencement of work.
- (m) No structure or temporary works shall be erected in the catchwaters without prior approval of W.S.D.

(n) The Contractor shall be responsible for cleaning frequently any waterworks roads and associated drainage works of mud and debris.

(o) The Contractor shall limit the gross weight of the vehicles imposed on the waterworks access to 5 tonnes and the axle load to 3 tonnes. He shall apply to W.S.D. with details of his vehicles for using the access.

- (p) The approval for using the access may be withdrawn on written notice to the Contractor by W.S.D. at their absolute discretion.
- (q) The Contractor shall recover immediately his vehicle which fell into the catchwater or stream bed or pay to Government on demand the cost of recovery that may be necessary through the occurrence of any incident caused by the Contractor.
- (r) The Contractor shall carry out repair or reinstatement works to the satisfaction of W.S.D. or pay to Government on demand the cost of repair and reinstatement to any waterworks installations that shall or may be necessary at any time as a result of damage caused by the Contractor or others under his charge.
- (s) The Contractor shall enter and remain on and use the access at his own risk and he shall indemnify the Government of Hong Kong from all claims, costs, damages and expense arising from the use of the access.
- (t) No excavation with depth more than 2m shall be permitted within 120m from the centerline of WSD water tunnels without the prior approval of WSD.

5 ....

APPENDIX 6-2 Conditions for Working in the Vicinity of Waterworks Installation

#### Conditions for Working in the Vicinity of Waterworks Installations

#### Water Mains

0

- 1. No water mains or their support shall be interfered with or buried without the prior approval of WSD.
- 2. The Contractor shall check the location of water mains and cables and other services by hand dug trial holes and take precautionary measures to protect them.
- 3. Free access shall be maintained at all times for the staff of WSD, their contractors and vehicles to go into and/or through the site to carry out installation, inspection, operation, maintenance or repair works.
- 4. No additional filling material is to be deposited over a water main without the approval of WSD.
- 5. No structures shall be erected or materials stored within 3 metres from the centre line of mains of 900mm diameter or under, and 5 metres for mains exceeding 900mm in diameter.
- 6. Full details of any proposed temporary works affecting waterworks installations and of any temporary support or protective measure to mains shall be submitted to the Client Department where appropriate for approval and to WSD for information. Work shall not commence until approval is given by the Client Department.
- 7. Diversion of WSD mains, other than those already shown on the contract drawings, shall only be considered when all other options such as protection of the mains or modification of design have been considered and found to be impracticable.
- 8. The programme for laying or diversion of all WSD mains shall be agreed with WSD in advance. A 14-day notice shall be served to WSD to confirm site availability for the commencement of any agreed diversion. WSD shall also be notified of any change required in the agreed programme as soon as possible.
- 9. All excavation works within 1.5m of water mains exceeding 900 mm in diameter shall be carried out by hand. No excavation shall be carried out within lines 45° below the centre line of such mains or 45° below the edges of the foundation of their supports without approved ground support. If the support is in the form of steel sheets, they shall be left in place after works. Removal of support from underneath the mains is not permitted.
- 10. No earth fill ramps are to be used to form temporary crossings of the large diameter mains. Temporary ramps/bridges in steel, timber, or concrete shall be used with the deck and support piers clear of the mains so that no loading is imposed on the mains.
- 11. All temporary works near the large diameter water mains shall be kept to at least 1 metre away from the edge of the mains and the length of mains affected shall be well protected by a temporary timber cover raised 250 mm clear of the mains to ensure no impact damage.

#### Blasting, Drilling and Piling near Waterworks Installations

- 12. No blasting, drilling, or pile driving (including sheet piling) within a distance of 60m from waterworks tunnels shall be carried out. Furthermore, blasting within 50m from any water retaining structure other than watermains; 6m from watermains of 600mm diameter and above; and 6m from any non-water-retaining structure shall not be carried out without the prior approval of WSD.
- 13. The maximum particle velocity and amplitude of ground movements due to blasting or pile driving as measured at the nearest waterworks tunnel or other water retaining structures shall not exceed 13mm/sec. and 0.1mm respectively.
- 14. The maximum particle velocity and amplitude of ground movements due to blasting or pile driving as measured at the nearest water mains shall not exceed 25mm/sec. and 0.2mm respectively.
- 15. The size of charge, pattern and timing of detonation etc. will be decided by the Commissioner of Mines after carrying out test firing at site.
- 16. The movement of mains and structures shall be monitored by surveys jointly attended by WSD, the project Department and the Contractor. One week's notice shall be given to WSD for any survey request.
- 17. Vibration from blasting, piling or other causing activities shall be monitored by means of agreed vibrograph readings. The vibrograph shall comply with the Specification below and shall be provided free by the Contractor.
- 18. The results of monitoring of the vibration and any movement of water mains and waterworks structures shall be submitted to WSD for record purpose. If the aforementioned vibration limits are exceeded or movement in excess of 5mm is detected, works shall be suspended until approved remedial works are completed. Full details of the proposed works shall be approved by WSD before any work commences.

#### Specification for Vibrograph

- (a) The machine shall be a direct reading type peak particle velocity vibrograph.
- (b) It shall have 3 channels, recording in 3 mutually perpendicular directions.
- (c) It must be able to record particle velocity and amplitude, although not necessarily at the same time.
- (d) It must produce a permanent trace on paper, preferably by using ultra-violet light.
- (e) The recording paper must be easily obtainable locally.
- (f) The instrument must be portable and battery operated (or else a generator must be supplied free).
- (g) Operating instructions must be in English.

#### **Excavation near Waterworks Installations**

19. Excavation shall not be permitted within lines drawn at 45° downwards from a point 6m away from the foundation lines of any waterworks structures.

- 20. No excavation should be carried out within 60 metres, horizontally of any tunnel and no excavation or well driving shall be carried out above any tunnel.
- 21. No quarrying operations shall be carried out above and/or within 150 metres horizontally from any waterworks tunnel.

#### Prevention of Pollution of Waterworks Catchments

- 22. Site formation, construction and drainage plans shall be submitted to WSD for approval prior to commencement of work.
- 23. Protective measures shall be taken by the Contractor to prevent pollution or siltation to the catchment area. Any bulk excavation within the catchment shall be provided with silt traps to prevent any particular matter from entering streams or intakes. The details of silt traps shall be submitted to WSD for approval. Silt traps shall be cleared out regularly and in particular after any rainstorm.
- 24. The storage and discharge of pesticides, toxicant, flammable or toxic solvents, petroleum oil, diesel, tar or other toxic substances are strictly prohibited within the gathering grounds.
- 25. No labour lines shall be allowed within waterworks catchment area.
- 26. Only dry-type portable toilet facility with regular desludging schedules is allowed during the construction period. The sludge must be disposed of properly outside the gathering grounds. Portable toilets shall be kerbed on all sides, located at least 30 metres away from the streams and desludged on a regularly basis.
- 27. The Contractor shall be responsible for cleaning frequently any waterworks roads and associated drainage works of mud and debris.
- 28. Should pollution be detected in future due to the development, immediate remedial actions to clear the pollution must be taken by the Contractor.

#### Waterworks Installations (e.g. Treatment Works) Nearby

- 29. The Contractor will not be permitted access to any adjacent waterworks installations.
- 30. An unimpeded free vehicular access shall be maintained at all times to and from the adjacent waterworks installations in the vicinity.

#### Special provisions

31. WSD may impose further conditions as deemed necessary for the protection of waterworks that may be adversely affected by the proposed works including but not limited to the appointment of independent checking engineer and specialists at the expense of the project.

- END -

### Flow Chart on Procedures for Safe Working near Water Mains



APPENDIX 7-1 Potential Risk, Precautionary Measures and Risk Assessment

Risks / Hazard	Risk Rating Prev	before Implen ventive Measur	nentation of re(s)	Preventive Measure(s)	Monitoring System	Risk Rating after Implementation of Preventive Measure(s)			
	Likelihood	Consequence	Risk			Likelihood	Consequence	Risk	
Leakage from Indoor to Outdoor Area	Medium	Medium	Medium	No accumulation of large amount of surface runoff near the propose house during rainstorm is anticipated due to the elevation of the house. With door(s) protected by bunded wall, all indoor wastewater, wash water and potential leaked sewage on the floor shall be blocked and eventually collected by the sewage storage tank via floor drains.	N/A	Unlikely	None	None	
Leakage from Sewage Pipelines to Outdoor Area	Medium	Medium	Medium	The sewer pipes shall be made of cast iron or other approved material with sealed joints and hatched boxes. All sewer pipes shall be located within the building footprint to ensure any potential leakage will be collected by the floor drain(s) and reach the underground holding tank.	It is sever pipes shall be made of cast iron or other proved material with sealed joints and hatched ixes. It is ever pipes shall be located within the building otprint to ensure any potential leakage will be ollected by the floor drain(s) and reach the inderground holding tank.		None	None	
Leakage from the Underground Room to Groundwater	Medium	Medium	Medium	Non-seeping material and/or membrane shall be applied to the floor and walls of the underground room luring construction to provide a waterproof room. Luring construction to provide a waterproof room.		Low	Low	Low	
Leakage from the Underground Room to Outdoor Aera	Low	Medium	Medium	No accumulation of large amount of surface runoff near the proposed house during rainstorm is anticipated. Therefore, by providing the access door/opening of the underground room either within building or surrounding by bunded wall with cover are sufficient to prevent water ingress to the underground room.		Unlikely	None	None	
Leakage from Sewage Holding Tank to the Underground Room caused by:		·							
• Flooding of Sewage Holding Tank due to Water Ingress under Heavy Rain	Low	Medium	Medium	The vent pipe shall be equipped with rain cap.All sewer pipes shall be located within building footprint thus no water ingress via the leaked sewers is anticipated.Pairs of water sensors with self-error detection mechan		Low	Low	Low	
<ul> <li>Overflowing of Sewage Holding Tank</li> </ul>	Low	High	Medium	The monitoring system will warn the occupants at 50%, 70% & 85% full. At 70% and 85% full, the alarm will also be triggered. The required action and warning message shall be displayed on the screen of the control panel to remind the occupants until the warning signal wears off. Occupant shall stop sewage generation until all defects have been rectified by Contractor	be provided at each of the concerned water level. Alarm test shall be conducted before operation and at monthly inspection during operation by the checker. WSD and PlanD shall be notified within 24 hours in case leakage is identified.	Low	Low	Low	
<ul> <li>Crack, External Damage or Deterioration</li> <li>Medium</li> <li>Medium</li> <li>Medium</li> <li>Medium</li> <li>Medium</li> <li>Medium</li> <li>Medium</li> <li>Medium</li> <li>The sewage holding polypropylene tank. prevent any crack pro chance of leakage will The double layer desi between noticeable leakage, thus more to temporary repair or re</li> </ul>		The sewage holding tank shall be a double-layered polypropylene tank. The double layer design can prevent any crack propagates to another layer thus the chance of leakage will be greatly reduced. The double layer design can also provide longer time between noticeable damage occurred and sewage leakage, thus more time is available for arranging temporary repair or replacement	Leakage test shall be performed upon construction to confirm the integrity of the sewage holding tank before operation. External damage shall be checked before operation and at monthly inspection during operation by the checker. Access door shall be provided for inspection when necessary. WSD and PlanD shall be notified within 24 hours in case leakage is identified.	Low	Low	Low			

Sewerage Impact and Risk Assessment Report for Lot No. 764 in D.D.249 and Adjoining Government Land Wang Che, Sai Kung, New Territories

Risks / Hazard	Risk Rating Prev	g before Impler ventive Measur	nentation of re(s)	Preventive Measure(s)	Monitoring System	Risk Rating after Implementation of Preventive Measure(s)			
	Likelihood	Consequence	Risk			Likelihood	Consequence	Risk	
System Breakdown	Low	High	Medium	The sewage holding tank is expected to hold 2 weeks of sewage under reasonably worst situation. The weekly sewage removal shall stop the tank from being overflowed.	When there is a power outage and/or system breakdown, i.e.: no signal output from the monitoring system, the battery powered visual alarm shall be switched on automatically to inform the occupants for arranging emergency checking and maintenance.	Low	Low	Low	
Water Pollution Arising from The Construction Activities	High	High	High	The proposed mitigation measures including the WSD's conditions will be incorporated into the tender of this Proposed development to ensure that the project team will minimize the potential water quality impact.	N/A	Low	Low	Low	

Sewerage Impact and Risk Assessment Report for Lot No. 764 in D.D.249 and Adjoining Government Land Wang Che, Sai Kung, New Territories

# **APPENDIX E**

**Tree Survey Report** 

#### Lot 764 in D.D. 249 and Adjoining Government Land Wang Che, Sai Kung, New Territories

**Tree Survey Report** 

(Version 2.3)



REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

#### CINOTECH CONSULTANTS LTD

Room 1710, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong Tel: (852) 2151 2083 Fax: (852) 3107 1388 Email: info@cinotech.com.hk

Project	Lot 764 in D.D. 249 and Adjoining Government Land Wang Che, Sai Kung, New Territories						
Report	Tree Survey Report						
Version/Revision	2.3	30 September 2022					

, ,

	Prepared by	Checked by
	Ms. Betty Choi	Mr. Bond Shum (Certified Arborist: HK-1422A)
Signature	Be-	k
Date (DD-MM-YYYY)	30 September 2022	30 September 2022

.

### **TABLE OF CONTENTS**

Page

1	INTRODUCTION1
	Background 1 Objectives of the Tree Survey 1
2	SURVEY METHODOLOGY 1
3	TREE SURVEY RESULTS AND RECOMMENDATIONS 2
	Tree Survey Findings 2
4	RECOMMENDATIONS 3
5	CONCLUSION 4

## LIST OF FIGURES

Figure 1 Location of Surveyed Trees

## LIST OF TABLES

Table 3.1	Summary of Tree Survey Results
Table 3.2	Recommendations for Trees Surveyed

### LIST OF APPENDICES

- Appendix A Tree Schedule
- Appendix B Photographic Records for Surveyed Trees
- Appendix C Detail Photographic Records of T1
- Appendix D Extract of CEDD General Specifications

## 1 INTRODUCTION

## Background

- 1.1 The Applicant (Mr. Yip Tin Leung) proposes to rezone the Site at Lot 764 in D.D. 249 and adjoining Government land in Wang Che, Sai Kung from mainly "Conservation Area" and partly "Village Type Development" to wholly "Village Type Development". This allows him to build a Small House and carry out site formation works on the Site (the proposed development).
- 1.2 Soil nailing of a slope close to the proposed development is required for slope stabilization. As trees are found on the slope (i.e., with trunk diameter of 95 mm or more at a height of 1.3 m above the ground level), Cinotech was commissioned by the Applicant to undertake the tree survey in support of the landslip prevention and mitigation works for the Project.

## **Objectives of the Tree Survey**

- 1.3 The key objectives of this Tree Survey Report are as follows:
  - To provide an inventory of existing trees in the study area;
  - To prepare a topographical survey plan showing the locations of the trees;
  - To assess the current status of the trees within the study area; and
  - To provide recommendations on protection of trees

## 2 SURVEY METHODOLOGY

- 2.1 All trees were surveyed in accordance with DEVB TC (W) No. 4/2020 and AFCD Nature Conservation Practice Note No. 02. Individual tree's location, height, crown spread and diameter at breast height (DBH) in the proposed site were recorded. Surveyed trees were also clearly tagged with label for future field reference.
- 2.2 The current health status of each individual tree was examined. Health condition was evaluated according to the following criteria:
  - Tree with no observable defect and health problem is classified as good;
  - Tree with few defects and/or health problem is classified as average; and
  - Tree with serious defects and/or health problem (e.g. badly damaged or suffering from decay, die back, very heavy vine growth) is classified as poor.
- 2.3 Tree form was evaluated according to the following criteria:
  - Tree with even branches, well-balanced crown and upright posture is classified as good;
  - Tree with slightly uneven branches, unbalanced crown and posture is classified as average; and
  - Tree with highly bending/forked branches, unbalanced crown and posture (e.g. leaning) is classified as poor.

- 2.4 The amenity value of each tree was evaluated based on its form, individual and/or collective visual contribution to surrounding. It is graded under three categories: high, medium and low.
- 2.5 The structural condition of each tree was evaluated based on its observed appearance, the presence of defects that can attribute to tree failure and result in collision of tree. It is graded under three categories: good, average and poor.
- 2.6 Suitability for transplanting of each tree was evaluated based on intrinsic tree factors such as health and structure of the tree, engineering consideration such as feasibility and transport limitations, and financial consideration such as cost-effectiveness of a transplant operation. It is graded under three categories: high, medium and low.
- 2.7 Conservation status of each tree was examined based on the rarity and protection status under relevant ordinances of the species in Hong Kong. References including Rare and Precious Plants of Hong Kong, the IUCN Red List of Threatened Species, the Forests and Countryside Ordinance (Cap. 96) and the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586) were used.

## **3** TREE SURVEY RESULTS AND RECOMMENDATIONS

## **Tree Survey Findings**

- 3.1 Surveyed tree locations at and around the Site in Wang Che, Sai Kung are shown in Figure 1. Detailed survey results are tabulated in Appendix A. Photographic records of the trees are shown in Appendix B.
- 3.2 Tree survey was conducted in July 2021. During the survey, a total of 12 tree individuals were surveyed with a total of 6 species identified, as listed in **Table 3.1**.

Species	Eco	logy	No of individual	
species	Native	Exotic	No. of mulvidual	
Aporosa dioica	Y	-	1	
Araucaria heterophylla	-	Y	2	
Cratoxylum cochinchinense	Y	-	2	
Rhus succedanea	Y	-	1	
Schefflera heptaphylla	Y	-	4	
Symplocos glauca	Y	-	1	
Dead tree	-	-	1	
Total	5	1	10	
10tai	6		12	

Table 3.1Summary of Tree Survey Results

3.3 Except Araucaria heterophylla (異葉南洋杉) is an exotic plant species and one dead tree (T1) is identified (see **Appendix C** for details), all species recorded are native plant species. They are commonly found in Hong Kong and with no conservation status.

- 3.4 Most of the surveyed trees were with medium amenity, only 3 individuals, T3, T11 and T12 were considered to have high amenity. The form, health condition and structural condition of surveyed trees were generally assessed as average.
- 3.5 All of the trees (T1-T12) were located outside the Site Boundary (see **Figure 1** for details). Tree crown spread is the approximate extent of tree roots. A tree protection zone should normally be set below the dripline of the trees where construction activities should be avoided. Although some of the soil nails are designed within the tree protection zone of T7-T9 and T12, the impact on the trees can be minimized by adjusting the location of the soil nails onsite to avoid damaging the major roots. Other precautionary measures as per Clause 26.12 of the *General Specification for Civil Engineering Works (2006 Edition)* are extracted as **Appendix D**. Therefore, all the trees mentioned were considered to be retained in the original locations. No adverse impact on the existing trees and landscape is anticipated.
- 3.6 In summary, 12 trees will be retained onsite.

Recommendation	Number of Trees Surveyed
Retain	12
Transplant	0
Remove	0

## Table 3.2 Recommendations for Trees Surveyed

## 4 **RECOMMENDATIONS**

- 4.1 During construction and operation of the Site, the following guidelines will be followed to protect retained trees within and in the vicinity of the work area:
  - Before the commencement of construction works, the Contractor must be aware that all trees are to be retained.
  - Trees which are to be retained will be clearly marked on site prior to the commencement of site construction works, preferably by printed numbers consistent with the Tree Survey Report for the Project. Trees to be retained will also be marked with surveyor's flagging or ribbon.
  - As a general rule the majority of a tree's roots lies within an area just greater than the spread of its crown. This may be less on heavy soils and greater on drier soils. Therefore, a tree protection zone which equals the tree spread coverage shall be set and the following precautions shall be undertaken in order to prevent damage to the trunks, roots and crowns of trees during constructions.
    - Heavy equipment and supplies will be placed outside the tree protection zone.
    - Care will be taken to prevent trees being damaged by mechanical equipment both during site clearance works and construction works.
    - No fixings will be driven into trees.

- No equipment maintenance will be carried out under trees.
- No excavation, including that for services or changes in ground level will take place within the spread of the crown of the trees, or a minimum of 1.5m from the tree trunk, as roots may be damaged.
- No soil, debris or construction materials will be deposited around and against the trunk of a tree as this causes bark damage and compaction of the soil.
- No fire will be lit below the branches and no petrol, oil or caustic substances stored near the trees.
- No trees will be used for anchoring or winching purposes or for the display of signs.
- Watering should be applied during the construction phase to reduce dust on plant surface.

## 5 CONCLUSION

5.1 In this survey, a total of 12 tree individuals were recorded. Measures are recommended to protect the trees from accidental damage during proposed development. All of 12 trees will be retained.

FIGURES



APPENDIX A Tree Schedule

#### Appendix A - Tree Schedule

	Species		Measurements		Measurements		Amenity value Form Health condition Structural		Suitability for transplanting			Recommendations	Maintenance			
Tree No.	Scientific name	Chinese name	height (m)	DBH (m)	crown spread (m)	(high(H)/ medium(M)/l ow(L))	(good(	G)/average(A	.)/poor(P))	(high(H)/ medium(M)/l ow(L))	Remarks	Conservation status	vation us (retain/transplant/remove)		tment to comment TPRP After	Remarks
T1	Dead tree	死樹	9	0.134	5	/	/	/	/	L	/	No	Retain	LandsD	LandsD	-
T2	Cratoxylum cochinchinense	黄牛木	10	0.204	5	М	G	А	G	L	/	No	Retain	LandsD	LandsD	Epicormic shoot; boulder was placed on the root
T3	Schefflera heptaphylla	鵝掌柴	11	0.334	8	н	А	А	А	L	/	No	Retain	LandsD	LandsD	Dead branches; with a few dead and yellow leaves
T4	Rhus succedanea	野漆樹	6	0.182	3	L	А	Р	А	L	/	No	Retain	LandsD	LandsD	epicormic shoot; broken branches; with vine plant
T5	Schefflera heptaphylla	鵝掌柴	8	0.268	6	М	А	G	А	L	/	No	Retain	LandsD	LandsD	good stem condition; with thick vine plant on branch; root expansion blocked by shotcrete; leaning
T6	Symplocos glauca	羊舌樹	7	0.115	7	М	G	А	А	L	/	No	Retain	LandsD	LandsD	with fungal fruiting bodies on the broken branch
T7	Schefflera heptaphylla	鵝掌柴	8	0.261	7	М	А	А	А	L	/	No	Retain	LandsD	LandsD	leaning; root expansion blocked by shotcrete
Т8	Aporosa dioica	銀柴	6	0.111	5	М	А	G	А	L	/	No	Retain	LandsD	LandsD	broken branches; a few epicormic shoots
Т9	Schefflera heptaphylla	鵝掌柴	5	0.108	5	М	А	А	А	L	/	No	Retain	LandsD	LandsD	with many epicormic shoots; root expansion blocked by shotcrete; leaning
T10	Cratoxylum cochinchinense	黄牛木	8	0.124	4	М	G	А	G	L	/	No	Retain	LandsD	LandsD	with vine plant; a broken trunk was placed on the root
T11	Araucaria heterophylla	異葉南洋杉	10	0.271	3	Н	G	G	А	L	/	No	Retain	LandsD	LandsD	close to fence
T12	Araucaria heterophylla	異葉南洋杉	11	0.271	3	Н	G	G	А	L	/	No	Retain	LandsD	LandsD	sand bags were placed on the root; close to fence

APPENDIX B Photographic Records for the Surveyed Trees



(12 July 2021)



(12 July 2021)







(12 July 2021)

CINOTECH	Lot No. 764 in D.D.249 and Adjoining Government Land	SCALE	DATE
	Wang Che, Sai Kung , New Territories	N.T.S.	Aug 2021
Cinotech Consultants Limited	Photographic Records for the Surveyed Trees	Project No. IA19020	APPENDIX B



(12 July 2021)



(12 July 2021)







(12 July 2021)



(12 July 2021)

CINOTECH	Lot No. 764 in D.D.249 and Adjoining Government Land Wang Che, Sai Kung , New Territories	SCALE	S. Aug 2021
Cinotech Consultants Limited	Photographic Records for the Surveyed Trees	Project No.	020 B



(12 July 2021)



(12 July 2021)







## (12 July 2021)

(12 July 2021)

Cinotech Consultants Limited	Lot No. 764 in D.D.249 and Adjoining Government Land Wang Che, Sai Kung , New Territories	SCALE N.T.S.	DATE Aug 2021
	Photographic Records for the Surveyed Trees	Project No.	APPENDIX B
APPENDIX C Detail Photographic Records of T1

# Appendix C



**Detailed Photographic Records for T1** 

Broken tree branch



Leafless

APPENDIX D Extract of CEDD General Specifications

- (a) Excavation shall be carried out using only hand-held tools such as hoe and spade, but not mechanical diggers or bulldozers,
- (b) Whenever roots are encountered and before root cutting is carried out, soil shall be carefully forked away from the roots using hand-held tools up to the edge along which root cutting is required,
- (c) Root cutting shall be carried out carefully using sterilised hand-held pruning tools, and roots greater than 25 mm in diameter shall be pruned carefully so as not to result in shattered and frayed roots,
- (d) Any roots damaged during excavation shall be cut back cleanly with sharp tools to undamaged tissue and treated with an approved fungicidal dressing before backfilling,
- (e) All cut and exposed roots shall be prevented from drying out during excavation by adopting the following measures until backfilling, unless otherwise agreed by the Engineer:
  - (i) Wrap the tap roots, sinker roots, support roots, and roots with diameter exceeding 50 mm with hessian, straw or other porous, absorbent fabric once they are exposed,
  - (ii) Hang thick hessian or other porous, absorbent fabric from top of the cut surface over the exposed roots and soil immediately after root cutting, and
  - (iii) Mist the hessian or fabric in a frequency that keeps the roots and the soil at the cut surface moist all the time,
- (f) The hessian, straw or other porous, absorbent fabric stipulated in sub-clause (2)(e)i) of this Clause and the hessian or fabric stipulated in sub-clause (2)(e)ii) of this Clause shall be removed immediately before backfilling, and
- (g) Excavations shall be backfilled with soil mix incorporated with slow release fertiliser at a rate of  $500 \text{ g/m}^3$  or at a rate as directed by the Engineer to a level equivalent to the original soil level at the root collar after settlement.

(1) Without the Engineer's prior approval, the Contractor shall not carry out drilling, such as soil nailing and drilling for bore holes, rock bolts or dowels, within the tree protection zones of the preserved trees unless the Contract explicitly requires such drilling work within the tree protection zones. For the approved drilling work within the tree protection zones, the Contractor shall comply with the following requirements:

- (a) Obtain agreement from the Engineer about the detailed locations and extent of the drill holes before commencing any drilling work. The Contractor should bear in mind that the drill holes shall be located in such a way that the structures to be placed into the drill holes, including the surface elements of the structures such as soil nail heads, are at a minimum distance of 500 mm from the trunks of the preserved trees unless otherwise agreed by the Engineer, and
- (b) Carry out the following before commencing any cutting work to the aerial roots or underground roots of the preserved trees:

**Protection of preserved** 26.12 trees from drilling

- (i) Determine the locations of their major roots and the bulk of their absorbing roots so as to keep the cutting of tree roots to a minimum and to preserve the tap roots, sinker roots and support roots of the trees in any circumstances,
- (ii) Obtain agreement from the Engineer about the extent of root cutting on the Site,
- (iii) Where the stability of the trees is likely to be jeopardised, comply with the requirements stipulated in Clause 26.13,
- (c) Carry out the drilling work carefully so as not to damage the branches, foliage, trunk, bark and root collars of the preserved trees when gaining access for, supporting, mobilising, positioning and operating the drilling rig, and
- (d) Maintain balanced moisture content in the trees and in the soil after the drilling work, by carrying out necessary precautionary measures such as crown thinning, watering and mulching.

(2) The Contractor shall take the following precautions when carrying out drilling work that involves cutting of the roots of the preserved trees:

- (a) Drilling work and root cutting work shall be carried out carefully,
- (b) Roots greater than 25 mm in diameter shall be pruned carefully in order to prevent shattered and frayed roots, and
- (c) Any roots damaged during drilling shall be cut back cleanly with sharp tools to undamaged tissue and treated with an approved fungicidal dressing.

(1) Where the Works involve cutting of any major roots or other major parts of the preserved trees or any other works that may jeopardise the stability of the preserved trees, the Contractor shall install all necessary physical support measures that will ensure the stability of the preserved trees. The Contractor shall pay particular attention to the preserved trees growing on retaining structures in order to prevent the trees from being dislodged from its position as a result of inadequate support.

(2) The physical support measures for the preserved trees shall be installed securely before commencing root cutting, tree pruning or any other works that may affect the stability of the trees. Before commencing installation of these measures, the Contractor shall submit the method statements of these measures to the Engineer for approval. The Contractor shall commence installation of the support measures only after the Engineer's approval to the method statements has been given.

(3) The physical support for the preserved trees shall be securely founded in footings independent of existing walls or building structures or in other supporting systems as appropriate, without interfering with other works, other existing features, and the preserved trees. Where the affected tree is growing on a retaining structure, the Contractor shall make a detailed assessment to estimate the weight of the tree and identify the best position of supporting the tree in relation to its overall spread and centre of gravity. The method statements of the support measures designed by the Contractor in respect of the trees growing on retaining structures shall include the following information:

**Protection of preserved** 26.13 trees from instability



Appendix Ib of RNTPC Paper No. Y/SK-HC/5

#### (Est. 1995) ALBERT SO SURVEYORS LTD.

Your Ref.: TPB/Y/SK-HC/5 Our Ref.: AS024/17/III/114 9 February 2023

By Hand and Electronic Communication

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

Dear Sir/Madam,

Submission of 1<sup>st</sup> Further Information Application for Amendment of Plan under Section 12A from "Conservation Area" and "Village Type Development" to "Village Type Development" for a New Territories Exempted House Development Lot No. 764 in D.D. 249 and Adjoining Government Land <u>Wang Che, Sai Kung, New Territories</u> (Planning Application No. Y/SK-HC/5)

Thank you for the comments on the captioned application received from Water Supplies Department on 30 January 2023. As a preliminary response to the comments, we hereby submit 4 copies of the 1<sup>st</sup> Further Information comprising the Response-to-Comments table and the appendices for your kind consideration and circulation.

Should you have any enquiries, please contact the undersigned, our Dr. Tsz-choi Wong or Mr. William Wong at 2882 3183 for further discussion. Thank you.

Yours faithfully, For and on behalf of ALBERT SO SURVEYORS LTD.

Albert So Managing Director

Encls. 4 copies of Response-to-Comments table with Appendix A – Replacement Page of Supporting Planning Statement Appendix B – Revised Sewerage Impact and Risk Assessment Report

c.c. Client (by email) DPO/SK&I (by email; Attn: Mr. Matthew Tai)

AS/TC/ww/cl \\ASSL\2017\AS02417\AS024'17'III'114.docx

P. 1 of 1

估價、相售、規劃及發展顧問 董事總經理》蘇振顯 地產代理(公司牌照號碼:C-007868)

Regulated by RICS 香港九龍宮塘海濱道133號萬兆豐中心17樓H2室 電話:(852) 2882 3183 圖文傳真:(852) 2882 2810 Unit H2, 17/F., MG Tower, 133 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong Tel: (852) 2882 3183 Fax: (852) 2882 2810 Email: mail@assl.com.hk VALUERS, ESTATE AGENTS, PLANNING & DEVELOPMENT CONSULTANTS Managing Director: ALBERT SO PhD, MBA, BSC, FRICS, FHKIS, FHIREA, MRTPI

#### **1st Further Information**

Application under Section 12A of the Town Planning Ordinance

Rezoning from "Conservation Area" and "Village Type Development" to "Village Type Development" for a New Territories Exempted House Development Wang Che, Sai Kung (Application No. Y/SK-HC/5)

#### **RESPONSE-TO-COMMENTS TABLE**

ltem	Departmental Comments	Responses		
WSD	Chief Engineer/Construction, Water Supplies Department ("WSD")			
	- Contact Person: Ms. Ruby HU (Tel: 2152 5719)			
	- Via Email dated 30 Jan 2023			
WSD 1	(a) Para. 4.2 of SI&RA Report:			
	The applicant should indicate in the submission whether all	All of the pipes for sewage leakage prevention will be		
	drains and sewers in the proposed development are watertight.	watertight.		
		Section 4.2.2 of the SI&RA Report at Appendix B has been revised to: -		
		"All sewer pipes including indoor floor drains shall be made of		
		cast iron or other approved material with sealed joints and		
		hatched boxes."		
WSD 2	(b) Para. 4.3.1 of SI&RA Report:			
	It is noted that the concrete underground room where the	Noted.		
	sewage holding tank is placed, will be partially erected			
	below the groundwater table. In this regard, as the principle	The applicant will conduct a ground investigation survey of the		
	of multiple-barrier approach to safeguarding raw water	subject site during detail design stage to identify the level of		
	quality including groundwater quality within WGG, the	groundwater table. The underground room will be erected		
	applicant is advised to determine the level of groundwater	above the identified groundwater table as far as practicable.		
	table by conducting a ground investigation survey of the	Section 4.3.1 of the SI&RA Report has been revised accordingly.		
	subject site, so that the underground sewerage facilities can			
	be designed and/or erected above the groundwater table as			
	tar as practicable.			

#### 1st Further Information

#### Application under Section 12A of the Town Planning Ordinance

Rezoning from "Conservation Area" and "Village Type Development" to "Village Type Development" for a New Territories Exempted House Development Wang Che, Sai Kung (Application No. Y/SK-HC/5)

ltem	Departmental Comments	Responses
WSD 3	(c) Para. 4.5.4 of SI&RA Report:	
	The applicant should clarify the responsible agent(s) for	The occupants will be responsible for the routine operation of
	routine operation and maintenance of the proposed	the sewage holding tank system which will be kept powered on.
	Programmable Logic Controller.	Corresponding actions will be taken by the occupants according to the O&M manual when there are warning signal(s).
		The routine inspection (including the PLC system) will be performed by independent checker, and a contractor will be appointed to perform the maintenance works.
		Sections 5.1.3 & 5.4.5 of the SI&BA Report at Appendix B have
		been revised accordingly.
WSD 4	(d) Para. 6.2.2 of SI&RA Report:	
	The applicant should take note that all chemical storage	Noted.
	areas shall be enclosed to avoid chemical contamination to	
	surface runoff within WGG at all times.	
WSD 5	(e) Para. 6.3.3 of SI&RA Report:	
	It is noted that the applicant undertakes no outdoor activities	The activities on the rooftop will be non-polluting in nature,
	including gardening and vehicle parking on site, as well as	such as doing exercise and drying clothes in the sun.
	no discharge of household wastewater and no storage of	
	chemicals in outdoor area including the rooftop. Further to	The occupants will keep the pet(s), if any, indoor and prevent
	the undertakings, the applicant should clarify the activities	the pet(s) entering the rooftop by installing a normally closed
	if any to be conducted on the rooftop. Besides, the applicant	lockable door at the rooftop.
	should also clarify whether there will be any pet keeping on	
	site, and if affirmative provide control and mitigation	Section 6.3.3 of the SI&RA Report at Appendix B has been
	measures against water pollution arising from animal	revised accordingly.
	manure within WGG.	

#### 1st Further Information

#### Application under Section 12A of the Town Planning Ordinance

Rezoning from "Conservation Area" and "Village Type Development" to "Village Type Development" for a New Territories Exempted House Development Wang Che, Sai Kung (Application No. Y/SK-HC/5)

ltem	Departmental Comments	Responses
WSD 6	(f) Signage for alerting not to pollute WGG should be displayed	"Signage for alerting not to pollute WGG should be displayed
	on site.	on site to remind the workers." and "Signage for alerting not to
		pollute WGG should be displayed on site to remind the
		occupants." have been added to Sections 6.2.4 & 6.3.10.
		Please refer to the revised SI&RA Report at Appendix B for
		details.
WSD 7	(g) Textual amendments are suggested below.	Noted. Para 5.13 has been revised accordingly.
	- Para. 5.13 of SPS: Please consider to replace "immaterial	
	impact on the water quality of the WGG" with "no material	Please refer to the replacement page of Supporting Planning
	increase in pollution effect within WGG".	Statement at Appendix A for details.
WSD 8	- Para. 2.1.2 of SI&RA Report: "three stories" should read	Noted. The relevant paragraph of the SI&RA Report has been
	"three storeys".	revised accordingly. Please refer to Appendix B for details.
WSD 9	- Para. 4.4.7 of SI&RA Report: "early state" should read	Ditto.
	"early stage".	
WSD 10	- Para. 5.4.8 of SI&RA Report: "lift cycle" should read "life	Ditto.
	cycle".	
WSD 11	- Para. 6.1.2 of SI&RA Report: "location in WGG" should read	Ditto.
	"located in WGG".	
WSD 12	- Para. 7.1.1 of SI&RA Report: It appears that the paragraph	Section 7.1.1 of the SI&RA Report has been revised as follows.
	has not been written to our full understanding. Please	
	revise.	"The potential water pollutant risk has been summarized and
		the likelihood and consequence of each identified potential
		water pollutant risk have been evaluated."

# **APPENDIX A**

Replacement Page of Supporting Planning Statement



leasehold rights of the Applicant. The approval of the Subject Application should not result in any unanticipated impact to the surrounding area.

#### No Insurmountable Environmental Impact

5.8 To evaluate the potential environmental impact brought by the Proposed NTEH, a tree survey report and a sewerage impact and risk assessment report have been conducted. Based on the results of the reports, corresponding measures are proposed to ensure no insurmountable environmental impact will be induced.

#### <u>No Tree Felling</u>

- 5.9 A tree survey report has been conducted.
- 5.10 According to the report, there is no tree within the Site. 12 trees were found within or around the slope stabilization works boundary, but no tree felling would be required as the works would only involve the use of soil nails and does not involve any excavation works. The Applicant will adhere to the guidelines suggested in the report to protect the retained trees during the construction and after the completion of the Proposed NTEH.
- 5.11 A copy of the full tree survey report is attached at <u>Appendix E</u>.

#### Neglectable Impact towards Water Gathering Ground

- 5.12 As detailed in Paragraphs 4.9 4.11, a sewerage impact and risk assessment has been conducted. According to the suggestions in the report, all sewerage generated by the Proposed NTEH is proposed to be stored in an underground holding tank and cleared for further treatment outside the WGG and will not cause any environmental pollution.
- 5.13 The proposed arrangement avoids the use of septic tank which is not encouraged in WGG under current policy and is a more environmentally friendly method causing no material increase in pollution effect within WGG.

# **APPENDIX B**

**Revised Sewerage Impact and Risk Assessment** 

# Lot No. 764 in D.D.249 and Adjoining Government Land Wang Che, Sai Kung, New Territories

# Sewerage Impact and Risk Assessment (Version 2.1)

February 2023

Certified By	Mer	
	(Project Director: Dr. HF Chan)	
REMARKS:		

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

#### CINOTECH CONSULTANTS LIMITED

Room 1710, Technology Park 18 On Lai Street Shatin, NT, Hong Kong Tel: (852) 2151 2083 Fax: (852) 3107 1388 Email: info@cinotech.com.hk

# TABLE OF CONTENTS

1	INTRODUCTION1
1.1	BACKGROUND1
2	THE PROJECT
2.1	The Project
2.2	THE APPLICATION SITE
3	SEWEAGE ESTIMATION AND PROPOSED SEWAGE HOLDING TANK CAPACITY 3
3.1	SEWEAGE ESTIMATION
3.2	PROPOSED SEWAGE HOLDING TANK CAPACITY
4	MEASURES TO SEWAGE LEAKAGE/OVERFLOW – DESIGN ASPECT 4
4.1	OVERVIEW
4.2	SEWAGE PIPELINES
4.3	The Underground Room
4.4	THE SEWAGE HOLDING TANK
4.5	SEWAGE LEVEL AND LEAKAGE MONITORING SYSTEM 5
4.6	PREVENTION OF WATER INGRESS TO THE ROOM AND SEWAGE OVERFLOW TO OUTDOOR AREA 7
5	MEASURES TO SEWAGE LEAKAGE/OVERFLOW – MANAGEMENT ASPECT 8
5.1	OVERVIEW
5.2	OPERATION OF THE SEWAGE LEVEL AND LEAKAGE MONITORING SYSTEM
5.3	REGULAR/NON-REGULAR SEWAGE REMOVAL AND DESLUDGING
5.4	REGULAR INSPECTION AND MAINTENANCE10
5.5	EMERGENCY RESPONSE PLAN11
5.6	CONTINGENCY PLAN FOR OCCUPANTS
6	MINIMIZATION OF POTENTIAL ENVIRONMENT IMPACT
6.1	INTRODUCTION
6.2	CONSTRUCTION PHASE
6.3	OPERATION PHASE
7	WATER POLLUTION RISK ASSESSMENT17
8	CONCLUSION

# LIST OF TABLES

Table 3-1	Sewage Flow from the Site	3
Table 5-1	List of Warning Related to the Water Sensors	9

# LIST OF FIGURES

Figure 1-1	Site Location Plan
Figure 1-2	Outline Zoning Plan
Figure 2-1	The Application Site
Figure 4-1	Proposed Design of the Sewage Holding Tank System

# LIST OF APPENDICES

Appendix 2-1	Site Formation Plan
Appendix 6-1	Conditions for Working within Gathering Ground
Appendix 6-2	Conditions for Working in the Vicinity of Waterworks Installation
Appendix 7-1	Potential Risk, Precautionary Measures and Risk Assessment

#### **1 INTRODUCTION**

#### 1.1 Background

- 1.1.1 The registered owner (the Applicant) of Lot No. 764 in D.D. 249 (the Subject Lot) submitted a Section 12A Amendment of Plan Application to Town Planning Board (TPB) to allow the proposed Small House and site formation works at the Subject Lot and adjoining Government land in Wan Che, Sai Kung (the Application Site).
- 1.1.2 The Site currently falls within an area zoned mainly "Conservation Area" ("CA") and partly "Village Type Development" ("V") under the Approved Ho Chung Outline Zoning Plan No. S/SK-HC/11(the OZP). The Applicant proposes to rezone the Site from mainly "CA" and partly "V" to wholly "V" in order to allow him to build a Small House and carry out site formation works on the Site. The Site is about 123.25 square metres and accessible via an unnamed village road branched off from Ho Chung Road. It is located within the established village environs of a recognised village, namely Wang Che Village of Sai Kung.
- 1.1.3 The location of the Application Site is shown in Figure 1-1, and the zoning of the Application Site is illustrated in Figure 1-2.
- 1.1.4 Cinotech Consultants Limited was commissioned by the Applicant to conduct a Sewerage Impact and Risk Assessment for the planning application submission.

# 2 THE PROJECT

### 2.1 The Project

- 2.1.1 The Project involves construction of a village house in the private Lot No. 764 in D.D. 249; land formation works and drainage channels laying work in the adjoining Government land; as well as slope stabilization works and drainage channels laying works for the slope in the south of the Lot No. 764 in D.D. 249. The corresponding work areas are marked in Figure 2-1. A Site Formation Plan is provided in Appendix 2-1.
- 2.1.2 A typical three storeys village house will be adopted with some design modification to accommodate a proposed underground sewage holding tank system, which will be described in the later Chapters. It should be noted that the proposed village house, including the proposed underground sewage holding tank, will be confined within the Lot No. 764 in D.D. 249 and not occupying any government land.

#### 2.2 The Application Site

- 2.2.1 The Application Site is located in a rural area including the private lot No. 764 in D.D. 249 and the adjoining Government land as shown in **Figure 2-1**. The Application Site is located in rural area but not covered by "V" zone. The developments in the vicinity are mostly village houses (Wang Che Village).
- 2.2.2 The Application Site is currently vacant thus no demolition works are required. It should be noted that the elevation of the western portion of lot No. 764 in D.D. 249 (~92mPD) is higher than that of the footpaths in east (~90mPD) and in south(~90-91mPD). After the site formation (**Appendix 2-1**), the elevation of the whole lot No. 764 in D.D. 249 will be ~92mPD. During operation of the proposed village house, only the adjoining government land in the west is having similar elevation (~92mPD) of No. 764 in D.D. 249.
- 2.2.3 The Application Site falls within water gathering ground (WGG). According to Section 5.3.13 Water Gathering Grounds, Chapter 9 of Hong Kong Planning Standard and Guidelines, sewage should be discharged into public sewers or treated by sewage treatment plant. Use of septic tank and soakaway systems should be avoided. However, the Application Site and its vicinity are not served by the public sewer. Although the existing village houses adopt septic tank and soakaway systems, the Applicant agrees to adopt a more environmentally friendly method to handle sewage instead of septic tank to protect water quality of the WGG.
- 2.2.4 For a single house development for 2 persons only (i.e.: the Applicant and his wife), installation of an onsite sewage treatment plant is not cost effective. A reasonable solution for this small-scale development is to temporarily store the sewage underground and arrange a registered contractor to remove the sewage for offsite treatment regularly. The following chapters detail the proposed sewage holding tank and maintenance works to be implemented.
- 2.2.5 When public sewer is available near the Site in the future, the applicant shall connect the whole of the foul/sewage system to the public sewers.

# **3** SEWEAGE ESTIMATION AND PROPOSED SEWAGE HOLDING TANK CAPACITY

#### 3.1 SEWEAGE ESTIMATION

- 3.1.1 The proposed village house is a 3-storey village type house. According to the Applicant, the designed population is 2 persons. To cater for the potential expansion of the family, it is assumed that each floor will have two family members, giving a total of 6 persons.
- 3.1.2 According to Table T-1 of Environmental Protection Department (EPD)'s Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning (Version 1.0), the planned unit flow factor for planned Modern Village is 0.270 m<sup>3</sup>/day. For a 6 persons village house, the daily discharge shall be ~1.62 m<sup>3</sup> and the weekly discharge shall be ~11.34m<sup>3</sup>.

#### **3.2 PROPOSED SEWAGE HOLDING TANK CAPACITY**

- 3.2.1 As there is no nearby public sewer and the site falls within WGG, an underground holding tank is proposed to store the sewage generated from the proposed development. The underground holding tank will be placed in an underground room beneath the proposed house.
- 3.2.2 The holding tank would be cleared weekly by a registered contractor by tankering away all sewage and sludge for treatment outside the WGG. No discharge of sewage into adjoining land, storm water drain, channel, stream or river course will be allowed. Therefore, the holding tank should have sufficient capacity to store the sewage generated in 7 days as minimum.
- 3.2.3 The volume of the holding tank is proposed to be 34 m<sup>3</sup>, which is sufficient for storing two weeks of generated sewage, with considering a safety factor of 1.5 to account for variation of water consumption and water leakage accidents. The estimated sewage discharge from the proposed development is summarised in **Table 3-1**.

Туре	Unit Flow Factors <sup>[1]</sup> (m <sup>3</sup> /day/per son)	No. of Residents	Weekly Sewage Discharge (m <sup>3</sup> )	Safety Factor	Weekly Sewage Volume (m <sup>3</sup> )	Proposed Holding Tank Volume (m <sup>3</sup> )
Residential	0.27	6	11.34	1.5	17	34

Table 3-1Sewage Flow from the Site

[1] EPD's Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning Version 1.0 defining unit flow factors.

### 4 MEASURES TO SEWAGE LEAKAGE/OVERFLOW – DESIGN ASPECT

#### 4.1 Overview

- 4.1.1 To safeguard the underground water quality, a number of measures are considered to prevent potential sewage leakage through careful design and management measures.
- 4.1.2 Various design considerations have been incorporated into the preliminary design of the sewage holding tank system not only to minimise the potential risk of sewage leakage or overflow but also to provide necessary equipment for a smooth on-going operation.
- 4.1.3 The measures include: material selection, pipe alignment, provision of leakage/level sensor & warning system, as well as provision of a bund wall. The details of each consideration are detailed in the following paragraphs. A tentative preliminary sewage holding tank design is illustrated in **Figure 4-1**.

#### 4.2 Sewage Pipelines

- 4.2.1 Both pipeline material and alignment should be carefully designed to minimise the risk of potential leakage.
- 4.2.2 All sewer pipes including the indoor floor drains shall be made of cast iron or other approved material with sealed joints and hatched boxes.
- 4.2.3 All sewer pipes shall be located within building footprint to ensure that any potential leakage will be collected by the indoor floor drain(s) and reach the underground holding tank.

#### 4.3 The Underground Room

- 4.3.1 The underground room will likely be partially below the water table, therefore, providing a waterproof room is essential not only for ensuring the potential leaked sewage from the holding tanks will not enter the underground water system but also prevent the underground room flooded by the underground water. The applicant will conduct a ground investigation survey of the subject site during detail design stage to identify the level of groundwater table. The underground room shall be erected above the identified groundwater table as far as practicable.
- 4.3.2 A practical way to prevent leakage is to apply non-seeping material and/or membrane to the floor and walls of the underground room during construction. Leakage test shall be performed upon construction to confirm the integrity of the wall and floor before placing the holding tank into the room.
- 4.3.3 When leakage has been detected during testing or during operation phase, the leakage shall be rectified as soon as possible according to the maintenance manual.
- 4.3.4 A pair of water sensors shall be provided at the lowest points of the room for the detection of water. If water is detected in the room, warning signal will be triggered to notify the user for inspection. An associated water pump shall also be provided to pump the water in the room to the tank.
- 4.3.5 The room shall provide sufficient space (at least 1m width) for access door/platform and maintenance work. The room shall also have sufficient volume for buffering ~1 week volume of sewage (17m<sup>3</sup>) in case of leakage.

#### 4.4 The Sewage Holding Tank

- 4.4.1 The sewage holding tank shall be a double-layered polypropylene tank. The double layer design can prevent any crack propagate to another layer thus the chance of leakage will be greatly reduced.
- 4.4.2 The double layer design can also provide longer time between noticeable damage occurred and sewage leakage, thus more time is available for arranging temporary repair or replacement.
- 4.4.3 Level sensors shall be mounted at various levels for monitoring the sewage level (to be explained in **Section 4.5**).
- 4.4.4 Access door shall be provided for inspection or desludging.
- 4.4.5 The vent pipe shall be equipped with rain cap to prevent ingress of rainwater into the tank.
- 4.4.6 Leakage test shall be performed upon construction to confirm the integrity of the sewage holding tank before operation.
- 4.4.7 The feasibility of providing dual tank system has been explored in early stage but found to be not practical for this scale of project (a single village house). The extra complexity of the system will likely add more risk for the operation of the sewage holding system.

#### 4.5 Sewage Level and Leakage Monitoring System

- 4.5.1 To facilitate display of the signal from the sensors, a control panel with programmable logic controller (PLC), display screen, indicator light bulbs, and audible and visual alarm shall be provided. Pairs of water sensors shall be provided at the lowest points of the room as well as various level (25%, 50%, 70% and 85% full) in the sewage holding tank.
- 4.5.2 The control panel shall be able to determine any fault signal and broken sensor by comparing the status of sensor signal, or at least able to provide warning signal to inform the occupants for arranging an inspection. For example, when both of the 50% level sensors have been triggered, if one or both of the 25% level sensor is not triggered, it is likely that at least one of the sensors is not working properly thus inspection and maintenance shall be scheduled.
- 4.5.3 The details of the hardware of the Sewage Level and Leakage Monitoring System will be present in following paragraphs while the operation of the monitoring system will be presented in the Management Sections.

#### Programmable Logic Controller (PLC)

- 4.5.4 A PLC system shall be provided for flexible system where the program can be updated as suited. The PLC shall have the ability to provide the following functions: -
  - Identify potential issue from the sensors signal;
  - Control the alarm, indicator lights, & water pump;
  - Self-error checking function (for faulty sensor);
  - Auto power-on after recovery from power-outage;
  - Allow replacement of sensor/alarm without system shutdown; &
  - Any modification to the program shall be password or key protected.

#### Display Screen

- 4.5.5 The display screen shall provide interactive interface for accessing the followings: -
  - Show the status of each physical light indicator (for trouble-shooting),
  - Show the type and location of on-going warning, and provide instruction to the occupants and maintenance staff,
  - Provide interface to turn off warning alarm (password required),
  - Provide interface to turn off the system (password required),
  - Provide interface to unlock the system for overwriting the PLC program (password required).
- 4.5.6 In case touch screen has been adopted as the major input method, a separated physical power off switch for the monitoring system shall be provided for avoiding unintentional system shutdown.
- 4.5.7 Emergency system shutdown switch near the control panel shall be protected by physical key to avoid unauthorised showdown. Otherwise, system shutdown shall be conducted using the main circuit breaker of the house.

# Light Indicator

- 4.5.8 Individual physical light indicator shall be provided to indicate the following: -
  - Power on/off status;
  - Status of each water/sewage sensor (on/off);
  - Warning Indicator (for inspection);
  - Warning Indicator (for sewage removal); &
  - Warning Indicator (for emergency).
- 4.5.9 The individual physical light indicator can provide a quick way for the occupant to identify the status of the sewage holding system for quick action.

#### Audible and Visual Alarm

4.5.10 Audible and visual alarm shall be installed in both the living area and underground room for informing the occupants and inspector. Additional battery powered visual alarm, similar to emergency light, shall be provided to indicate the breakdown/power-off of the monitoring system.

#### Water/ Sewage Level Sensors

- 4.5.11 A pair of water level sensors or sewage level sensors shall be provided at each sensing location. The pair of sensors is planned to operate concurrently to prevent the chance of faulty signal. For example, if one of the sensors in the pair has been triggered, the system will consider the water level has reached that location as the sensor elevation could be slightly different. If the pair of sensors are out-of-sync for an extended time, warning signal shall be provided on the control panel to inform the occupants.
- 4.5.12 A third standby sensor at each sensing location is not recommended as it will induce extra complexity to the system which will increase the chance of system bugs. Instead, prompt

replacement of faulty sensor without system shutting down is the key idea to provide longterm ono-going monitoring system. Therefore, selection of sensors mounting shall make easy sensor replacement a priority as it can enable quick replacement of sensors after the sewage from the tank has been removed without shutting down the whole system.

#### 4.6 Prevention of Water Ingress to the Room and Sewage Overflow to Outdoor Area

- 4.6.1 The ground elevation of the house is higher than that of the access road in east and south; and only the adjoining government land in the west is at the same elevation. Drainage channels surround the lot of the proposed house in all three available directions. The landscape and drainage channels after the site formation are shown in **Appendix 2-1**.
- 4.6.2 With sufficient drainage system, it is expected that no accumulation of large amount of surface runoff near the house during rainstorm is anticipated. Therefore, providing the access door/opening of the underground room either within building or surrounded by bunded wall with cover are sufficient to prevent water ingress to the underground room. For conservative design, the access door/opening of the underground room shall not be placed near the west boundary of the lot.
- 4.6.3 For small amount of ingress water, a pump will be provided at the lowest point in the room to pump to the water into the sewage holding tank.
- 4.6.4 With the same principle, locating the sewage holding tank indoor with paved waterproof ground and walls, with sufficient buffer volume, well-designed access door, and/or bunded wall with cover, any leakage from the tank or during desludging will not flow to outdoor area.

#### 5 MEASURES TO SEWAGE LEAKAGE/OVERFLOW – MANAGEMENT ASPECT

#### 5.1 Overview

- 5.1.1 Although the necessary hardware will be provided, a good and reasonable on-going operation and maintenance strategy is essential for a sustainable system.
- 5.1.2 For an effective and systematic management, an Operation and Maintenance Manual (O&M Manual) shall be prepared during the detailed design stage of the sewage holding system. The Standard Operation Procedure (SOP) for various situations, including maintenance procedure, shall also be included in the O&M Manual.
- 5.1.3 The routine operation of the sewage holding tank system is responsible by the occupants. As the occupants are not expected to possess technical knowledge nor fully understand the O&M Manual, the sewage holding system shall be configured to display all necessary information for the occupants such as "arranging an additional sewage removal service" or "stop producing sewage". In addition, a contingency plan shall be prepared during the detailed design stage for providing instruction to the occupants when system breakdowns. The occupants are reminded to keep the system powered on and perform corresponding actions according to the O&M manual when there are warning signal(s).
- 5.1.4 The O&M Manual shall include the followings area: -
  - Operation of the Sewage Level and Leakage Monitoring System;
  - Regular/Non-regular Sewage Removal;
  - Regular Inspection and Maintenance; and
  - Emergency Response Plan
- 5.1.5 The key items of each area of are described in the following paragraphs.

#### 5.2 Operation of the Sewage Level and Leakage Monitoring System

5.2.1 As mentioned in Section 4.5.1, the Sewage Level and Leakage Monitoring System shall contain a control panel with programmable logic controller (PLC), display screen, indicator light bulbs, and audible and visual alarm as well as are pairs of water sensors provided at the lowest points of the room as well as various level (25%, 50%, 70% and 85% full) in the sewage holding tank.

#### Logic of the Sensor System & Self-error Detection

- 5.2.2 There are five pairs of water sensors in the system. One pair is located at the lowest location of the underground room and 4 pairs in the sewage holding tank.
- 5.2.3 For minimising the risk of leakage/overflow, both sensors in the pair will be in duty concurrently. If either one of the pair is triggered, the system will consider that there is water in that location.
- 5.2.4 When the pair of sensors is out of sync for an extended period of time, say 24 hours, it is likely that at least one sensor or its transmission is not working properly. Warning signal including the ID or location of the potential faulty sensors shall be displayed on the screen to inform the occupants and maintenance staff. Similarly, when there is contradiction in the sensor signals, e.g.: the sensors at higher level have been triggered before the sensors in lower

level, a warning signal including the ID or location of the potential faulty sensors shall be displayed on the screen to inform the occupants and maintenance staff.

5.2.5 Besides the warning signals for self-error detection, there are four warning signals for normal operation. One of the warnings will be triggered by the water sensor at the lowest location of the room. The other warning will be triggered by various sewage levels in the sewage storage tank as listed in **Table 5-1**. It should be noted that the required action and warning message shall be displayed on the screen of the control panel to remind the occupants until the warning signal wears off. The warning signal will only be worn off by reducing the sewage level below 25% mark.

Warning Signal	Triggered Condition	Worn Off Condition	Action by the System
Potential Leakage	ntial Leakage Water is detected in the Room Room		Trigger warning signal
Tank 50% Full	Sewage is detected at 50% location		Trigger warning signal and message
Tank 70% Full	Sewage is detected at 70% location	Sewage is not detected at 25%, 50%, 70% & 85%	Trigger warning signal and message Trigger Alarm (can be turned off by the occupant) Replace the 50% Full warning
Tank 85% Full	Sewage is detected at 85% location	locations	Trigger warning signal and message Trigger Alarm (cannot be turned off by occupant) Replace the 50% & 70% Full warning

Table 5-1	List of Warning Related to the Water Sensors
	List of warming Related to the water Schools

Note: Self-error detection warning not included.

5.2.6 When there is a power outage and/or system breakdown, i.e.: no signal output from the monitoring system, the battery power visual alarm, as stated in **Section 4.5.10**, shall be switched on automatically to inform the occupants for arranging emergency checking and maintenance.

#### 5.3 Regular/Non-regular Sewage Removal and Desludging

- 5.3.1 As shown in **Table 3-1**, the sewage holding tank is designed to hold 2 weeks volume of sewage under reasonable worst scenario (6 persons instead of 2 persons). During normal operation, the weekly sewage should occupy around 50% of the tank or less. The occupants shall arrange regular weekly sewage removal with a contractor. The sewage removal shall be performed by connecting the sewage pumping pipe from sewage suction truck to the connector of the pumpout pipe of the sewage holding tank to minimum potential odour release during sewage pumping. The occupants shall keep the sewage removal records for inspection in future.
- 5.3.2 Normally, the sludge at the bottom of the sewage holding tank shall be removed together with the stored sewage during sewage removal process. However, there is still some case that some sludge will stay at bottom/corner of the tank, reducing the effective capacity of the sewage holding tank. When the sludge accumulated to certain amount, desludging shall be performed by placing the sewage pumping pipe from the sewage suction truck directly into the bottom/corner of the sewage holding tank to pump out the sludge. An access of the

holding tank has been prepared for this purpose. It should be noted that desludging shall be conducted only when necessary, i.e.: when suggested by the sewage removal contractor or instructed by the checker. The occupants shall keep the desludging records for inspection in future.

- 5.3.3 Besides the regular weekly sewage removal, the occupants shall conduct the following actions when the warning signal and message have been triggered: -
  - When the sewage holding tank reaches 50% full, warning signal (light indicator only) will be triggered and the occupants shall arrange an early sewage removal service for that week.
  - When the sewage holding tank reach 70% full, warning signal (light indicator, as well as the audible and visual alarms) will be triggered and the occupants shall arrange an addition sewage removal service as soon as possible. The audible and visual alarms (but not the warning indicator) can be switched off by occupants in this case. However, as this water level is not expected under normal circumstance, the occupant is advised to check the water fixture for potential leakage.
  - When the sewage holding tank reach 85% full, warning signal (light indicator, as well as the audible and visual alarms) will be triggered and the occupants shall arrange an addition sewage removal service as soon as possible. The audible and visual alarms <u>cannot</u> be switched off by occupants in this case. As the occupants will be the first victims from the smell and hygiene issue due to potential sewage overflowing from the tank, the occupants shall stop producing any sewage until the sewage in the tank has been removed.
- 5.3.4 It should be noted that the required action and warning message shall be displayed on the screen of the control panel to remind the occupants until the warning signal wears off. The warning signal shall be worn off after the sewage level is below 25% mark.

#### 5.4 Regular Inspection and Maintenance

5.4.1 Regular inspection and maintenance are the key items in the longevity of the sewage holding system. Minor issues in the system could be identified and resolved before the issue become a disaster that requires an emergency response. The occupants are reminded to strictly fulfil the inspection and maintenance requirements.

#### Routine Inspection by Independent Checker

- 5.4.2 Monthly inspection by an independent checker is required to ensure the integrity of the holding tank. The inspection results will be prepared, for Water Supplies Department (WSD) and Planning Department (PlanD) checking, at quarterly interval.
- 5.4.3 During the inspection, the priority is to identify any leakage/spillage from the sewage holding tank and/or walls of the underground room. Depending on the degree of leakage/spillage, the checker shall decide the necessity of declaring an emergency according to the O&M Manual.
- 5.4.4 The independent checker shall also check the warning records, identify the potential sources of warnings, and schedule the next maintenance to address the potential issues according to the O&M Manual.

Scheduled Maintenance

- 5.4.5 All of the issues identified during the inspection shall be addressed in a timely manner. The occupants shall appoint a contractor to perform the maintenance works.
- 5.4.6 The maintenance usually involves replacement of parts as well as seal-up of the crack on the sewage storage tank or walls. As the PLC will be designed for allowing replacement of sensor/alarm without system shutdown, most of the maintenance works, including replacement of sensors and alarm can be conducted once the sewage has been removed. No system shutdown shall be required.
- 5.4.7 There are some maintenance works that require system shutdown, such as replacement of a completely broken sewage storage tank or replacement of the PLC unit. In such case, the occupants shall not generate any sewage during the maintenance period. Replacement of PLC unit could be completed in a few hours, but replacement of the sewage holding tank will require days or weeks. The occupants shall temporarily live in another house or hotel until the maintenance is completed.
- 5.4.8 The occupants shall be reminded to strictly fulfil the inspection and maintenance requirements to prevent/identify any potential leakage and prevent the system from being beyond repair in early life cycle.

#### 5.5 Emergency Response Plan

- 5.5.1 Emergency Response Plan shall be prepared during the detailed design stage as part of the O&M Manual for handling accidental leakage/spillage and/or system breakdown.
- 5.5.2 The following items shall be included in the Emergency Response Plan: -
  - Stop generating sewage, i.e.: stop using the toilet and the kitchen, to prevent generation of extra sewage, until the leakage/spillage has been resolved;
  - Notify WSD and PlanD within 24 hours;
  - Call a licensed contractor to tanker away the sewage and clean up the underground room;
  - Ask the licensed contractor to conduct necessary repair/replacement to rectify the leakage/spillage; and
  - Ask the licensed contractor to investigate the cause of leakage/spillage and make change to the system (including both hardware and management changes) when necessary to prevent future leakage.

#### 5.6 Contingency Plan for Occupants

- 5.6.1 As stated in **Section 5.1.3**, a contingency plan shall be prepared for providing instruction to the occupants when system breakdown.
- 5.6.2 As it is also possible that the display of the monitoring system malfunctions, the corresponding actions for each warning, as described in **Sections 5.2 & 5.3**, when the system is operating normally shall also be included.

- 5.6.3 The contingency plan shall contain the followings: -
  - A list of contact person (e.g. inspector, licensed contractor, WSD/PlanD, etc...);
  - Corresponding actions for each warning when the system is operating normally;
  - Corresponding actions for system breakdown; &
  - Corresponding actions for significant leakage, i.e.: emergency situations.

# 6 MINIMIZATION OF POTENTIAL ENVIRONMENT IMPACT

#### 6.1 Introduction

- 6.1.1 Other than the sewage leakage during the operation of the sewage holding system, there are other potential environment issues during construction and operation of the proposed house.
- 6.1.2 As the Application Site is located in WGG, the water quality impact related item, such as surface run-off during both construction and operation shall be the priority to be addressed. In addition, the potential odour issue arising from the operation of the sewage holding tank and household activities shall also be discussed.

#### 6.2 Construction Phase

- 6.2.1 Construction site runoff should be prevented or minimized in accordance with the guidelines stipulated in the ProPECC PN 1/94 published by the EPD, which includes but not limited to the followings:
  - Provide sufficient chemical toilets with regular maintenance by licensed collector where necessary.
  - Channels, earth bunds or sand bag barriers should be provided on site to direct stormwater to sand/silt removal facilities. Where necessary, perimeter channels should be provided at the Site boundary to intercept storm-runoff from outside the site. These shall be implemented in advance of construction work.
  - Sand/silt removal facilities such as sand traps, silt traps and sediment basins shall be provided to remove sand/silt particles from runoff to meet the requirements of the Technical Memorandum standard under the Water Protection Control Ordinance (WPCO). These facilities shall be properly and regularly maintained.
  - Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation in soil could not be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporarily exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest/edge of excavation) to prevent storm runoff from washing across exposed soil surfaces.
  - Trench digging work should be minimized and the trenches should be backfilled in short sections during wet season.
  - Rainwater pumped out from trenches/foundation excavations, groundwater pumped out from wells, as well as groundwater seepage pumped out of tunnels/caverns under construction should be discharged into storm drains via silt removal facilities.
  - Water used in ground boring and drilling should be recirculated as far as practicable after sedimentation. The wastewater should be discharged into storm drains via silt removal facilities.
  - Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.

- The Contractor should implement the Precautions/Actions relating to rainstorms as summarized in Appendix A2 of ProPECC PN 1/94.
- Open stockpiles of materials on site shall be covered with tarpaulin or similar fabric during rainstorms.
- Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.
- Wastewater from building construction works like cleaning of works, concreting and similar activities shall not be discharged into the storm drains. The wastewater shall be treated by the silt removal facilities to remove settleable solids and pH adjustment before discharging into foul sewers.
- Silty runoff collected shall be treated by sedimentation up to the standard stipulated in the water discharge license issued by EPD. Only that effluent can be discharged into the designated discharge point to safeguard the water quality in the receiving water. If discharge to stormwater system is not permitted under the WPCO, the treated water is proposed to be removed from the Site by tankers. The effluent will then be delivered to public sewage treatment plant.
- 6.2.2 The follow mitigation measures for potential leaked oil and chemical should be applied to construction phase:
  - Oil interceptors and/or grease trap shall be provided in the drainage system. They shall be emptied regularly to prevent the release of oil and grease into water drainage system after accidental spillages. Interceptors shall have a bypass to prevent flushing during periods of heavy rain.
  - All chemicals shall be stored in suitable containers which are sealable, robust and in good condition.
  - Chemical storage areas shall have impermeable floor and bund-wall. The bund shall at least have a capacity of 110% of the volume of the largest container or 20% by volume of the chemical stored in the area, whichever is largest. All liquid collected within the bund shall be treated as chemical waste. Where possible, storage areas should be sheltered to prevent rainfall entering.
- 6.2.3 Besides the aforementioned measures, the construction shall also fulfill WSD's Conditions for Working within Gathering Ground (**Appendix 6-1**), and Conditions for Working in the Vicinity of Waterworks Installation (**Appendix 6-2**).

#### 6.2.4 Signage for alerting not to pollute WGG should be displayed on site to remind the workers.

6.2.5 The above mitigation measures will be incorporated into the tender of this proposed development to ensure that the project team will minimize the potential water quality impact.

#### 6.3 **Operation Phase**

- 6.3.1 During operation phase, the major potential environment impact arising from the proposed development are:-
  - Potential leakage of household wastewater to the outdoor area;
  - Potential leakage of household chemical to the outdoor area;
  - Potential odour impact from the exhaust vent of the sewage holding tank; &

- Potential odour impact during pumping of the sewage/sludge.
- 6.3.2 It should be noted that the Lot No. 764 in D.D. 249 will be fully occupied by the proposed house, while the outdoor area is government land. Therefore, no outdoor activity, including gardening and parking, is anticipated during operation of the house at the Application Site.

#### Leakage of household wastewater to the outdoor area

6.3.3 The outdoor area of the proposed house is within WGG, no household waste water shall be disposed or leaked to the outdoor area including the rooftop area. As stated in Section 4.6.2, no accumulation of large amount of surface runoff near the proposed house during rainstorm is anticipated. With door(s) protected by bunded wall, all indoor wastewater on the floor shall be blocked and eventually collected by the sewage storage tank via floor drains. Similarly, the wash water and other spilled water from village housing activities will also collected by the sewage storage tank via floor drains. The occupants should be reminded to never dispose any wastewater outdoor, including the roof of the building which is connected to the drainage system. Only non-polluting activity and object, such as performing exercise and placing of laundry racks are allowed. Any potential polluting activity and equipment which may induce potential leakage of pollutant (e.g., fertilizer / lubrication oil / fuel oil / any chemical) is not allowed. If pet(s) will be kept on site, the occupants shall keep the pet(s) indoor and prevent the pet(s) polluting the rooftop by installing a normally closed lockable door for the entrance of the rooftop.

#### Leakage of household chemical to the outdoor area

- 6.3.4 Household chemical such as detergent and cleaning agent are expected to be stored and used within the proposed house. The residual chemical is expected to be directly discharged to the sewage system or collected by sewage collection tank via the floor drainage. The occupants should be reminded to never store and use any chemical outdoor, including the roof of the building which is connected to the drainage system.
- 6.3.5 <u>Potential odour impact from the exhaust vent of the sewage holding tank</u>
- 6.3.6 The sewage holding system consists of a vent pipe (**Figure 4-1**) that has the exhaust located above the roof. The vent pipe will be erected high above the roof of the house, allowing the exhaust to well disperse to the open air instead of concentrating at the ground level.

#### Potential odour impact from during pumping of the sewage/sludge

- 6.3.7 As stated in **Section 5.3.1**, the pump out pipe will extend near the bottom of the holding tank to above the ground (**Figure 4-1** refers). As the bottom opening of the pipe is submerged in the sewage, this prevents release of odourous gas from the pipe when it is opened for sewage pumping. The pump out pipe section above ground will have quick connect coupling to the sewage suction truck of the licensed contractor. The sewage holding tank shall not be exposed during normal sewage removal process. This minimizes odour release to the air during sewage pumping.
- 6.3.8 During desludging, the sewage pumping pipe from sewage suction truck will be placed directly into the bottom/corner of the sewage holding tank to pump out the sludge via the access. As the frequency and duration should be limited, no odour impact is anticipated.

<u>Others</u>

6.3.9 Considering the scale and type of the proposed development, i.e.: a single village house, a waste management plan is unnecessary. Instead, the occupants are reminded to always dispose the domestic wastes and/or pet wastes to the nearest waste collection point.

6.3.10 Signage for alerting not to pollute WGG should be displayed on site to remind the occupants.

# 7 WATER POLLUTION RISK ASSESSMENT

- 7.1.1 The potential water pollutant risk has been summarized and the likelihood and consequence of each identified potential water pollutant risk have been evaluated in this chapter.
- 7.1.2 The major items of water pollutant risks arising from the proposed development are: -
  - Leakage from Indoor to Outdoor Area
  - Leakage from Sewage Pipelines to Outdoor Area
  - Leakage from the Underground Room to Groundwater
  - Leakage from the Underground Room to Outdoor Aera
  - Leakage from Sewage Holding Tank to the Underground Room caused by:
    - Flooding of Sewage Holding Tank due to Water Ingress under Heavy Rain
    - Overflowing of Sewage Holding Tank
    - o Crack, External Damage or Deterioration
    - o System Breakdown
  - Water Pollution Arising from The Construction Activities
- 7.1.3 The likelihood and consequence of the aforementioned items with the corresponding mitigation measures and monitoring are listed in **Appendix 7-1**.
- 7.1.4 Without the proposed mitigations measures, the likelihood and consequence of those items are ranging from low to high level, meaning there is a high chance to significantly pollute the WGG area. With the proposed mitigation, the likelihood and consequence of those items are expected to become low and/or non-existence level.
- 7.1.5 It should be noted that water pollutant to the WGG only occurs when multiple of the aforementioned items occurs. For example, pipeline leakage can only reach indoor area due to the proposed measures, and the leaked sewage from indoor area will only reach the outdoor area under extreme condition (flooding/broken bund wall). Similar situations are for the sewage in the holding tank to reach groundwater or outdoor area. A complete system breakdown may render the monitoring system powerless but the physical implementation such as buffer volume and waterproof wall shall still works properly when regular inspection and maintenance are provided. Therefore, the risk of polluting the WGG arising from the proposed house is extremely small.

# 8 CONCLUSION

- 8.1.1 The registered owner of Lot No. 764 in D.D. 249 (the Subject Lot) submitted a Section 12A Amendment of Plan Application to Town Planning Board to allow the proposed Small House and site formation works at the Subject Lot and adjoining Government land in Wan Che, Sai Kung.
- 8.1.2 The Application Site falls within water gathering ground thus no use of septic tank with soakaway systems, as well as discharge of effluent or foul water into adjoining land, storm water drain, channel, stream or river course is allowed.
- 8.1.3 As the Application Site and its vicinity are not served by the public sewer, an underground sewage holding system with capacity of about 34m<sup>3</sup> (2 weeks of sewage under reasonably worst situation). Monitoring system as well as high standard of leakage prevention mechanism have been proposed to protect water quality of the WGG.
- 8.1.4 An Operation and Maintenance Manual shall be prepared during the detailed design stage of the sewage holding system. The Standard Operation Procedure for various situations, including maintenance procedure and emergency response plan, shall also be included in the Manual. In addition, a contingency plan shall be prepared during the detailed design stage for providing instruction to the occupants when system breakdown.
- 8.1.5 The sewage holding system shall be designed in the way that everything the occupants need to know would be displayed on the screen of the control panel, or in the contingency plan for occupants when the screen and/or the system is down.
- 8.1.6 The sewage holding tank would be cleared weekly by registered contractor by tankering away all sewage and sludge for treatment outside the WGG. Monthly inspection would be conducted by independent checker.
- 8.1.7 With the proposed sewage holding system, as well as other measures implemented properly, no sewerage impact, water quality impact and odour impact on the surrounding residents and waterbodies is anticipated. The risk of the potential leaked pollution to reach the outside of the proposed house is extremely small.

FIGURES



•

_		$\overline{)}$		$\backslash$
		$\langle \ \rangle$		
			$\sim$	$\bigcirc$
Г	Drojaat S	ito Po	undary	
L	Floject S		unuary	$\frown$
Г	LondLot	Daun	don	
L	Land Lot	Boun	uary	
	Analisati			$\sim$
	Applicatio	on Site	Э	
			$\searrow$	<u> </u>
$\langle \rangle$		$\sim$		$\sim$ $\setminus$
//				$\langle \rangle$
/ _				$ \setminus \setminus $
			/ / /	$\backslash \setminus \backslash$
	$\frown$			$\langle \langle \rangle$
/	$\frown$	$\checkmark$	$\langle / / \rangle$	$ \setminus  $
	_ / /	$\langle \rangle$	>	$\backslash \backslash$
			- )     / )	$\backslash \backslash ]$
	$\sim$			$\backslash $
		$\gamma /$	$      \setminus \setminus$	
			$  (   \setminus )$	$\overline{)}$
			$   \langle \rangle$	$\langle \ \rangle$
			$  \langle \rangle$	
7	$> \langle \rangle \rangle   \rangle   \rangle   \rangle$			
$\square$		/ /		
		//		
	$ \langle \langle \rangle \rangle \langle \rangle \langle \rangle \langle \rangle \rangle \langle \rangle \langle \rangle \langle \rangle \langle \rangle \rangle \langle \rangle \langle$	$\langle / \rangle$		
λ		$\searrow$		
		$\langle \rangle$		/
$\nearrow$		$\bigcirc$		
$\overline{)}$	$ \longrightarrow / //$	$\langle \rangle$		
	$\sim // $	$\langle \rangle$		
$\backslash$	/ ///	$\sim$		
$\mathcal{T}$		$\geq$		
$\left( \right)$	60	$\langle \rangle$		
		$\langle \rangle$		/
	( / / /	$\langle \rangle$		
/ /		//	$\checkmark$	
	$  /A \setminus \rangle$		$\times$	
	$  //    \setminus \setminus$	$\times$		
	/// + / /	$\sim$		
/				
/ /				
/			0.00	
LE	1:1000 @ A3	DATE	Sep 202	22
СК	BC	DRAWN	CC	251
s No.	14 100 20	DRAWING	NO. <b>1 1</b>	REV
	IA 19020		1-1	-

•

•






APPENDIX 2-1 Site Formation Plan



# NOTES FOR SOIL NAILS

# GENERAL NOTES

- 1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
- 2. ALL LEVELS ARE IN METRES ABOVE PRINCIPAL DATUM.
- 3. FOR INSTALLATION DETAILS OF SOIL NAILS, REFER TO SOIL NAIL SCHEDULE.
- 4. RECOMMENDATIONS AND REQUIREMENTS GIVEN IN GEOGUIDE 7 SHALL BE FOLLOWED.

# MATERIALS

- 1. THE CONTRACTOR SHALL SUBMIT SAMPLES OF SOIL NAILS COMPONENTS TO THE ENGINEER FOR APPROVAL AND INSTALL AS DIRECTED BY THE ENGINEER 2. ALL STEEL BARS SHALL COMPRISE HIGH YIELD TENSILE STEEL MANUFACTURED TO CS2:2012, ALL STEEL BARS SHALL BE PRE-FABRICATED WHICH THE STEEL BARS TO BE OBTAINED SHALL BE APPROVED BY THE ENGINEER. IN FCTORY CONDITIONS. BEFORE ANY ORDER IS PLACED. THE SOURCE FROM ARRANGEMENTS SHALL BE MADE TO THE SATISFACTION OF THE ENGINEER TO ENSURE THAT ALL
- MATERIALS DELIVERED TO SITE SHALL COME FROM THIS SOURCE ONLY. 3. APPROVAL GIVEN BY THE ENGINEER TO ANY SOURCE OF SOIL NAILS DOES NOT RELIEVE THE CONTRACTOR OF HIS CONTRACTUAL OBLIGATION TO SUPPLY MATERIALS WHICH COMPLY WITH THE SPECIFICATION. ANY MATERIAL WHICH IS UNSATISFACTORY, IN THE OPINION OF THE ENGINEER, SHALL BE REJECTED.
- 4. ALL STEEL BARS AND ASSOCIATED COUPLERS, STEEL PLATES AND NUTS SHALL BE HOT-DIP GALVANISED WITH A MINIMUM ZINC COATING OF 610 g/m<sup>2</sup> TO BS EN ISO 1461: 1999.
- 5. ALL EXPOSED STEEL SHALL BE PROTECTED BY APPROVED CORROSION PROTECTION. THREADS TO NUTS AND COUPLERS SHALL BE CUT PRIOR TO GALVANISING AND SHALL BE SIZED TO MATCH WITH THE GALVANISED HREAD ON THE BAR
- 6. MANUFACTURERS TEST CERTIFICATES AND TEST CERTIFICATES OF APPROVED LABORATORY SHALL BE SUPPLIED FOR EACH CONSIGNMENT OF BARS TO SHOW COMPLIANCE WITH THE MINIMUM REQUIREMENTS OF THIS STANDARD. ANY BARS ARS SHOWING SIGNS OF PITTING SHALL NOT BE USED.
- 7. THE CONTRACTOR SHALL FURNISH WITH EACH NAIL ALL ACCESSORIES INCLUDING STEEL BARS, PLASTIC SPACERS, STEEL BEARING PLATES, BALL WASHERS, MACHINE WASHERS, HEXAGONAL NUT, WEDGES AND TAPER WASHERS IF USED, SEALS AND RIGID PLASTIC GROUT INJECTION TUBES FOR APPROVAL BY THE ENGINEER.
- 8. ALL THREADS SHALL BE FREE OF RUST AND BURRS AND THE NUT SHALL BE FREE RUNNING ON THE BOLT. THE THREADS OF THE NUT AND OF THE PROJECTING END OF THE BOLT, AND THE SURFACES OF THE BALL MACHINES AND TAPERS WASHERS SHALL BE LUBRICATED WITH AN APPROVED RUST PREVENTATIVE PLASTIC GREASE BEFORE TIGHTENING THE NUT.
- 9. CLASS 1 CORROSION PROTECTION MEASURES ARE PROVIDED WHERE SOIL NAIL BARS ARE HOT-DIP GALVANISED WITH ZINC COATING PLUS CORRUGATED PLASTIC SHEATHING

## DRILLING

- 1. THE NAIL LOCATIONS ARE TO BE CONFIRMED ON SITE BY THE ENGINEER BASED ON THE SITE CONDITIONS.
- 2. THE ORIENTATION FOR EACH DRILL HOLE SHALL BE NORMAL TO THE SLOPE FACE AT THAT POINT. A SUITABLE TEMPLATE SHALL BE USED TO ENSURE THAT ALL HOLES ARE DRILLED IN THE CORRECT ORIENTATION.
- 3. HOLES OF DIAMETER SPECIFIED SHALL BE DRILLED FOR THE SOIL NAILS IN LOCATIONS, ORIENTATIONS AND TO THE DEPTHS ACCORDANCE WITH THE DRAWINGS OR AS SPECIFIED BY THE ENGINEER. DRILLING SHALL USE ONLY AIR FLUSH UNLESS SPECIFICALLY INSTRUCTED OTHERWISE BY THE ENGINEER IN WRITING. THE DRILLING METHOD USED SHALL BE SUBJECT TO THE AGREEMENT OF THE ENGINEER.
- 4. THE DRILLING EQUIPMENT SHALL BE SUITABLE FOR THE STRATA ENCOUNTERED AND FOR INSERTION OF STEEL BARS TO THE REQUIRED LENGTH. THE DEVIATION FROM THE SPECIFIED DIRECTION SHALL NOT EXCEED 5% OF THE LENGTH. THE PERMITTED DEVIATION OF DRILLHOLES SHALL BE SUCH THAT A ALL PLACES A MINIMUM OF 10mm GROUT COVER TO THE SOIL NAILING BARS AND COUPLER IS ACHIEVED. WHERE REQUIRED BY THE ENGINEER. THE CONSTRACTOR SHALL CARRY OUT AN INTERNAL SURVEY OF THE DRILLED HOLE TO CONFIRM THAT THE HOLE IS WITHIN THE SPECIFIED TOLERANCE
- 5. ON COMPLETION OF DRILLING, THE DRILLHOLE SHALL BE PLUGGED OR OTHERWISE PROTECTED TO PREVENT THE ENTRY OF FOREIGN MATERIAL.
- 6. EACH HOLE SHALL BE CLEANED OF ALL DRILL CUTTINGS, SLUDGE AND DEBRIS BY THE CONTRACTOR.
- 7. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A DRILLING RECORD OF EACH DRILLHOLE INCLUDING A BRIEF DESCRIPTION OF THE STRATA ENCOUNTERED AND THE APPROXIMATE PENETRATION RATE OF DRILLING NOT LATER THAN ONE DAY AFTER DRILLING THE HOLE AND PRIOR TO GROUTING. THE FORMAT AND CONTENT OF THE DRILLING RECORD SHALL BE APPROVED IN ADVANCE BY THE ENGINEER.
- 8. THE CONTRACTOR SHALL PROVIDE EQUIPMENT TO CHECK THE SLOPING ANGLE AND DIRECTION OF THE DRILLHOLES. BEFORE THE STEEL BAR IS INSERTED, THE CONTRACTOR SHALL IN THE PRESENCE OF THE ENGINEER CHECK THE NCLINATION, BEARING, CLEANLINESS AND LENGTH OF EACH DRILLHOLE. THE CONTRACTOR SHALL MAKE SURE THAT HIS METHOD OF DRILLING WILL NOT CAUSE COLLAPSE OF THE DRILLHOLE DURING DRILLING OPERATIONS AND/OR
- 9. DRILLHOLES SHALL BE CLEANED BY AIR FLUSH IMMEDIATELY PRIOR TO STEEL BARS INSERTION IF NECESSARY INSERTION OF STEEL BARS
- 1. THE INSERTION PROCEDURES SHALL BE TO THE APPROVAL OF THE ENGINEER AND SHALL CAUSE NO BENDING OF THE BAR SHANK OR DAMAGE TO THE THREAD ON THE PROJECTING END OF THE SOIL NAIL.
- 2. ALL ASSOCIATED COMPONENTS SHALL BE PROPERLY AND SECURELY ASSEMBLIED TO THE STEEL BARS IN ACCORDANCE WITH THE TYPICAL DETAILS BEFORE INSERTION.
- 3. BEFORE INSERTION, THE CONTRACTOR SHALL IN THE PRESENCE OF THE ENGINEER CHECK THE CONDITIONS OF EACH COMPONENT ASSEMBLIED AND THE STEEL BARS, AND REPLACE WITH THE SAME BATCH TO THE SATISFACTION OF THE ENGINEER IF NECESSARY

## GROUTING

- 1. THE SOIL NAIL SHALL BE GROUTED AS SOON AS PRACTICABLE AFTER INSERTION, BUT IN ANY EVENT WITHIN 48 HOURS OF INSTALLATION TO ENSURE THE STABILITY OF THE SOIL NAILED SLOPE. ALL NECESSARY PREPARATIONS FOR GROUTING OF NAILS SHALL BE MADE DURING THE INSTALLATION OF THE NAIL. THE METHODS OF ENSURING THAT THE SOIL NAIL IS GROUTED UP TO AND INCLUDING THE ANCHORAGE AND THAT THE AIR IS VENTED OUT OF THE DRILLHOLE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- 2. ALL SOIL NAILS SHALL BE GROUTED IN ACCORDANCE WITH THE FOLLOWING: a. ALL CEMENT USED IN THE GROUTING OF THE SOIL NAIL SHALL COMPLY WITH THE PROVISION OF BS 12.
- b. THE WATER CEMENT RATIO SHALL NOT EXCEED 0.45.
- c. BATCHING OF THE DRY MATERIALS SHALL BE BY WEIGHT. THE AMOUNT OF WATER USED SHALL BE MEASURED BY A CALIBRATED FLOWMETER OR
- MEASURING TANK. d. THE GROUT SHALL BE MIXED BY ADDING APPROXIMATELY TWO-THIRDS OF THE CEMENT TO THE WATER ADDING ANY ADMIXTURE AND ADDING THE REMAINING ONE-THIRD OF CEMENT. OTHER MIXING PROCEDURES SHALL
- NOT BE USED UNLESS PERMITTED BY THE ENGINEER. e. GROUT TO WHICH A RETARDING AGENT HAS NOT BEEN ADDED, AND WHICH IS NOT USED WITHIN 30 MINUTES OF MIXING, SHALL NOT BE USED FOR
- 3. NINE 100mm TEST CUBES SHALL BE MADE FROM EACH SAMPLE OF GROUT TAKEN AS STATED IN GS. EACH GROUP OF THREE TEST CUBES SHALL BE TESTED TO DETERMINE THE CRUSHING STRENGTH AT 3 DAYS. 7 DAYS AND 28 DAYS RESPECTIVELY. FOR PERMANENT SOIL NAILS, THE TEST CUBES FOR DETERMINING THE CRUSHING STRENGTH AT 3 DAYS AND 7 DAYS CAN BE OMITTED.
- 4. THE MINIMUM CRUSHING STRENGTH AT 28 DAYS SHALL BE 30MPa. THE ENGINEER MAY APPROVE OR ACCEPT CEMENT FOR GROUT ON THE RESULTS OF TESTS AT OTHER PERIODS LESS THAN 28 DAYS, BUT WILL DO SO ONLY AS LONG AS HE IS SATISFIED THAT THE RESULTS OF THE TESTS AT THE LESSER PERIOD ARE AN ADEQUATE GUIDE TO THE PROPERTIES AT THE LONGER PERIOD.

## PULL OUT TESTS FOR SOIL NAILS

- 1. THE LOADING APPARATUS SHALL BE SET UP IN SUCH A WAY THAT NO LOADING, OTHER THAN THE PULLOUT LOAD, ACTS ON THE STEEL BAR AT THE NAIL HEAD. THE REACTION OF PULL-OUT LOAD FROM THE LOADING APPARATUS SHALL ACT ON A SUFFICIENTLY SIZED RIGID BEARING PLATE PLACED AGAINST A TEMPORARAY CUT FACE AT NORMAL TO THE ALIGNMENT OF THE STEEL BAR TO ENSURE ADEQUATE LOAD SPREADING AND TO AVOID ECCENTRIC LOADING. MONITORING INSTRUMENTS SHALL BE CAREFULLY POSITIONED AND INDEPENDENTLY SUPPORTED TO RECORD THE EXTENSION OF THE SOIL NAIL STEEL BAR AND ANY MOVEMENT OF THE STEEL BEARING PLATE.
- 2. THE SOIL NAIL SHALL BE GROUTED OVER THE LENGTH AS SPECIFIED IN THE DRAWINGS OR AS DIRECTED BY THE ENGINEER. THE LENGTH TO BE GROUTED SHALL BE ISOLATED BY MEANS OF A PACKER THAT CAN PREVENT GROUT FROM LEAKING THROUGH TO THE FREE-LENGTH SECTION DURING GROUTING AND THAT CAN ENSURE THAT THE PROPOSED BONDED SECTION IS EFFECTIVELY GROUTED TO THE REQUIRED LENGTH AS SHOWN IN THE DRAWINGS. THE ENTIRE FREE LENGTH OF THE STEEL BAR SHALL BE PROPERLY DEBONDED OR CAPPED TO ENSURE THAT THE TEST LOAD CAN BE DIRECTLY TRANSFERRED TO THE BONDED ZONE IN CASE OF GROUT LEAK THROUGH THE PACKER.

- 3. THE PULLOUT TEST SHALL NOT BE CARRIED OUT UNTIL THE GROUT HAS REACHED A CUBE STRENGTH OF 21MPa.
- 4. THE TEST SOIL NAIL SHALL BE LOADED IN STAGES: FROM THE INITIAL LOAD (Ta) VIA TWO INTERMEDIATE TEST LOADS (TDL1 AND TDL2) TO
- THE MAXIMUM TEST LOAD
- 5. TDL1 SHALL BE THE ALLOWABLE PULLOUT RESISTANCE PROVIDED BY THE BOND LENGTH OF THE CEMENT GROUT SLEEVE OF THE TEST SOIL NAIL.
- 6. TDL2 SHALL BE TDL1 TIMES THE FACTOR OF SAFETY AGAINST PULLOUT FAILURE AT SOIL-GROUT INTERFACE (FSG).
- 7. THE MAXIMUM TEST LOAD SHALL BE 90% OF THE YIELD LOAD OF THE TEST SOIL-NAIL REINFORCEMENT (TP) UNLESS THE ULTIMATE GROUND-GROUT BOND LOAD (T ULT) IS REACHED DURING THE TEST. REINFORCEMENT SIZE LARGER THAN THAT OF THE WORKING SOIL NAIL SHOULD BE USED IN THE PULLOUT TEST, WHERE NECESSARY, TO ALLOW THE DEVELOPMENT OF T ULT PRIOR TO REACHING TP.
- 8. To SHALL BE TDL1 OF 5% OF TP, WHICHEVER IS SMAILLER.
- 9. DURING THE FIRST TWO LOADING CYCLES, TDL1 AND TDL2 SHALL BE MAINTAINED FOR 60 MINUTES FOR DEFORMATION MEASUREMENT. THE MEASUREMENT AT EACH OF THE CYCLES SHALL BE TAKEN AT TIME INTERVALS OF 1, 3, 6, 10, 20, 30, 40, 50 AND 60 MINUTES. IF THE TEST SOIL NAIL CAN SUSTAIN THE TEST LOAD SUBJECT TO THE ACCEPTANCE CRITERIA GIVEN BELOW, THE LOAD SHALL BE REDUCED TO TO AND THE RESIDUAL DEFORMATION SHALL BE RECORDED AFTER WHICH THE TEST SHALL PROCEED TO THE NEXT LOADING CYCLE.
- 10. IN THE LAST LOADING CYCLE, THE TEST LOAD SHALL BE INCREASED GRADUALLY FROM TO STRAIGTH TO THE MAXIMUM TEST LOAD AND THEN MAINTANINED FOR DEFORMATION MEASUREMENT. THE MEASUREMENT SHALL BE TAKEN AT TIME INTERVALS OF 1, 3, 6, 10, 20, 30, 40, 50 AND 60 MINUTES. IF THE TEST SOIL NAIL CAN SUSTAIN THE TEST LOAD SUBJECT TO THE ACCEPTANCE CRITERIA GIVEN BELOW, THE LOAD SHALL BE REDUCED TO TO AND THE RESIDUAL DEFORMATION SHALL BE RECORDED, AFTER WHICH THE TEST IS COMPLETED.
- 11. IF THE TEST SOIL NAIL FAILS TO SUSTAIN TDL1 TDL2 OF THE MAXIMUM TEST LOAD IN ANY CYCLE, THE TEST SHALL BE TERMINATED AND THE SOIL NAIL MOVEMENT AGAINST RESIDUAL LOAD WITH TIME SHALL BE RECORDED. THE MEASUREMENTS SHALL BE TAKEN AT TIME INTERVALS OF /1. 3. 6. 10 AND, EVERY 10 MINUTES THEREAFTER OVER A PERIOD FOR AT LEAST TWO HOURS. THE MEASUREMENTS SHALL BE TAKEN FOR A LONGER PERIOD WHERE CONSIDERED NECESSARY.
- 12. ACCEPTANCE CRITERIA: THE TEST SOIL NAIL IS CONSIDERED TO BE ABLE TO SUSTAIN THE TEST LOAD IF THE DIFFERENCE OF SOIL NAIL MOVEMENTS AT 6 MINUTES AND 60 MINUTES DOES NOT EXCEED 2mm OR 0.1% OF THE BOND LENGTH OF THE TEST SOIL NAIL.
- (SEE DETAIL 'A') EXISTING GROUND -500-SOIL NAIL SCHEDULE NAIL LENGTH NAIL ROW NO. NOS. OF NAILS (m) Α 4 2 B ~~~~ 4 PULLOUT TEST SCHEDULE NAIL LENGTH DRILLHOLE DIA. TEST NAIL NO. (m) (mm) 150 T2 4 150 2 4 Ω 7 Ľ Z И 1 4 4 STAGE 1 EXTENT OF -MOTACENT EX LALL (BASED ON PLAN) (BASED ON PLAN) F8790 G<sup>92.06</sup> Wall height 1.15m 4100 Wall height 1.07 (+89.90) 2000 RW2 (+89.70) Nater /





APPENDIX 6-1 Conditions for Working within Gathering Ground

# Conditions for Working within Gathering Grounds

- (a) Adequate measures shall be taken to ensure that no pollution or siltation occurs to the gathering grounds.
- (b) No earth, building materials, fuel, oil or toxic materials and other materials which may cause contamination to the gathering grounds are allowed to be stockpiled or stored on site.
- (c) All surplus spoil shall be removed from gathering grounds as soon as possible.
- (d) Temporary drains with silt traps shall be constructed at the boundary of the site prior to the commencement of any earthworks.
- (e) Regular cleaning of the silt traps shall be carried out to ensure that they function properly at all time.
- (f) All excavated or filled surfaces which have the risk of erosion shall be protected from erosion at all time.
- (g) Facilities for washing the wheels of vehicles before leaving the site shall be provided.
- (h) Any construction plant which causes pollution to the gathering grounds due to leakage of oil or fuel shall be removed off site immediately.
- (i) Any soil contamination with fuel leaked from plant shall be removed off site and the voids arising from removal of contaminated soil shall be replaced by suitable material to the approval of the Director of Water Supplies.
- (j) Provision of temporary toilet facilities is to be subject to the approval of the Director of Water Supplies.
- (k) All waterworks access roads must be maintained unobstructed at all time.
- (1) Site formation plans shall be submitted to W.S.D. for approval prior to commencement of work.
- (m) No structure or temporary works shall be erected in the catchwaters without prior approval of W.S.D.

(n) The Contractor shall be responsible for cleaning frequently any waterworks roads and associated drainage works of mud and debris.

(o) The Contractor shall limit the gross weight of the vehicles imposed on the waterworks access to 5 tonnes and the axle load to 3 tonnes. He shall apply to W.S.D. with details of his vehicles for using the access.

- (p) The approval for using the access may be withdrawn on written notice to the Contractor by W.S.D. at their absolute discretion.
- (q) The Contractor shall recover immediately his vehicle which fell into the catchwater or stream bed or pay to Government on demand the cost of recovery that may be necessary through the occurrence of any incident caused by the Contractor.
- (r) The Contractor shall carry out repair or reinstatement works to the satisfaction of W.S.D. or pay to Government on demand the cost of repair and reinstatement to any waterworks installations that shall or may be necessary at any time as a result of damage caused by the Contractor or others under his charge.
- (s) The Contractor shall enter and remain on and use the access at his own risk and he shall indemnify the Government of Hong Kong from all claims, costs, damages and expense arising from the use of the access.
- (t) No excavation with depth more than 2m shall be permitted within 120m from the centerline of WSD water tunnels without the prior approval of WSD.

5 ....

APPENDIX 6-2 Conditions for Working in the Vicinity of Waterworks Installation

#### Conditions for Working in the Vicinity of Waterworks Installations

#### Water Mains

0

- 1. No water mains or their support shall be interfered with or buried without the prior approval of WSD.
- 2. The Contractor shall check the location of water mains and cables and other services by hand dug trial holes and take precautionary measures to protect them.
- 3. Free access shall be maintained at all times for the staff of WSD, their contractors and vehicles to go into and/or through the site to carry out installation, inspection, operation, maintenance or repair works.
- 4. No additional filling material is to be deposited over a water main without the approval of WSD.
- 5. No structures shall be erected or materials stored within 3 metres from the centre line of mains of 900mm diameter or under, and 5 metres for mains exceeding 900mm in diameter.
- 6. Full details of any proposed temporary works affecting waterworks installations and of any temporary support or protective measure to mains shall be submitted to the Client Department where appropriate for approval and to WSD for information. Work shall not commence until approval is given by the Client Department.
- 7. Diversion of WSD mains, other than those already shown on the contract drawings, shall only be considered when all other options such as protection of the mains or modification of design have been considered and found to be impracticable.
- 8. The programme for laying or diversion of all WSD mains shall be agreed with WSD in advance. A 14-day notice shall be served to WSD to confirm site availability for the commencement of any agreed diversion. WSD shall also be notified of any change required in the agreed programme as soon as possible.
- 9. All excavation works within 1.5m of water mains exceeding 900 mm in diameter shall be carried out by hand. No excavation shall be carried out within lines 45° below the centre line of such mains or 45° below the edges of the foundation of their supports without approved ground support. If the support is in the form of steel sheets, they shall be left in place after works. Removal of support from underneath the mains is not permitted.
- 10. No earth fill ramps are to be used to form temporary crossings of the large diameter mains. Temporary ramps/bridges in steel, timber, or concrete shall be used with the deck and support piers clear of the mains so that no loading is imposed on the mains.
- 11. All temporary works near the large diameter water mains shall be kept to at least 1 metre away from the edge of the mains and the length of mains affected shall be well protected by a temporary timber cover raised 250 mm clear of the mains to ensure no impact damage.

#### Blasting, Drilling and Piling near Waterworks Installations

- 12. No blasting, drilling, or pile driving (including sheet piling) within a distance of 60m from waterworks tunnels shall be carried out. Furthermore, blasting within 50m from any water retaining structure other than watermains; 6m from watermains of 600mm diameter and above; and 6m from any non-water-retaining structure shall not be carried out without the prior approval of WSD.
- 13. The maximum particle velocity and amplitude of ground movements due to blasting or pile driving as measured at the nearest waterworks tunnel or other water retaining structures shall not exceed 13mm/sec. and 0.1mm respectively.
- 14. The maximum particle velocity and amplitude of ground movements due to blasting or pile driving as measured at the nearest water mains shall not exceed 25mm/sec. and 0.2mm respectively.
- 15. The size of charge, pattern and timing of detonation etc. will be decided by the Commissioner of Mines after carrying out test firing at site.
- 16. The movement of mains and structures shall be monitored by surveys jointly attended by WSD, the project Department and the Contractor. One week's notice shall be given to WSD for any survey request.
- 17. Vibration from blasting, piling or other causing activities shall be monitored by means of agreed vibrograph readings. The vibrograph shall comply with the Specification below and shall be provided free by the Contractor.
- 18. The results of monitoring of the vibration and any movement of water mains and waterworks structures shall be submitted to WSD for record purpose. If the aforementioned vibration limits are exceeded or movement in excess of 5mm is detected, works shall be suspended until approved remedial works are completed. Full details of the proposed works shall be approved by WSD before any work commences.

#### Specification for Vibrograph

- (a) The machine shall be a direct reading type peak particle velocity vibrograph.
- (b) It shall have 3 channels, recording in 3 mutually perpendicular directions.
- (c) It must be able to record particle velocity and amplitude, although not necessarily at the same time.
- (d) It must produce a permanent trace on paper, preferably by using ultra-violet light.
- (e) The recording paper must be easily obtainable locally.
- (f) The instrument must be portable and battery operated (or else a generator must be supplied free).
- (g) Operating instructions must be in English.

#### **Excavation near Waterworks Installations**

19. Excavation shall not be permitted within lines drawn at 45° downwards from a point 6m away from the foundation lines of any waterworks structures.

- 20. No excavation should be carried out within 60 metres, horizontally of any tunnel and no excavation or well driving shall be carried out above any tunnel.
- 21. No quarrying operations shall be carried out above and/or within 150 metres horizontally from any waterworks tunnel.

#### Prevention of Pollution of Waterworks Catchments

- 22. Site formation, construction and drainage plans shall be submitted to WSD for approval prior to commencement of work.
- 23. Protective measures shall be taken by the Contractor to prevent pollution or siltation to the catchment area. Any bulk excavation within the catchment shall be provided with silt traps to prevent any particular matter from entering streams or intakes. The details of silt traps shall be submitted to WSD for approval. Silt traps shall be cleared out regularly and in particular after any rainstorm.
- 24. The storage and discharge of pesticides, toxicant, flammable or toxic solvents, petroleum oil, diesel, tar or other toxic substances are strictly prohibited within the gathering grounds.
- 25. No labour lines shall be allowed within waterworks catchment area.
- 26. Only dry-type portable toilet facility with regular desludging schedules is allowed during the construction period. The sludge must be disposed of properly outside the gathering grounds. Portable toilets shall be kerbed on all sides, located at least 30 metres away from the streams and desludged on a regularly basis.
- 27. The Contractor shall be responsible for cleaning frequently any waterworks roads and associated drainage works of mud and debris.
- 28. Should pollution be detected in future due to the development, immediate remedial actions to clear the pollution must be taken by the Contractor.

#### Waterworks Installations (e.g. Treatment Works) Nearby

- 29. The Contractor will not be permitted access to any adjacent waterworks installations.
- 30. An unimpeded free vehicular access shall be maintained at all times to and from the adjacent waterworks installations in the vicinity.

#### Special provisions

31. WSD may impose further conditions as deemed necessary for the protection of waterworks that may be adversely affected by the proposed works including but not limited to the appointment of independent checking engineer and specialists at the expense of the project.

- END -

### Flow Chart on Procedures for Safe Working near Water Mains



APPENDIX 7-1 Potential Risk, Precautionary Measures and Risk Assessment

Risks / Hazard	Risk Rating before Implementation of Preventive Measure(s)			Preventive Measure(s)	Monitoring System	Risk Rating after Implementation of Preventive Measure(s)		
	Likelihood	Consequence	Risk			Likelihood	Consequence	Risk
Leakage from Indoor to Outdoor Area	Medium	Medium	Medium	No accumulation of large amount of surface runoff near the propose house during rainstorm is anticipated due to the elevation of the house. With door(s) protected by bunded wall, all indoor wastewater, wash water and potential leaked sewage on the floor shall be blocked and eventually collected by the sewage storage tank via floor drains.	N/A	Unlikely	None	None
Leakage from Sewage Pipelines to Outdoor Area	Medium	Medium	Medium	The sewer pipes shall be made of cast iron or other approved material with sealed joints and hatched boxes. All sewer pipes shall be located within the building footprint to ensure any potential leakage will be collected by the floor drain(s) and reach the underground holding tank.	N/A	Unlikely	None	None
Leakage from the Underground Room to Groundwater	Medium	Medium	Medium	Non-seeping material and/or membrane shall be applied to the floor and walls of the underground room during construction to provide a waterproof room.	Leakage test shall be performed upon construction to confirm the integrity of the wall and floor before placing the holding tank into the room. Visible crack/damage shall be identified at monthly inspection during operation by the checker. A pair of water sensors with self-error detection mechanism shall be provided at the lowest points of the room for the detection of water. If water is detected in the room, warning signal will be triggered to notify the user for inspection.	Low	Low	Low
Leakage from the Underground Room to Outdoor Aera	Low	Medium	Medium	No accumulation of large amount of surface runoff near the proposed house during rainstorm is anticipated. Therefore, by providing the access door/opening of the underground room either within building or surrounding by bunded wall with cover are sufficient to prevent water ingress to the underground room.	N/A	Unlikely	None	None
Leakage from Sewage Holding Tank to the Underground Room caused by:		·						
• Flooding of Sewage Holding Tank due to Water Ingress under Heavy Rain	Low	Medium	Medium	The vent pipe shall be equipped with rain cap. All sewer pipes shall be located within building footprint thus no water ingress via the leaked sewers is anticipated.	Pairs of water sensors with self-error detection mechanism shall be provided at each of the concerned water level. Alarm test shall be conducted before operation and at monthly inspection during operation by the checker. WSD and PlanD shall be notified within 24 hours in case leakage is identified.	Low	Low	Low
• Overflowing of Sewage Holding Tank	Low	High	Medium	The monitoring system will warn the occupants at 50%, 70% & 85% full. At 70% and 85% full, the alarm will also be triggered. The required action and warning message shall be displayed on the screen of the control panel to remind the occupants until the warning signal wears off. Occupant shall stop sewage generation until all defects have been rectified by Contractor		Low	Low	Low
<ul> <li>Crack, External Damage or Deterioration</li> </ul>	Medium	Medium	Medium	The sewage holding tank shall be a double-layered polypropylene tank. The double layer design can prevent any crack propagates to another layer thus the chance of leakage will be greatly reduced. The double layer design can also provide longer time between noticeable damage occurred and sewage leakage, thus more time is available for arranging temporary repair or replacement	Leakage test shall be performed upon construction to confirm the integrity of the sewage holding tank before operation. External damage shall be checked before operation and at monthly inspection during operation by the checker. Access door shall be provided for inspection when necessary. WSD and PlanD shall be notified within 24 hours in case leakage is identified.	Low	Low	Low

Sewerage Impact and Risk Assessment Report for Lot No. 764 in D.D.249 and Adjoining Government Land Wang Che, Sai Kung, New Territories

Risks / Hazard	Risk Rating before Implementation of Preventive Measure(s)			Preventive Measure(s)	Monitoring System	Risk Rating after Implementation of Preventive Measure(s)		
	Likelihood	Consequence	Risk			Likelihood	Consequence	Risk
System Breakdown	Low	High	Medium	The sewage holding tank is expected to hold 2 weeks of sewage under reasonably worst situation. The weekly sewage removal shall stop the tank from being overflowed.	When there is a power outage and/or system breakdown, i.e.: no signal output from the monitoring system, the battery powered visual alarm shall be switched on automatically to inform the occupants for arranging emergency checking and maintenance.	Low	Low	Low
Water Pollution Arising from The Construction Activities	High	High	High	The proposed mitigation measures including the WSD's conditions will be incorporated into the tender of this Proposed development to ensure that the project team will minimize the potential water quality impact.	N/A	Low	Low	Low

Sewerage Impact and Risk Assessment Report for Lot No. 764 in D.D.249 and Adjoining Government Land Wang Che, Sai Kung, New Territories



Appendix Ic of RNTPC Paper No. Y/SK-HC/5

### (Est. 1995) ALBERT SO SURVEYORS LTD.

Your Ref.: TPB/Y/SK-HC/5 Our Ref.: AS024/17/III/127 8 March 2023

### By Hand and Electronic Communication

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

Dear Sir/Madam,

## Submission of 2<sup>nd</sup> Further Information Application for Amendment of Plan under Section 12A from "Conservation Area" and "Village Type Development" to "Village Type Development" for a New Territories Exempted House ("NTEH") Development Lot No. 764 in D.D. 249 and Adjoining Government Land <u>Wang Che, Sai Kung, New Territories</u> (Planning Application No. Y/SK-HC/5)

Thank you for the comments on the captioned application received from Water Supplies Department ("WSD") on 8 March 2023.

In response to WSD's comments, we understand that the Applicant is willing to provide an undertaking to comply with WSD's requirements prior to the commencement of the proposed NTEH development covering the following details.

- (a) Implementation of the measures proposed in the submitted risk assessment report to the satisfaction of WSD;
- (b) The proposed sewage holding tank system provided for foul effluent disposal will be installed at a distance of not less than 30 metres from any water course. The whole system will be properly maintained and desludged at a regular frequency. All sludge will be carried away and disposed of outside the water gathering ground ("WGG");
- (c) The Applicant will implement preventive, mitigation, contingency and remedial measures for preventing and containing overflow, leakage and spillage of sewage during operation and adverse weather conditions such as flooding and heavy rain;
- (d) Performance verification and long-term maintenance of the proposed measures to demonstrate a long-term commitment on no material increase in pollution effect within WGG;

P. 1 of 2

估價>相售、規劃及發展顧問 重事總經理。蘇振顯 地產代理(公司牌照號碼:C+007868) Regulated by RICS 香港九龍官塘海濱道133號萬兆豐中心17樓H2室 電話;(852) 2882 3183 國文傳真:(852) 2882 2810 Unit H2, 17/F, MG Tower, 133 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong Tel;(852) 2882 3183 Fax:(852) 2882 2810 Email: mail@assl.com.hk VALUERS, ESTATE AGENTS, PLANNING & DEVELOPMENT CONSULTANTS Managing Director; ALBERT SO PhD, MBA, BSC, FRICS, FHKIS, FHIREA, MRTPI



### ALBERT SO SURVEYORS LTD.

- (e) All spoils arising from the site formation and building construction works will be contained and protected to prevent all nearby water courses from being polluted or silting up;
- (f) The Applicant will connect the whole of the foul/sewage system to the public sewers when they become available; and
- (g) The whole of foul effluent will be conveyed through cast iron pipes or other approved material with sealed joints and hatched boxes from the proposed NTEH to the sewage holding tank system.

Should you have any enquiries, please contact the undersigned, our Dr. Tsz-choi Wong or Mr. William Wong at 2882 3183 for further discussion. Thank you.

Yours faithfully, For and on behalf of ALBERT SO SURVEYORS LTD.

Albert So Managing Director

c.c. Client (by email) DPO/SK&I (by email; Attn: Mr. Matthew Tai)

AS/TC/ww/cl \\ASSL\2017\AS02417\AS024'17'III'127.docx