

Drainage Services Department Consultants
Management Division

渠務署顧問工程管理部

**Relocation of Sham Tseng Sewage
Treatment Works to Caverns –
Feasibility Study**

**搬遷深井污水處理廠往岩洞 –
可行性研究**

Stage 1 Public Engagement Report

第一階段公眾諮詢報告

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List of PE1 Activities

1 Introduction 簡介

1.1 Background 背景

1.1.1.1 Drainage Services Department/Consultants Management Division (DSD/CM) commissioned Ove Arup & Partners Hong Kong Ltd. (ARUP) on 29 December 2014 to undertake Agreement No. CE 56/2014 (DS) Relocation of Sham Tseng Sewage Treatment Works to Caverns – Feasibility Study (the Study). The “Relocation of Sham Tseng Sewage Treatment Works (SmTSTW) to Caverns – Feasibility Study” is an extension of the following two previous studies that had explored the feasibility of relocating existing facilities into rock caverns. The objective of this study is to examine the feasibility of relocating Sham Tseng Sewage Treatment Works into caverns and the potential developments of the released land.

渠務署顧問工程管理部（渠務署）於2014年12月29日委託香港奧雅納工程顧問（奧雅納）簽署協議 CE 56/2014（DS）搬遷深井污水處理廠往岩洞 – 可行性研究（本研究）。「搬遷深井污水處理廠往岩洞 – 可行性研究」是以下兩項研究的延伸，這兩項研究探討了將現有設施搬遷往岩洞的可行性；而本研究的目的是探討把深井污水處理廠搬遷往岩洞的可行性，以及釋放土地的潛在發展。

1.1.1.2 As land is scarce in Hong Kong, there is a pressing need to optimise the supply of land through various innovative and sustainable approaches to support the social and economic development. Through the number of studies undertaken in Hong Kong to assess the practicality of varying options for land reclamation and land use, rock cavern development (RCD) was one of the practical solutions found in these assessments to land supply. According to the findings of Agreement No. CE 9/2011 (CE) “Increasing Land Supply by Reclamation and Rock Cavern Development cum Public Engagement – Feasibility Study” and Agreement No. CE66/2009 (GE) “Enhanced Use of Underground Space in Hong Kong – Feasibility study” completed by the Civil Engineering and Development Department (CEDD) in 2011 (Underground Space Study), about two-third of the total land area in Hong Kong was suitable for RCD from topographical and geological perspective. Also, there are many benefits of RCD which include releasing surface sites through systematic relocation of suitable existing government facilities to caverns, allowing future expansion of the

facilities underground and placing NIMBY (“not-in-my-backyard”) facilities in caverns thereby removing incompatible land uses.

由於香港土地短缺，迫切需要通過各種創新和可持續的方法以增加土地供應，並促進社會及經濟發展。在香港進行的土地開墾和土地利用研究結果顯示，岩洞發展是土地供應的其中一個可行方案。土木工程拓展署於 2009 年展開協議 CE 66/2009 (GE) 「善用香港地下空間 – 可行性研究」已探討發展地下空間的機遇；繼而於 2011 年展開 CE 9/2011 (CE) 「通過填海和岩洞發展暨公眾參與增加土地供應 – 可行性研究」。研究於 2011 年完結時總結全港約三分之二的土地均適合用作岩洞發展。此外，岩洞發展還有許多好處，包括將合適的政府設施（包括鄰避設施）搬遷往岩洞或擴建地下設施以釋放土地，從而去除不兼容的土地用途。

- 1.1.1.3 There have been successful applications of housing facilities in rock caverns in Hong Kong, for examples Stanley Sewage Treatment Works completed in 1995, the Island West refuse transfer stations and Kau Shat Wan explosive depot both completed in 1997. A recent example is the re-provisioning of the Western Salt-water Service Reservoirs at the University of Hong Kong in rock cavern in 2009 which the released land was developed into the university’s Centennial Campus. These projects show that rock caverns are valuable resources while providing added environmental, safety and security benefits for many applications.

香港有岩洞發展的成功例子，例如 1995 年完成的赤柱污水處理廠、1997 年完成的西區垃圾轉運站及狗虱灣政府爆炸品倉庫。近期成功例子為香港大學的西區海水配水庫於 2009 年重置於岩洞，並釋放土地發展成為大學的百周年校園。由此可見，岩洞是寶貴的資源，同時為各項發展提供額外的環境及安全優點。

- 1.1.1.4 Under the Land Supply Study, CEDD conducted a two-stage public engagement exercise on “Enhancing Land Supply Strategy – Reclamation outside Victoria Harbour and Rock Cavern Development” from November 2011 to March 2012 for Stage 1 Public Engagement and Stage 2 Public Engagement from March 2013 to June 2013 to gauge public views and foster the public’s understanding and acceptance in increase land supply by new and innovative ways including RCD among others. Based on the site selection criteria confirmed from the Stage 1 of the Public Engagement, CEDD selected SmTSTW as one of the three pilot scheme sites for RCD. Public feedback regarding the initiative of relocating suitable government facilities to caverns so as to release land for alternative use was generally positive. The results of

Stage 2 Public Engagement revealed that residential development, public parks, and recreational or leisure facilities were the three possible land uses that received most support. Major concerns about the pilot scheme were mainly related to transportation, impact on local community, engineering feasibility and ecological conservation issues. 土木工程拓展署於 2011 年展開了「優化土地供應策略 – 維港以外填海及發展岩洞」的研究，該研究的兩個階段公眾參與活動已於 2012 年 3 月及 2013 年 3 月 6 月完成，透過創新方法（包括岩洞發展），增加公眾對土地供應的認識和接受。根據當時所確立的選址準則，深井污水處理廠被選為三個岩洞發展的先導計劃之一。上述第一階段的公眾意見普遍支持岩洞發展以增加土地供應；第二階段公眾參與的結果顯示，住宅發展、公園、康樂及休閒設施是獲得最多支持的土地用途。公眾亦對先導計劃的交通、本地社區的影響、工程可行性及生態保護問題表示關注。

- 1.1.1.5 Located at Sham Tsz Street of Sham Tseng, the existing SmTSTW occupies a footprint of about 1.1 hectares. It is a primary sewage treatment works with a design sewage treatment capacity of 16,848m³ per day, providing services to a population of about 39,000 in the areas from Approach Bay to Tsing Lung Tau along Castle Peak Road. Commenced its operation in 2004, the existing SmTSTW includes four primary sedimentation tanks, chemical dosing facilities, ultra-violet disinfection system and sludge treatment facilities. The treated effluent is discharged to Ma Wa Channel via an existing 190m long, 650mm diameter submarine outfall for effective dilution and dispersion. 位於深慈街的深井污水處理廠佔地約 1.1 公頃，是一個以化學強化一級處理污水的設施，設計容量達每日 16,848 立方米，為青山公路沿線、近水灣至青龍頭一帶約 39,000 居民提供污水處理服務。深井污水處理廠自 2004 年開始投入運作，污水處理設施包括四個初級沉澱池、化學劑投配設施、紫外光消毒系統和污泥處理設施。經處理的污水通過現有長度為 190 米、直徑 650 毫米的海底排放管排放到馬灣管道，以便有效地稀釋和分散經處理的污水。

- 1.1.1.6 The Stage 1 Public Engagement was conducted between December 2015 and February 2016 to collect public views on the development feasibility and constraints, the key issues relating to the relocation project and the possible development on the released site. To facilitate public discussion, the Stage 1 Public Engagement Digest and other publicity materials including leaflets and posters covering the Study's background, benefits, opportunities and key constraints were disseminated to the public for general reference. At the same time, the

Study website (<http://www.smtstwincaverns.hk>) was released to facilitate easy public access to relevant publicity and consultation materials, details of the Stage 1 PE activities, as well as the latest progress of the Study.

本研究的第一階段公眾參與已於 2015 年 12 月至 2016 年 2 月進行，主要目的是收集區內持分者及公眾對於搬遷深井污水處理廠及釋出土地的初步規劃的意見。為方便公眾討論，第一階段公眾參與的文摘及其他宣傳資料，包括載有研究報告背景、好處、機遇及主要限制的宣傳單張及海報，均已派發予市民參考。同時，相關資料亦已上載到本研究的網頁（<http://www.smtstwincaverns.hk>），方便市民查閱有關的宣傳及諮詢資料、公眾參與活動的詳情，以及研究的最新進展。

1.2 Purpose and Structure of this Report 本報告的目的和結構

- 1.2.1.1 The purpose of this Report is to summarize the public comments and suggestions received during the Stage 1 Public Engagement and to provide responses to these comments and suggestions.

The report mainly covers the following sections:

- Chapter 1 – Introduction of the project;
- Chapter 2 – Overview of Stage 1 PE activities;
- Chapter 3 – Summary of key comments & responses; and
- Chapter 4 – Way forward.

本報告的目的是總結第一階段公眾參與期間收到的公眾意見和建議，並對這些意見和建議作出回應。

報告主要包括以下部分：

- 第 1 節 – 項目介紹；
- 第 2 節 – 第一階段公眾參與活動概述；
- 第 3 節 – 主要意見的總結和回應；及
- 第 4 節 – 下一步工作。

2 Stage 1 Public Engagement 第一階段公眾參與

2.1 Objectives 目標

- 2.1.1.1 The Stage 1 Public Engagement (PE1) was conducted between 28 December 2015 and 29 February 2016 to solicit public views on the relocation of Sham Tseng Sewage Treatment Works (STW) into caverns. In order to collect views and suggestions from different sectors of the community, a series of PE activities including roving exhibition, briefing sessions, focus group meetings and a community workshop were conducted. A list of PE1 activities is appended in **Appendix 1**.
第一階段公眾參與已於 2015 年 12 月 28 日至 2016 年 2 月 29 日進行，以諮詢公眾對搬遷深井污水處理廠往岩洞的意見。為了收集社會各界的意見和建議，署方舉辦了一系列公眾參與活動，包括巡迴展覽、簡介會、焦點小組會議和社區工作坊。第一階段公眾參與活動的列表請參閱**附錄 1**。

2.2 Briefing Session 簡介會

- 2.2.1.1 A briefing session to members of the Tsuen Wan District Council (TWDC) was carried out on 14 January 2016 at Tsuen Wan District Office (**Figure 1**). The Chairman, Vice-chairman and elected members of Ting Sham, Tsuen Wan West and Tsuen Wan Rural were participated in the briefing session.
簡介會於 2016 年 1 月 14 日在荃灣民政事務處舉行（**圖一**），出席者包括荃灣區議會主席、副主席及代表汀深、荃灣西和荃灣郊區的議員。



Figure 1 – Briefing Session to TWDC

圖一、荃灣區議會簡介會

2.2.1.2 The TWDC members concerned about the cost of the relocation project, odour issue, environment impact and traffic impact during the construction phase and whether reclamation is required at the released site for further development. The responses to the major views received are included in **Section 3**.

荃灣區議會成員較關注搬遷項目的成本、氣味問題、環境影響和施工期間的交通影響，以及是否需要在釋放土地位置進行填海工程。對主要意見的回應請參閱**第3節**。

2.2.1.3 As there were residents preferring to retain the existing Sham Tseng TSTW, the TWDC members requested for supplementary information including the timeline and the cost of the project, as well as the proposed development scheme of the released site in order to provide the justification of the relocation project.

由於有居民建議保留現有的深井污水處理廠，故荃灣區議會成員要求署方提供補充資料，包括項目的時間表和成本、擬議的土地用途方案，以進一步了解搬遷項目的理由。

2.2.1.4 The TWDC members would like to visit the Stanley STW, the first cavern STW in Hong Kong, to enhance their understanding of relocating a STW into rock caverns.

荃灣區議會成員更希望到訪香港第一個建於岩洞內的污水處理廠 – 赤柱污水處理廠，以幫助他們了解搬遷污水處理廠到岩洞的實際情況。

2.3 Focus Group Meetings 焦點小組會議

2.3.1.1 During the PE1, focus group meetings were conducted and groups with similar interests, e.g. professional institutes, green groups/concern groups and local residents, were invited to the meetings for a focused and detailed discussion on specific topics.

於第一階段公眾參期間，署方與各界人士舉行了焦點小組會議，當中包括專業機構、綠色團體/關注團體和當地居民。

2.3.1.2 Four focus group meetings were carried out in January 2016, which include:

- i) Focus Group Meeting with Professional Institutes
- ii) Focus Group Meeting with Green Groups/Concern Groups

iii) Focus Group Meeting with the Incorporated Owners of Rhine Terrace and the Incorporated Owners of Rhine Garden

iv) Focus Group Meeting with Ocean Pointe Owners' Committee

2016年1月署方與下列單位舉行了四次焦點小組會議：

- i) 專業機構；
- ii) 綠色團體/關注團體；
- iii) 海韻臺及海韻花園居民代表；及
- iv) 縉皇居居民代表。

2.3.1.3 The views and comments received from the focus group meetings are summarised in the **Sections 0 to 2.3.4** below. The responses to the major views received are included in **Section 3**.

第 2.3.2 至 2.3.4 節概述了從焦點小組會議收到的意見和建議。對主要意見的回應請參閱第 3 節。

2.3.2 Focus Group Meeting with Professional Institutes 專業機構焦點小組會議

2.3.2.1 The focus group meeting with professional institutes was held on 18 January 2016 at Arup's office. Total 11 representatives from the Association of Engineering Professionals in Society (AES), the Hong Kong Institution of Engineers (HKIE), the Hong Kong Institution of Surveyors (HKIS), the Hong Kong Institute of Urban Design (HKIUD), and Institution of Civil Engineers (ICE) participated in the meeting (**Figure 2**).

2016年1月18日於奧雅納公司舉行了與專業機構的焦點小組會議（圖二），共有十一位來自不同專業機構的代表參加了是次會議，包括：

- i) 工程界社促會；
- ii) 香港工程師學會；
- iii) 香港測量師學會；
- iv) 香港城市設計學會；及
- v) 英國土木工程師學會。



Figure 2 – Focus Group Meeting with Professional Institutes
圖二、專業機構焦點小組會議

2.3.2.2 Regarding the construction of the new STW, the attendees expressed concerns on the following aspects:

- Benefit of odour control in the relocated Sham Tseng STW;
- Use of excavated rocks;
- Timeline of the relocation project;
- Area of excavation; and
- Project cost.

關於興建新的污水處理廠，參與者對下列議題表示關注：

- 搬遷污水處理廠往岩洞是否能有效地控制氣味；
- 挖掘岩洞得出的岩石用途；
- 搬遷工程的時間表；
- 挖掘岩洞的範圍；及
- 工程成本。

2.3.2.3 Regarding the development of the released site, the attendees expressed concerns on the following aspects:

- Impact on property prices in Sham Tseng if there is residential development in the released site;
- Necessity of having residential development;
- Type of residential development (public or private); and
- Project cost.

關於釋出土地的用途，參與者對下列議題表示關注：

- 發展住宅項目會否影響深井一帶的樓價；
- 是否必要發展住宅項目；
- 住宅項目的類型（公營房屋或私營房屋）；及
- 項目成本。

2.3.2.4 The attendees suggested to have co-development with the nearby Sham Tseng CLP station and/or Garden Bakery, which could release more land for future development.

參與者建議與毗連的中電深井變電站及/或嘉頓麵包廠一併發展，以釋放更多的土地供未來發展。

2.3.3 Focus Group Meeting with Green Groups & Concern Groups 綠色團體/關注團體焦點小組會議

2.3.3.1 The focus group meeting with green groups and concern groups were held on 20 January 2016 at the Hong Kong Central Library (Figure 3). Only a representative from Green Power participated in the meeting.

2016年1月20日於中央圖書館舉行了與綠色力量的焦點小組會議（圖三），共有一位代表參加了是次會議。



Figure 3 – Focus Group Meeting with Green Power
圖三、綠色力量焦點小組會議

2.3.3.2 Regarding the existing and relocated Sham Tseng STW, the attendee inquired about the discharge point of the current effluent, whether the existing submarine outfall would be preserved and whether more land

would be required if the sewage treatment process was to be upgraded to secondary treatment level and if future expansion would be needed.

關於現有和擬議搬遷的深井污水處理廠，參與者詢問現時污水排放點的位置及現有海底排放管是否會保存，若污水處理工程需升級至二級處理或將來需要擴建污水處理廠，是否需要更多土地。

- 2.3.3.3 In terms of the proposed relocation site, the attendee concerned whether any graves would be affected, whether ecological study had been conducted for the proposed site and the portal of the cavern.

關於擬議的搬遷地點，參與者關注會否影響任何墳地，有否對該地點及岩洞出入口進行生態研究。

- 2.3.3.4 Regarding the use of the released land, the attendee inquired whether a public promenade would be constructed under the new development.

關於釋出土地的用途，參與者關注會否在未來發展項目興建公眾海濱長廊。

- 2.3.3.5 The Green Power representative believed that Sham Tseng was not a sensitive area from an environmental point of view and considered that no great impact would be induced by the relocation project.

綠色力量認為從環境角度來看深井不是一個敏感地區，搬遷工程不會對該區產生太大影響。

2.3.4 Focus Group Meetings with Local Residents 當地居民焦點小組會議

- 2.3.4.1 Two focus group meetings were held with the Sham Tseng local residents in January 2016.

於 2016 年 1 月，署方與深井當地居民舉行了兩次焦點小組會議。

Rhine Terrace and Rhine Garden 海韻臺及海韻花園

- 2.3.4.2 The focus group meeting with the Incorporated Owners of Rhine Terrace and Rhine Garden was held on 20 January 2016 at the Rhine Garden Clubhouse (**Figure 4**). Total eight representatives from Rhine

Garden, Rhine Terrace and TWDC (Ting Sham) participated in the meeting.

2016年1月20日於海韻花園會所舉行了與海韻臺及海韻花園業主立案法團的焦點小組會議（圖四），共有八位代表來自海韻臺、海韻花園及荃灣區議會（汀深）參加了是次會議。



Figure 4 – Focus Group Meeting with Rhine Terrace & Rhine Garden
圖四、海韻臺及海韻花園焦點小組會議

2.3.4.3 Regarding the relocation works, the attendees expressed concerns on the following aspects:

- Process of the relocation works and any impacts during construction phase;
- Number of trucks entering and leaving the construction site per day; and
- Any vibration impact from blasting the cavern.

關於搬遷污水處理廠，參與者對下列議題表示關注：

- 搬遷污水處理廠的過程及施工階段會否造成任何影響；
- 每天進出施工現場的車輛數量；及
- 爆破岩洞會否造成任何震動影響。

2.3.4.4 Regarding the future development of the released site, the attendees expressed concerns on the following aspects:

- Whether the future development could provide the facilities to fulfil the community's needs;

- Whether reclamation is required for the future development;
- Any traffic impact during the construction of the future development.

關於釋出土地的用途，參與者對下列議題表示關注：

- 未來發展能否滿足社區設施的需求；
- 未來發展是否需要填海造地；及
- 未來發展施工期間會否造成交通影響。

Ocean Pointe 縉皇居

- 2.3.4.5 The focus group meeting with Ocean Pointe Owners' Committee was held on 26 January 2016 at the Ocean Pointe Clubhouse. Total eight representatives from Ocean Pointe Owners' Committee, Kerry Properties Limited and TWDC (Ting Sham & Tsuen Wan West) participated in the meeting.

2016年1月26日於縉皇居會所舉行了與縉皇居業主委員會的焦點小組會議，共有八位代表來自縉皇居業主委員會、嘉里物業管理服務有限公司及荃灣區議會（汀深及荃灣西）參加了是次會議。

- 2.3.4.6 Regarding the relocation of Sham Tseng STW, the attendees expressed concerns on the following aspects:

- Construction cost of the current sewage treatment works;
- Justification of relocation works since the existing Sham Tseng STW has only been in operation for ten years;
- Selection criteria of Sham Tseng STW as pioneer site for cavern development;
- Sewage treatment capacity of the relocated Sham Tseng STW;
- Whether the relocated Sham Tseng STW would be upgraded according to the predicted increase in population.

關於搬遷深井污水處理廠，參與者對下列議題表示關注：

- 現有深井污水處理廠的建築成本；
- 污水處理廠運作年期只有十年，是否適合搬遷；
- 選擇深井污水處理廠作為岩洞發展先導計劃之一的準則；
- 搬遷往岩洞後的深井污水處理廠的污水處理能力；

- 搬遷往岩洞後的深井污水處理廠否會根據預測的人口增長進行升級工程。

2.3.4.7 Regarding the future development of the released site, the attendees' concerns were similar to the items discussed with the representative from Rhine Garden and Rhine Terrace. Attendees also suggested to include a community hall and cycle track in the future development at the released site.

關於釋出土地的用途，參與者的意見與海韻臺及海韻花園的意見相類似，並建議未來發展項目加入社區會堂及單車徑。

2.4 Community Workshop 社區工作坊

2.4.1.1 The community workshop was held on 30 January 2016 at Sham Tseng Catholic Primary School. There were about 55 participants, including local residents, members of District Council, representative from green groups, members from political parties and the general public.

社區工作坊已於 2016 年 1 月 30 日於深井天主教小學順利舉行。約有 55 名參加者，當中包括本地居民、區議會議員、綠色團體代表、政黨成員及公眾人士。

2.4.1.2 A presentation was given to the participants to introduce the Sham Tseng STW relocation project, followed by a discussion session (**Figure 5 to Figure 8**). The participants were divided into six groups for small group discussion on the following topics:

- i) The Proposed STW Relocation to Cavern;
- ii) Concerns of the Relocation Works/Relocation Site; and
- iii) Potential Land Uses at the Released Site.

社區工作坊首先向參與者介紹搬遷深井污水處理廠往岩洞的計劃，隨後進行小組討論（圖五至圖八）。參與者分為六組，就以下主題進行小組討論：

- i) 建議搬遷深井污水處理廠往岩洞；
- ii) 對於搬遷工程/土地的關注事項；及
- iii) 釋出土地 – 發展機遇。



Figure 5 – Reception of Community Workshop
圖五、社區工作坊接待處



Figure 6 – Presentation during Community Workshop
圖六、社區工作坊的項目介紹



Figure 7 – Discussion Session of Community Workshop
圖七、社區工作坊的小組討論



Figure 8 – Presentation of Discussion Result
圖八、匯報討論結果

2.4.1.3 During the community workshop, most of the participants agreed that the cavern development could benefit the community by lessening odour impact and making the community more visually aesthetic. Some of the participants suggested retaining and upgrading the existing Sham Tseng STW; while some of the participants supported the relocation project, but hesitated to support a residential development on the released site.

社區工作坊進行期間，大多數參與者對岩洞發展可以減少污水處理廠的氣味影響和使社區更加美觀表示贊同。有部分參與者建議保留及升級現有的深井水污水處理廠，亦有部分參與者支持搬遷項目，但不贊成於釋出土地作住宅發展。

2.4.1.4 Regarding the proposed STW relocation site, the participants expressed concerns on the following aspects:

- Any other possible relocation sites;
- Size of the cavern;

- Distance between the relocation site and the nearby residential areas, e.g. Golden Villa, Sham Tseng East Village; and
- Any environmental impact (e.g. traffic, noise & air pollution) or vibration impact during the construction phase.

關於擬議搬遷的地點，參與者對下列議題表示關注：

- 有沒有其他搬遷地點；
- 岩洞的大小；
- 搬遷地點與附近民居的距離，例如：黃金花園、深井東村；及
- 施工階段對環境的影響（如交通、噪音及空氣污染）或震動影響。

2.4.1.5 Regarding the future development of the released site, the participants suggested including facilities such as a community hall, sports centre, youth activities centre, permanent market and library, in the future development as there was a lack of community facilities in the Sham Tseng. Some of the participants objected to have residential development, especially public housing, in the released site, since they worried that the increased population would worsen the traffic condition in Sham Tseng and the new buildings might block the views of the existing buildings; while there were a few supporting residential development in order to mitigate the housing problem.

關於釋出土地的未來發展，參與者建議增加社區設施，例如社區會堂、體育中心、青年活動中心、永久市場及圖書館等。部分參與者擔心於釋出的土地興建住宅（特別是公營房屋）會增加深井人口，加重交通負擔；部分參與者擔心新建築物會阻擋現有建築物的景觀；部分參與者認為發展住宅發可以減輕房屋問題。

2.4.1.6 The responses to the major views received from the workshop are included in **Section 3**.

對於工作坊所收到的主要意見及回應，請參閱**第3節**。

2.5 Roving Exhibitions 巡迴展覽

2.5.1.1 Roving exhibitions were held during 28 December 2015 to 29 January 2016. The period and location of roving exhibitions are summarised in **Table 1** and photos taken at the exhibition locations are shown in **Figure 9** to **Figure 11**.

巡迴展覽已於 2015 年 12 月 28 日至 2016 年 1 月 29 日期間進行。巡迴展覽的時間及地點摘要請見表一，於展覽地點拍攝的照片請見圖九至圖十一。

Table 1 – Period & Location of Roving Exhibitions

表一、巡迴展覽的時間及地點

Period 時間	Location 地點
28/12/2015 – 7/1/2016	Sham Tsz Street Playground, Sham Tseng (next to Sham Tseng STW) 深井深慈街遊樂場 (位於深井污水處理廠旁)
8/1/2016 – 18/1/2016	2/F Lobby, Tsuen Wan Government Offices, 38 Sai Lau Kok Road, Tsuen Wan 荃灣西樓角路 38 號荃灣政府合署 2 樓大堂
19/1/2016 – 29/1/2016	Sham Tseng Temporary Playground, Sham Tseng Tsuen Road, Tsuen Wan 荃灣深井村路深井臨時遊樂場



Figure 9 – Roving Exhibition at Sham Tsz Street Playground
圖九、深慈街遊樂場巡迴展覽



Figure 10 – Roving Exhibition at Tsuen Wan Government Offices
圖十、荃灣政府合署巡迴展覽



Figure 11 – Roving Exhibition at Sham Tseng
圖十一、深井臨時遊樂場巡迴展覽

2.6 Distribution of Publicity Materials 發布宣傳資料

2.6.1.1 A set of publicity materials was designed, posted in the public area or distributed to the public for information. Types of materials include:

- Panels (**Figure 9** to **Figure 11**);
- Digest (**Figure 12**);
- Posters (**Figure 13**);
- Leaflets (**Figure 14**); and
- Banners (**Figure 15** to **Figure 17**).

署方設計了一系列宣傳資料，張貼在公眾地方或派發給市民參考，包括：

- 展板（圖九至圖十一）；
- 摘要（圖十二）；
- 海報（圖十三）；
- 傳單（圖十四）；及
- 橫額（圖十五至圖十七）。

2.6.1.2 The study website was also updated on 28 December 2015 to provide the latest information with convenient access to the public to obtain relevant publicity and consultation materials, the details of the public engagement activities and a platform for comments and suggestions.

本研究的網頁亦同時於 2015 年 12 月 28 日更新，方便市民取得當時有關的宣傳和最新的諮詢資料、公眾參與活動詳情，以及提供發表意見和建議的平台。



Figure 12 – Cover of PE1 Digest
圖十一、第一階段公眾參與摘要封面



Figure 13 – Poster of PE1
圖十一、第一階段公眾參與海報



Figure 14 – Leaflet of PE1
圖十四、第一階段公眾參與傳單



Figure 15 – Banner of PE1
圖十五、第一階段公眾參與宣傳橫額



Figure 16 – Banner of PE1

圖十六、第一階段公眾參與宣傳橫額



Figure 17 – Banner of PE1

圖十七、第一階段公眾參與宣傳橫額

2.7 Written Comments Received 已收集的書面意見

2.7.1.1 During the Stage 1 PE period, there were a total of about 728 written comments received through email, fax and mail. The submissions came from people with different background such as local residents, District Council, green groups, local concern groups and individuals. Their views and suggestions were duly considered and has been taken into account in the Study as appropriate. The responses to the major views received are included in **Section 3**.

在第一階段公眾參與期間，通過電子郵件、傳真和郵件收到約 728 份書面意見。提交意見的人士來自不同背景，例如當地居民、區議會、綠色團體、地區關注團體和獨立人士。他們的意見和建議已在本研究作適當的考慮，對主要意見的回應請參閱**第 3 節**。

3 Summary of Key Comments & Responses 主要意見和回應摘要

3.1 Necessity of Relocating Sham Tseng STW in Caverns 搬遷深井污水處理廠的需要

- 3.1.1.1 Local residents and members from professional institutes agreed that relocating not-in-my-backyard (NIMBY) facilities into caverns is beneficial to the community. By relocating a STW, the odour and visual impact to nearby residents could be minimised.

當地居民和專業機構的成員一致認為將鄰避設施搬遷往岩洞是有益於社區的。重置污水處理廠於岩洞中，能減低對附近居民的氣味及視覺影響。

- 3.1.1.2 Some of the PE1 participants doubted the cost effectiveness of relocating the STW in caverns as the Sham Tseng STW started its operation since 2004, which is relatively new and maintenance fee of facilities in caverns may be increased.

部分第一階段公眾參與者質疑搬遷深井污水處理廠的成本效益，由於深井污水處理廠自 2004 年開始運作，相對於其他污水處理廠較新；加上搬遷往岩洞後，設施的維修費可能會增加。

Response 回應：

Sham Tseng STW has been operating for more than 10 years since 2004. The typical lifespan of electrical and mechanical (E&M) equipment is about 15 to 20 years, depending on the quality of the sewage and the operation and maintenance (O&M) of the facilities. The commencement of demolition of the existing STW is anticipated to be after 2026 to allow time for planning and public consultation of relocation works, design and construction of the new STW. When the relocation is completed, Sham Tseng STW would be operated for more than 20 years and replacement of E&M equipment is required. Furthermore, taking the opportunity of relocation, the capacity of the STW could be increased to 24,000m³ per day to cope with the future development needs in Sham Tseng area.

深井污水處理廠自 2004 年運作至今已超過十年。一般機電設施運作 15 至 20 年後便需要更換，而且往往取決於污水的質量和設施的運作及保養。現有的深井污水處理廠預計會於 2026 年後才開始拆卸，以預留足夠的時間作規劃、公眾諮詢、設計和興建新的污

水處理廠。屆時該污水處理廠已運作了超過20年，機電設施亦需作更換，憑藉此次契機，搬遷廠房可以優化附近的土地用途。

3.2 Proposed Relocation Site for Sham Tseng STW 深井污水處理廠的擬議重置選址

- 3.2.1.1 Some of the PE1 participants queried the proposed site for relocating Sham Tseng STW. Nearby residents, especially residents from Golden Villa and Sham Tseng East Village, expressed concerns about the distance between the proposed site and the residential area being too close.

部分第一階段公眾參與者對深井污水處理廠的擬議重置選址表示關注，附近居民（尤其是黃金花園及深井東村的居民）認為擬議重置的位置與住宅區的距離太近。

Response 回應：

The proposed relocation site is located on the hillside between Castle Peak Road (Sham Tseng Section) and Tuen Mun Road, which was selected after reviewing all possible sites around the area. The geology of the hillside is relatively simple, mostly composed of granite, which is suitable for construction of caverns and geotechnically feasible for the relocation works. The selected location is adjacent to the existing Sham Tseng STW, which minimised the impact on upstream and downstream systems and reduced the overall project costs.

擬議重置選址位於青山公路（深井段）與屯門公路之間的山坡內，是經探討該地區所有潛在的地點後所選出。該山坡的地質相對簡單，大部分由花崗岩組成，適合建造岩洞及進行搬遷污水處理廠的岩土工程。擬議重置的位置與現有的深井污水處理廠相鄰，對上游及下游系統的影響較低，能降低整體項目成本。

- 3.2.1.2 Local residents who participated in the PE1 focus meetings queried about the size of the cavern and whether the future sewage treatment will be upgraded. Representative from a green group concerned if upgrading the STW to secondary treatment level and having future expansion would require more land.

參與第一階段焦點小組會議的當地居民問及岩洞的大小以及未來的污水處理廠會否升級。綠色團體的代表對未來污水處理廠升至二級處理或需要更多土地表示關注。

Response 回應：

As an initiative of EPD to improve the water quality in the coastal area in Sham Tseng, it is proposed to upgrade the relocated sewage treatment works from the currently adopted chemically enhanced primary treatment level to secondary treatment level plus nitrogen removal. By that time, it is anticipated that the water quality in the coastal area in Sham Tseng would be further improved. On the other hand, the area of excavation is dictated by the wastewater treatment technology requirement and it is anticipated that the proposed cavern design could cater for the expansion on design horizon up to year 2051 with a treatment capacity of 24,000m³ per day.

應環境保護署倡議改善深井沿岸水質，擬議重置的污水處理廠的污水處理級別將由一級提升至二級及加入除氮系統。屆時深井沿岸的水質預計會有進一步的改善。另一方面，開挖岩洞的面積是取決於污水處理技術的要求；估計擬議的岩洞設計可滿足於 2051 年之前所需擴展的範圍，污水處理能力為每天 24,000 立方米。

3.2.1.3 Participants of the PE1 focus group meetings queried the location of the new STW entrance and its connection to the cavern.

第一階段焦點小組的參與者詢問了未來污水處理廠的入口位置及與岩洞的連接。

Response 回應：

A vehicular access for the new STW could be provided from the road connecting Castle Peak Road (Sham Tseng Section) and Golden Villa; also a man access could be provided near the roundabout on Castle Peak Road (Sham Tseng Section).

車輛可由青山公路（深井段）連接黃金花園的路段進入，而行人通道則可設置在青山公路（深井段）的迴旋處旁。

3.2.1.4 Participants of PE1 also concerned whether any cemeteries within the proposed site would be affected.

第一階段公眾參與者關心搬遷深井污水處理廠往岩洞會否影響墳地。

Response 回應：

According to the preliminary results of the feature survey, no cemeteries were found within the boundary of the proposed site for relocation of the Sham Tseng STW.

根據初步探討，擬議重置污水處理廠的岩洞範圍內並沒有發現墳地。

3.3 Environmental Impacts 環境影響

3.3.1.1 Participants of PE1 concerned the odour impact of the STW and queried how situation could be improved by relocating the STW into caverns. Furthermore, there were concerns about ventilation method and shaft location in the new STW, whether the discharged air would impair the health of the residents nearby.

第一階段公眾參與者關注污水處理廠的氣味影響，搬遷污水處理廠往岩洞後是否能夠改善情況。此外，參與者詢問了未來污水處理廠的通風方法和通風井位置，擔心排放的氣體會損害附近居民的健康。

Response 回應：

After relocating the STW into the cavern, other than the sealed water tanks and E&M equipment, the cavern would become the natural barrier to deter the air from directly releasing to the external atmosphere outside the cavern, and the ventilation shaft would be located at a high level of the hillside. In general, the released gases from the sewage treatment process composed of hydrogen sulphide (H_2S) and ammonia (NH_3). The typical deodourisation systems adopted by Hong Kong's STWs could achieve 99.5% of removal efficiency. Furthermore, environment assessment would be carried out to ensure the air quality is within the acceptable level set out by the Environmental Protection Department.

搬遷污水處理廠往岩洞後，除了使用密封水缸及機電設備外，岩洞將成為天然屏障以阻止空氣直接釋放至大氣層，而出風口將位於山上較高的位置。污水處理過程中釋放的氣體主要由硫化氫 (H_2S) 和氨 (NH_3) 組成，而香港污水處理廠所採用的典型除味

系統可達到 99.5% 的清除效率。此外，當局會進行環境評估，以確保空氣質素在環境保護署所訂定的可接受水平內。

3.3.1.2 Participants of PE1 also concerned about the environmental impact during construction, such as noise impact, air pollution, marine impact, impact to plants and natural habitat in the proposed relocation site.

第一階段公眾參與者關注施工期間的環境影響，例如噪音影響、空氣污染、海洋影響，以及重置污水處理廠對植物及自然生態的影響。

Response 回應：

Quality Powered Mechanical Equipment (QPME) are suggested to be used for construction, which could minimise the noise impact to nearby residents. Dust control measures, environmental monitoring and assessment would be implemented to keep the site clean. The existing submarine outfall would be retained, and hence, minimised the impact on the marine life. According to the preliminary environmental review results, the natural habitat in the vicinity is unlikely to be affected by the relocation works.

署方建議使用優質機械設備施工以減低對附近居民的噪音影響。另外，署方會實施粉塵控制和環境監測及評估，以保持場地清潔。而現有的海底排放管將會保留，從而減低對海洋生物的影響。根據初步環境審查結果，搬遷工程不會對該區的自然生態造成影響。

3.3.1.3 Local residents from Golden Villa concerned that the new STW would introduce environmental impacts, such as noise from STW daily operation and attraction of rodents and other harmful insects.

黃金花園居民對搬遷深井污水處理廠的環境影響表示關注，例如污水處理廠日常運作的噪音影響會否吸引嚙齒動物和其他有害昆蟲。

Response 回應：

There is no record indicating that the current sewage treatment works attract rodents and other harmful insects. The relocated sewage treatment works will adopt an even more sophisticated technology and design. Moreover, the sewage treatment process will be carried out in sealed equipment and the treated effluent will be discharged through a submarine outfall to Ma Wan Channel after sterilization treatment. Since the relocated sewage treatment works will be located inside the cavern, the equipment will be enclosed inside the cavern and cause no disturbance to the nearby residents.

沒有紀錄顯示現時的污水處理廠會吸引嚙齒動物和其他有害昆蟲。而未來的污水處理廠會採用更先進的技術和設計，污水處理程序將在密封設備內進行，處理後的污水會經過滅菌處理然後由海底排放管排放到馬灣管道。搬遷後的污水處理廠位於岩洞內，而設備會封閉在岩洞內，不會對附近居民造成滋擾。

3.4 Traffic Impact 交通影響

3.4.1.1 Participants of PE1 concerned about the traffic impact during construction phase of the relocation of Sham Tseng STW.

第一階段公眾參與者關心搬遷深井污水處理廠至岩洞的工程會否令交通受到影響。

Response 回應：

According to the preliminary traffic impact assessment, the traffic impact on the Sham Tseng area due to the relocation project is insignificant. Assuming a daily construction period of 8 hours, there would be an additional traffic flow of mostly 14pcu/hour, mainly construction vehicles, and the key junctions are still capable of accommodating the additional traffic flow. It is anticipated that the peak traffic impact period would be during the cavern excavation stage. Standby construction vehicles would be arranged to park within the construction site boundary in order to minimise the traffic impact to nearby area. Further study and assessment would be carried out before the commencement of construction.

根據初步交通影響評估，將深井污水處理廠搬入岩洞對研究區域內或附近地區的交通影響輕微。假定每日施工時間為 8 小時，於建築高峰期在地盤出入口約有不多於每小時 14 架次車輛（主要為工程車），初步交通影響評估顯示關鍵路口仍有能力將行車流量消化。交通影響的高峰期為岩洞挖掘階段，如有工程車輛需排隊等候，工程車將會被安排於地盤範圍內的通道進行，大大減低工程車對附近地區的交通影響。進一步的研究將於稍後進行，以確保施工期間對交通的影響減至最小。

3.5 Geotechnical Impact 岩土影響

3.5.1.1 The proposed relocation site is located on the hillside between Castle Peak Road (Sham Tseng Section) and Tuen Mun Road, which requires cavern blasting excavation, local residents concerned whether nearby

buildings would subject to vibration during the blasting period, whether the building foundations and structures would be affected.

擬議的搬遷地點位於青山公路（深井段）與屯門公路之間的山坡上，需要進行岩洞爆破工程，當地居民擔心在爆破期間附近的建築物會否受到震動及會否影響建築物的基礎和結構。

Response 回應：

Before the commencement of the construction works, a preliminary blasting assessment would be conducted to identify the potential impact on existing infrastructures, which requires approval from the Mines Division of Civil Engineering and Development Department (CEDD). During the blasting period, the vicinity of the site would be monitored to ensure no adverse impact on nearby buildings. Blasting would be subject to stringent requirements imposed by CEDD, e.g. vibration monitoring. Further blasting assessment would be conducted in the next stage of the project. Furthermore, a detailed assessment of the slope within the study area would be conducted to assess their stability. Groundwater information would also be collected for detailed assessment in the next stage of the project.

施工前會進行初步的爆破評估，以確定對現有基礎設施的潛在影響，並獲得土木工程拓展署的批准。在爆破期間，署方會監測附近區域，以確保對附近建築物沒有不良影響。土木工程拓展署對爆破有嚴格的要求，例如進行震動監測。進一步的詳細爆破評估將在項目的下一階段進行。此外，署方會對研究範圍內的斜坡進行詳細評估，以確定其穩定性；及收集地下水的資料，以便在項目的下一階段進行詳細評估。

3.6 Impact on Operation of STW 污水處理廠的運作影響

3.6.1.1 Local residents concerned whether there would be interruption to the operation and power supply of the STW during the transition period, which could possibly cause overflow in the STW and endanger the nearby residents.

當地居民關注在新舊污水處理廠交替期間，污水處理廠的運作和供電會否中斷，從而導致污水溢流，危及附近居民。

Response 回應：

The construction of the new STW in cavern would be completed before demolition of the existing STW to ensure no interruption to its operation. A dual power supply design would be adopted to prevent power outage. During emergency situation, including power outage, workers or staff of the STW would follow the emergency procedure to ensure the safety and health of the nearby residents.

現有的深井污水處理廠會於新污水處理廠落成後才拆卸，以保持其運作。污水處理廠會採用雙電源設計，以防止斷電。在緊急情況下，污水處理廠的工作人員將會遵循緊急程序，以確保附近居民的安全和健康。

3.7 Future Land Use at the Released Site 釋出土地的未來用途

- 3.7.1.1 Some of the PE1 participants believed that the future development of the released site could boost the economy of the Sham Tseng due to increase in population and could provide the opportunity to increase the community facilities (e.g. community hall, market) in the area and extend the existing promenade with more recreational facilities. In addition, some participants believed that a residential development in the released site could mitigate the housing problem.

部分第一階段公眾參與者認為，釋出土地的未來發展可增加人口，帶動深井的經濟，並可提供增加該地區社區設施（例如社區會堂、市場）的機會，及伸延現有的海濱長廊以增加娛樂設施。此外，部分參與者認為於釋出土地作住宅發展可以減輕房屋問題。

- 3.7.1.2 Some of the PE1 participants objected to have residential development in the released site, especially public housing, as this would increase the population in Sham Tseng and would worsen the traffic condition in Sham Tseng. Also, part of the local residents worried that new high-rise buildings might block the views of the existing buildings.

部分第一階段公眾參與者擔心於釋出土地興建住宅會增加深井人口，造成交通負擔。此外，部分當地居民擔心新建築物會阻擋現有建築物的景觀。

Response 回應：

Residential development is an option for the released site. The type and scale of development is currently under planning and the public's concerns and suggestions will be duly considered. According to the results of the preliminary traffic impact assessment conducted under this study, the sections relatively affected by the proposed development

would be the Tuen Mun Road eastbound on-ramp connecting Castle Peak Road – Sham Tseng Section. The actual daily traffic flow of this link road is 1,600 pcu/hour. It is anticipated that the proposed development would induce 10pcu/hour during the peak hours (08:00 – 09:00), i.e. 0.6% additional traffic flow. The design capacity of this link road is 1,900 pcu/hour, the free capacity would be 15% with the additional traffic, i.e. this link road is not saturated. A detailed traffic study will be carried out in the next stage of the project to ensure the traffic impact to the area could be minimised.

住宅發展是釋出土地的用途之一，而住宅類型和發展規模仍處於探索階段，署方會適當考慮有關的公眾意見及建議。跟據初步的交通影響評估，較為影響的位置位於青山公路（深井段）連接屯門公路往九龍方向的路口。該路口的日間參考行車流量為每小時 1,600 架次，預計擬議發展於日間繁忙時間（早上八時至九時）在該路口的新增行車流量大約為每小時 10 架次，新增行車流量大約為 0.6%。該路口的設計交通容量為每小時 1,900 架次，新的行車量／容車量比例（volume/capacity ratio）約為 0.85，即該路口的交通容量尚未飽和。詳細的交通研究會於釋出土地的規劃階段進行，以確保未來發展的交通影響減至最低。

4 Way Forward 下一步工作

4.1 Stage 2 Public Engagement 第二階段公眾參與

- 4.1.1.1 PE1 was completed successfully in January 2016. Public views and suggestions on the Sham Tseng STW relocation project were collected to facilitate next stage's planning and design. Taking into account the comments received from public, further reviews and detailed technical assessments were conducted to address public's concerns.

第一段公眾參與活動已於 2016 年 1 月順利完成，以收集公眾對深井污水處理廠搬遷工程的意見及建議，以便下一階段的規劃及設計。考慮到公眾提出的意見，署方已作進一步的審視和詳細技術評估以解決公眾的關注。

- 4.1.1.2 Stage 2 Public Engagement (PE2) will be launched in March 2017. Views and suggestions collected from public during PE1 and responses will be reported to the public via PE2 activities, including roving exhibitions, public forum and focus group meetings. Furthermore, the preliminary planning scheme of the released site will be introduced to the public and stakeholders via PE2 in order to collect further views and comments for next stage's planning and design.

第二階段公眾參與活動（包括巡迴展覽、公眾論壇及焦點小組會議）於 2017 年 3 月展開，以匯報第一段公眾參與所收集的意見及建議。此外，署方希望透過第二階段公眾參與活動向公眾及持分者介紹釋出土地的初步規劃方案，以收集意見及建議，方便下一階段的規劃和設計。

4.2 Schedule of Stage 2 Public Engagement 第二階段公眾參與時間表

- 4.2.1.1 The proposed dates and venues of PE2 activities are summarised in **Table 2** below.

第二段公眾參與活動的擬議日期及地點請見表二。

Table 2 – Schedule of PE2 activities
表二、第二階段公眾參與活動時間表

Activity 活動	Date 日期	Description 描述
Focus Group Meetings 焦點小組會議	March 2017 2017年3月	Meeting with the local residents, listen to their views and answer their queries related to the relocation project. 與當地居民會面，聽取他們的意見，以及回答他們對搬遷項目的疑問。
Roving Exhibitions 巡迴展覽	March – April 2017 2017年3月至4月	Display panels will be set up in the public areas to report the outcome of PE1 and introduce the scheme of future development. 於公共地方設立展板，匯報第一階段公眾活動的成果，並介紹未來發展方案。
Public Forum 公眾論壇	April 2017 2017年4月	The general public, including related parties and local residents, are welcome to join the forum to express their views on the relocation project. 歡迎廣大市民，包括有關人士及當地居民參加公眾論壇，就搬遷計劃表達意見。

Appendix 1 附錄 1

List of PE1 Activities

第一段公眾參與活動列表

List of Stage 1 Public Engagement Activities 第一階段公眾參與活動列表

Roving Exhibitions 巡迴展覽	
Locations 地點	Dates 日期 (D日 / M月 / Y年)
Sham Tsz Street Playground 深井深慈街遊樂場	28/12/2015 - 7/1/2016
Tsuen Wan Government Offices 荃灣政府合署	8/1/2016 - 18/1/2016
Sham Tseng Temporary Playground 深井臨時遊樂場	19/1/2016 - 29/1/2016
Community Engagement Activities 社區參與活動	
Activities 活動	Dates 日期 (D日 / M月 / Y年)
Briefing Session to Tsuen Wan District Council 荃灣區議會簡介會	14/1/2016
Focus Group Meeting with Professional Institutes 與專業機構的焦點小組會議	18/1/2016
Focus Group Meeting with Green Groups/ Concern Groups 與綠色團體/關注團體的焦點小組會議	20/1/2016
Focus Group Meeting with the Incorporated Owners of Rhine Terrace and the Incorporated Owners of Rhine Garden 與海韻臺及海韻花園的焦點小組會議	20/1/2016
Focus Group Meeting with Ocean Pointe Owners' Committee 與縉皇居的焦點小組會議	26/1/2016
Community Workshop (held at Sham Tseng Catholic Primary School) 社區工作坊 (於深井天主教小學舉 行)	30/1/2016