Proposed Explosive Magazine Site at Tseung Kwan O Area 137 for Tseung Kwan O – Lam Tin Tunnel

Project Profile (Revised Final)

March 2017

Submitted to

Leighton-China State JV

Prepared By

Meinhardt Infrastructure and Environment Ltd

Date	Revision	Prepared By	Checked By	Approved By
30 November 2016	0	Various	WK CHIU	Helen COCHRANE
9 February 2017	1	Various	WK CHIU	Helen COCHRANE
24 February 2017	2	Various	WK CHIU	Helen COCHRANE
8 March 2017	3	Various	WK CHIU	Helen COCHRANE

Contents

1.0 BASIC INFORMATION.....1

2.0 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME.....3

3.0 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT.....4

4.0 POSSIBLE IMPACTS ON THE ENVIRONMENT 5

5.0 ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE PROJECT.....5

6.0 USE OF PREVIOUSLY APPROVED EIA REPORT 9

Appendix

Appendix A Location and Layout Plan of the Proposed Magazine Site and the Transportation Routes

1.0 BASIC INFORMATION

1.1 Project Title

1.1.1 Proposed Explosive Magazine Site at Tseung Kwan O Area 137 for Tseung Kwan O – Lam Tin Tunnel (The Project).

1.2 Purpose and Nature of the Project

Background

1.2.1 Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) commenced construction works since July 2016. Under the current design, TKO-LTT would be constructed by drill & blast method and the explosives would be delivered by Mines Division of Civil Engineering and Development Department (CEDD) during daytime. According to the approved TKO-LTT EIA and its Environmental Permit (EP), no overnight storage of explosive on site shall be permitted for the construction of the TKO-LTT. This would limit the tunnel blasting cycle and the subsequent site excavation and mucking out activities which could lead to additional or extended environmental impacts (e.g. construction noise and dust).

1.2.2 The blasting works would be carried out in the Lam Tin Tunnel and also within the Railway Protection Zone (RPZ) at the Lam Tin Interchange. In order to minimize the risk to MTR operations during daytime, tunnel blasting activities within the RPZ is suggested to be carried out during non-traffic hour which is however out of the operation hours of Mines Division. Hence, in order to optimize and allow flexibility of the blasting operations, it is proposed that the role of delivery of explosive will be taken up by the Contractor and the explosive will be stored at a magazine site.

1.2.3 The magazine site will be used for blasting works in the Lam Tin Tunnel and also within the RPZ at the Lam Tin Interchange (LTI). Subject to approval by Mines Division of CEDD, the use of the magazine site has the benefit of enabling non-traffic hour tunnel blasting (around 0130 to 0430) and non-peak hour surface blasting (around 1200 to 1500) to minimize the risk to MTR operations, with resultant higher charge weights being permitted to reduce excavation durations.

1.2.4 In order to minimize the environmental impacts including the hazard impact due to the construction and operation of magazine site, close proximity to the TKO-TLL and a remote area is preferred. Preliminary site selection has been carried out and Tseung Kwan O Area 137 (TKO 137) was found feasible for the construction and operation of magazine site. In addition, TKO 137 was originally used as the temporary magazine site for the construction of Kwun Tong Extension (KTE) and Shatin to Central Link – Tai Wai to Hung Hom Section (SCL (TAW-HUH)) by Mass Transit Railway Corporation (MTRC) since mid-2011 to mid-2016. The site was then demolished and left vacant after use. Hence, no additional construction activities (e.g. site formation works) were required and the vacant site is ready for use.

1.2.5 The scope of Project comprises of construction, operation and decommissioning of the proposed magazine site in TKO 137 for the construction of TKO-LTT.

1.2.6 The proposed magazine site is generally designed to store sufficient quantities of explosives for two days so as to allow optimum delivery times of explosives to work sites and provide a buffer in the event of delivery interruption to the magazine site by Mines Division.

1.2.7 The proposed magazine site will have two one-storey stores of total capacity of 600kg of explosive. Subject to approval by Mines Division of CEDD, the magazine site would be operating 6 days per week and the detonators and the explosive would be delivered on land based route by the Contractor's trucks approved by Mines Division of CEDD to the blasting site with a maximum of 200kg (detonators and explosives).

Consideration of Alternatives

1.2.8 Construction of an on-site temporary storage of explosive at LTI would involve site formation activities and construction of ramp for unloading the explosive by Mines Division, these may prolong the construction programme and the associated environmental impacts (e.g. construction noise and dust). In terms of safety reason, in accordance with the Schedule 5 of the UK Explosives Regulations 2014, the on-site temporary storage of explosive would require an approximate 70m buffer distance of minor road (i.e. access road within the construction site), which is equal to an approximate 150m x 150m non-construction area, this would limit the construction works in the LTI and would prolong the construction programme. Hence, construction of on-site temporary storage of explosive is considered inappropriate in this TKO-LTT.

1.2.9 Potential marine route from the TKO 137 to the temporary barging point of the TKO-LTT, i.e. Yau Tong Bay at Cha Kwo Ling, has been investigated. In the current practice, Mines Division would deliver the explosive to TKO 137 and then deliver to other construction sites by land base transportation. In the TKO-LTT project, the explosive could be delivered by marine route from TKO 137 to temporary barging point at Cha Kwo Ling subject to Mines Division's arrangement. However, under the Dangerous Goods Ordinance, transportation of explosive within Victoria Harbour (from TKO 137 to Cha Kwo Ling) is only allowed between sunrise and sunset. Hence, the explosive could only be delivered to the blasting site during daytime which is the MTR operation hours. As mentioned in **Section 1.2.2**, to facilitate blasting operation during the MTR non-traffic hours, marine route transportation would limit the flexibility of blasting schedule and hence marine route transportation is considered inappropriate in this TKO-LTT.

1.3 Name of Project Proponent

Project Proponent

1.3.1 Civil Engineering and Development Department (CEDD)

Applicant

1.3.2 Leighton-China State JV

1.4 Location and Scale of the Project and History of the Project Site

1.4.1 The magazine site is proposed to locate at the TKO 137. The location and layout plan of the magazine site and the transportation routes to the delivering point is presented in **Appendix A**. Route A is the transportation route that is currently ultised by the Mines Division and Route B is an alternative transportation route that would under consideration for further assessment. The delivery of the explosive to the blasting site would be carried out by the Contractor.

1.4.2 The site of TKO 137 was formed by reclamation from 1997 onwards by using the public fill it received. Starting from end 2002, most of the reclaimed area has been used as fill bank to temporarily store the public fill.

1.4.3 At the southern portion of TKO 137 was then used as a temporary magazine site for the construction of KTE and SCL (TAW-HUH) by MTRC since mid-2011 to mid-2016. The temporary magazine site was then demolished and left vacant.

1.5 Number and Types of Designated Projects to be Covered by Project Profile

1.5.1 In accordance to Part 1 of Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO), the construction and operation of the magazine site shall be classified as a Designated Project (DP) in accordance with Item K.10 of Part I of Schedule 2 of the EIAO. The decommissioning of the magazine site shall be classified as a DP in accordance with Item 11 of Part II of Schedule 2 of the EIAO. A summary of the identified DPs is as follow:

- Item K.10 of Part I: An explosives depot or explosives manufacturing plant in a stand-alone, purpose built building.
- Item 11 of Part II: An explosives depot or explosives manufacturing plant.

1.5.2 An Environmental Permit is required to be granted from the Environmental Protection Department (EPD) before the commencement of the construction, operation and decommissioning of the magazine site.

1.6 Name and Telephone Number of Contact Persons

Name: Mr OR Chung Ming
Post: Senior Engineer, New Territories East Development Office, Civil Engineering and Development Department
Address: Suite 1213, Chinachem Golden Plaza, 77 Mody Road, Tsimshatsui East
Telephone: 2301 1367
Fax: 2721 8630

Name: Mr SIU Wai Lun, Billy
Post: Senior Resident Engineer, AECOM
Address: 8/F, Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Shatin
Telephone: 5599 7402
Fax: 2759 1698

Name: Mr NGAI Chi To, Weyman
Post: Blasting Engineer, Leighton-China State JV
Address: 210, Cha Kwo Ling Road, Kwun Tong, Kowloon
Telephone: 3973 1700
Fax: 2529 8784

2.0 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Project Planning

2.1.1 Meinhardt Infrastructure and Environment Limited (MIEL) has been appointed by Leighton-China State JV as the environmental consultant to prepare this Project Profile.

2.1.2 The design and implementation of the project will be undertaken by Leighton-China State JV in conjunction with CEDD and consultants.

2.2 Project Implementation Programme

2.2.1 The tentative key stages of the Project are shown in **Table 2.1** as follows:

Table 2.1 Tentative Programme of the Project

Activities	Key Milestone Dates
Construction	November 2017
Operation	March 2018
Decommissioning	November 2018

2.3 Interfacing with Other Projects

2.3.1 According to the approved EIA Report "Agreement No. CE21/2012 (WS) – Desalination Plant at Tseung Kwan O – Feasibility Study" (AEIAR 192/2015), a desalination plant is proposed at TKO 137 and tentatively to commence construction in mid-2017. According to the latest information, the construction of the desalination plant is under review. The decommissioning of the magazine site would be completed (tentatively by Q4 2018) and the site would be handed over to the relevant government departments.

3.0 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

3.1 Surrounding Land Use of the Project

3.1.1 The Project site falls within an area zoned "Other Specified Uses (OU)" on the Draft Tseung Kwan O Outline Zoning Plan No. S/TKO/23.

3.1.2 TKO Area 137 is located to the south of the Southeast New Territories (SENT) Landfill and the Tseung Kwan O Industrial Estate. It faces the Clearwater Bay Country Park to its east, the Joss House Bay to its south and the Tathong Channel to its west. The nearest residential areas are the LOHAS Park which is located about 3km at the north of the site and the village houses of Tung Lung Island about 2km at the south of the site.

3.1.3 Clear Water Bay Country Park is located next to TKO 137, but the proposed magazine site would not be encroached into the country park. According to Table 5.28 of the approved SCL (TAW – HUH) EIA, the habitat of the proposed magazine site is wasteground and channelized watercourses with Low and Low to Moderate ecological value. The channelized watercourse was covered for the use of the magazine site for SCL (TAW – HUH) and KTE and the magazine site was left vacant after use.

3.1.4 There is no cultural heritage resources were identified in the vicinity of the proposed magazine site. The nearest cultural heritage resources would be the Fat Tau Chau Old Chinese Customs which is a Declared Monument and Fat Tau Chau House Ruin Sites of Archaeological Interest located at about 2km to the north of the site and a Rock Carving on Tung Lung Chau Declared Monument at about 1.5km to the south of the site.

4.0 POSSIBLE IMPACTS ON THE ENVIRONMENT

4.1 Potential Environmental Impacts

4.1.1 As mentioned in **Section 1.4**, the site was occupied by MTRC for magazine site for the construction of SCL and KTE. According to the approved KTE EIA, SCL (TAW-HUH) EIA and its' VEP Supporting Document (VEP-495/2016), air quality, noise, water quality, waste management, ecology, cultural heritage, landscaping and visual outlook impacts are not expected to be significant for the proposed construction, operation and decommissioning activities of the proposed magazine site in TKO137 with the implementation of appropriate good site practice.

4.1.2 The proposed explosives magazine site is not within consultation zones of any Potentially Hazardous Installations. Explosives will be temporarily stored at the explosives magazine and then transported to the worksites. The major potential environmental issue to be addressed is risk of hazard to life due to explosives storage at the magazine, explosives transport from magazine to the worksites by approved trucks and the use of explosives. Quantitative risk assessment will be conducted to determine the risk due to storage, transport and use of explosives.

5.0 ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE PROJECT

5.1 Construction Phase

Fugitive Construction Dust

5.1.1 Good site practices for dust control as stipulated in the Air Pollution Control (Construction Dust) Regulation and necessary dust suppression measures would be implemented by the Contractor of the Project to reduce the fugitive dust impact. These measures would be incorporated into the specifications for the works contract.

Construction Noise

5.1.2 Given the nearest NSR, Tung Lung Chau, is located 2km away, no noise impact is anticipated with the implementation of appropriate noise control measures including the use of quieter PME. Avoiding carrying out concurrent noisy construction activities in accordance with EPD's ProPECC Note PN 2/93, would further minimise the construction noise levels.

Water Quality

5.1.3 Sufficient water pollution control measures would be implemented in accordance with ProPECC Note PN1/94 to alleviate the potential water quality impacts including construction site runoff and accidental chemical spillage. Runoff from the construction site would be properly collected and treated to ensure the effluent complies with Water Pollution Control Ordinance. Channels, earth bunds or sand bag barriers would be provided onsite to properly direct surface runoff to such silt removal facilities. Sediment traps, channels and manholes would be maintained and the deposited silt and grit would be removed on regular basis. Silt removal facilities would be installed prior to discharge.

Waste Implications

5.1.4 In order to properly manage the waste generation and disposal at the construction site, a Waste Management and Disposal Plan would be executed by the Contractor. Trip-ticket system for construction wastes should be closely monitored. The disposal of chemical waste including oil/lubricant would comply with Waste Disposal (Chemical Waste) (General) Regulations. All chemical wastes will be handled in accordance with the EPD's Code of Practice on the Packaging, Labelling and Storage of Chemical Waste and a licensed collector will be employed for the collection of the chemical waste generated to the licensed disposal facilities (e.g. Chemical Waste Treatment Facility at Tsing Yi). Hence, no adverse environmental impact would be anticipated due to the management of a small quantity of chemical waste to be generated from the Project. Recycling bins and refuse collection facilities for general refuse would be placed in the Project site. Therefore, minimal or no impact would be expected from the refuse generated by the Project.

Land Contamination

5.1.5 According to the approved Contamination Assessment Report for Magazine Site at TKO Area 137 (June 2016) submitted under EP Condition 2.36 of SCL (TAW-HUH), no contamination was identified on the site and no remediation action is required. Hence, no mitigation measures are required before the construction phase.

Cultural Heritage

5.1.6 As it is anticipated that there would be no impacts on the cultural heritage, no mitigation measures are required.

Landscape and Visual Impact

5.1.7 As it is anticipated that there would be no landscape and visual impacts, no mitigation measures are required.

Ecology

5.1.8 As it is anticipated that there would be no terrestrial ecology impacts, no mitigation measures are required.

Hazard to Life

5.1.9 As it is anticipated that there would be no impacts on hazard to life, no mitigation measures are required.

5.2 Operational Phase

Air Quality

5.2.1 Given that the magazine site is for the storage purpose, it is anticipated that there would be no air quality impact, no mitigation measures are required.

Noise

5.2.2 Given that the magazine site is for the storage purpose, it is anticipated that there would be no noise impact, no mitigation measures are required.

Water Quality

5.2.3 There should be only a limited number of security guards inside the magazine site, hence it is anticipated that only limited sewage and only a very small amount of wastewater arisen from housekeeping cleaning will be generated from the project site during the operational phase. Chemical toilet would be provided on site and wastewater/ waste would be regularly collected by a licensed contractor.

5.2.4 Based on the above, it is anticipated that there would be no adverse impacts on the water quality. No mitigation measures would be required.

Waste Management

5.2.5 The operational phase of the Project is not expected to generate any significant quantities of waste. As a result, no significant waste implications during the operational phase would be anticipated.

Land Contamination

5.2.6 During the operational phase, the magazine site would be situated on the concrete slab and would be concrete paved, any chemical within the magazine site would be stored properly with drip tray, the potential land contamination issue is anticipated minimal.

Landscape and Visual Impact

5.2.7 There are only two one-storey magazine stores together with the associated facilities (e.g. guard house and water tank etc.), which is less than the magazine site in the approved SCL (TAW-HUH) EIA, and as such, it is considered that the landscape and visual impact of the proposed magazine site would be minor as compared to the SCL (TAW-HUH). Hence, no mitigation measures would be required.

Ecology

5.2.8 As it is anticipated that there would be no terrestrial ecology impacts, no mitigation measures are required.

Cultural Heritage

5.2.9 As it is anticipated that there would be no impacts on the cultural heritage, no mitigation measures would be required.

Hazard to Life

5.2.10 Potential hazards associated with the temporary storage, transport and use of explosives will be assessed. The potential impact on the explosives offloading pier adjacent to the proposed storage magazine site will also be assessed. Necessary mitigation measures will be proposed during EIA process.

5.3 Decommissioning Phase

Air Quality

5.3.1 Good site practices for dust control as stipulated in the Air Pollution Control (Construction Dust) Regulation and necessary dust suppression measures would be

implemented by the Contractor of the Project to reduce the fugitive dust impact. These measures would be incorporated into the specifications for the works contract.

Noise

5.3.2 Given the nearest NSR, Tung Lung Chau, is located 2km away, no noise impact is anticipated with the implementation of appropriate noise control measures including the use of quieter PME. Avoiding carrying out concurrent noisy construction activities in accordance with EPD's ProPECC Note PN 2/93, would further minimise the construction noise levels.

Water Quality

5.3.3 All the works are land-based and the site runoff generated during the decommissioning works will be very limited. In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), best management practices would be implemented on site as far as practicable,

Waste Management

5.3.4 The major types of solid waste likely to be generated from the decommissioning works include construction and demolition (C&D) materials, general refuse and chemical waste. However, considering the relatively small scale of the proposed works, extensive quantity of C&D waste is not anticipated. Waste management hierarchy will be followed when managing the waste. Priority will be given to avoidance, minimisation, followed by recycling and reuse, disposal of waste will only be considered as the last resort.

Land Contamination

5.3.5 Good site practices (e.g. appropriate handling/ disposal of waste oil) will be adopted during the decommissioning works and there is only limited number of equipment using oils will be used for decommissioning works. In addition, the magazine site would be concrete paved. Hence, the potential land contamination issue during the decommissioning phase is anticipated minimal.

Landscape and Visual Impact

5.3.6 As it is anticipated that there would be no landscape and visual impacts, no mitigation measures would be required.

Ecology

5.3.7 As it is anticipated that there would be no terrestrial ecology impacts, no mitigation measures are required.

Cultural Heritage

5.3.8 As it is anticipated that there would be no impacts on the cultural heritage, no mitigation measures would be required.

Hazard to Life

5.3.9 As it is anticipated that there would be no impacts on hazard to life, no mitigation measures are required.

5.4 Severity, Distribution and Duration of Environmental Effects and Further Implications

5.4.1 Subject to the findings of assessments, effective control and mitigation measures will be identified to ensure the impacts to acceptable level. The possible severity, distribution and duration of environmental effects such as beneficial and adverse effects; short and long term effects; secondary and induced effects; cumulative effects and transboundary effects will be considered and addressed in the EIA, where applicable. The key results from public consultation etc. should also be documented in the EIA.

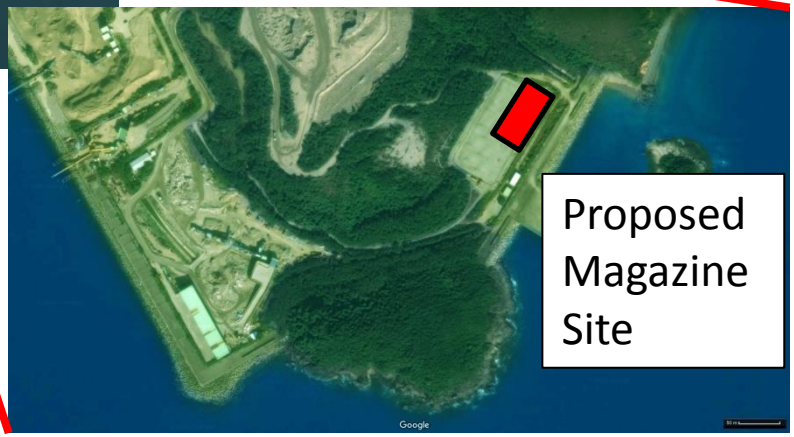
6.0 USE OF PREVIOUSLY APPROVED EIA REPORT

6.1.1 The following approved EIA report will be used as references in this study:

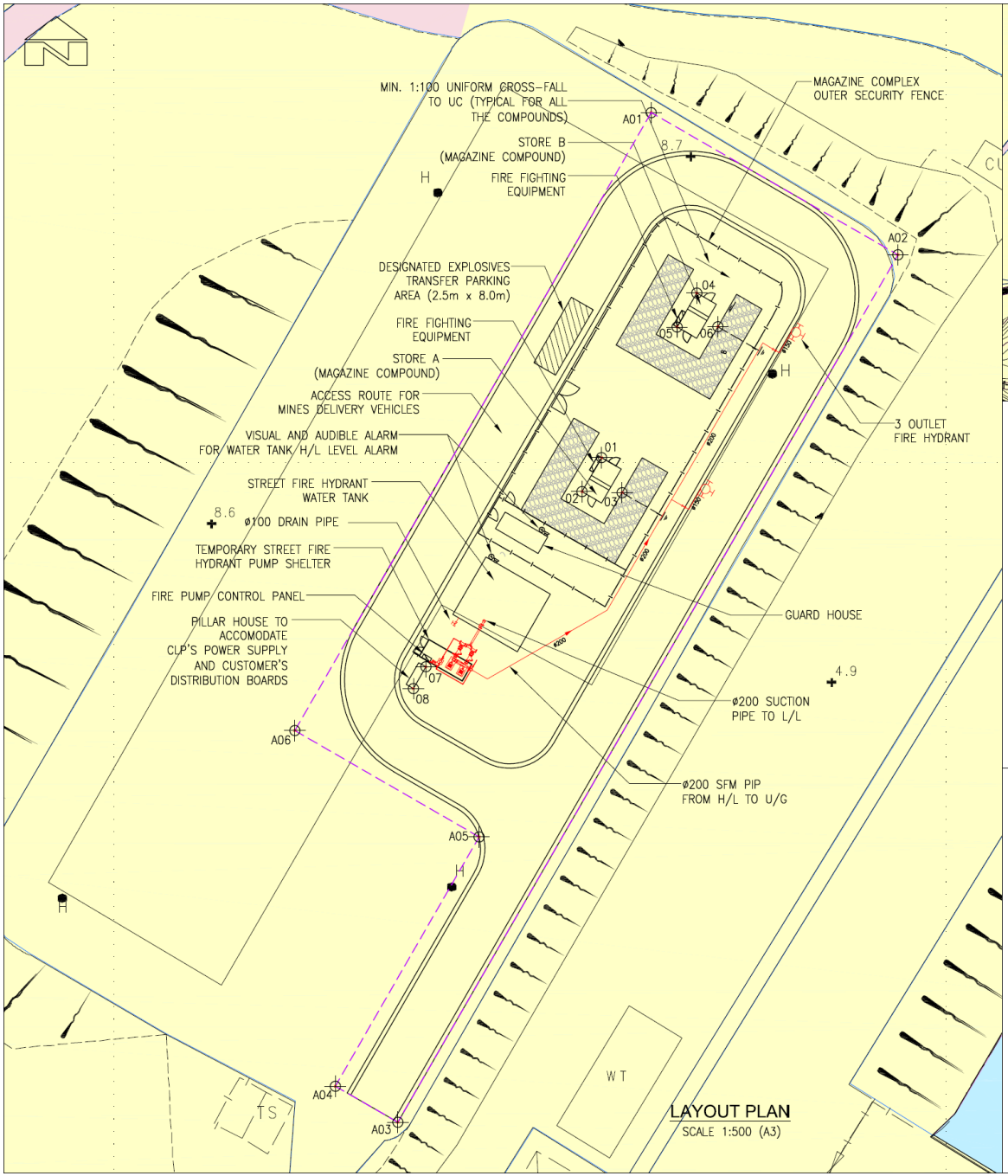
- Kwun Tong Line Extension (EIA Register No.: AEIAR-154/2010, approved in August 2010).
- Shatin to Central Link - Tai Wai to Hung Hom Section (EIA Register No.: AEIAR-167/2012, approved in February 2012).
- Desalination Plant at Tseung Kwan O (EIA Register No.: AEIAR-192/2015, approved in November 2015).

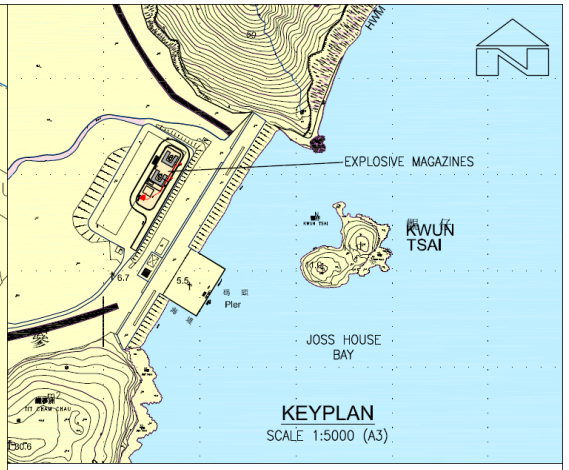
Appendix

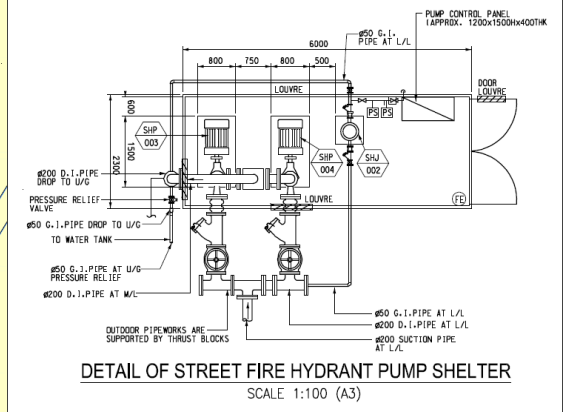
Appendix A
Location of the Proposed Magazine Site and the Transportation Routes



Appendix A Proposed Magazine Site in TKO 137







DETAIL OF STREET FIRE HYDRANT PUMP SHELTER
SCALE 1:100 (A3)

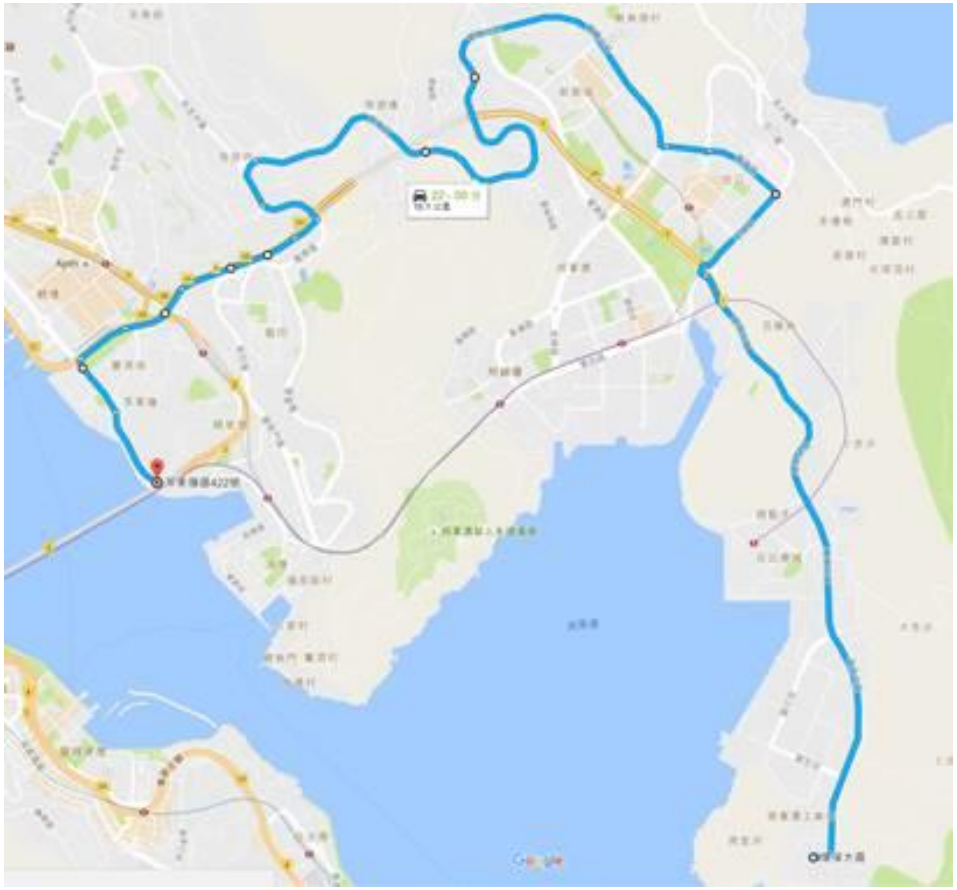
SETTING OUT POINTS

SOP MARK	EASTING	NORTHING
01	846658.593	814100.611
02	846656.235	814096.533
03	846661.055	814096.414
04	846670.028	814120.396
05	846667.667	814116.312
06	846672.568	814116.342
07	846637.489	814075.491
08	846635.972	814072.867

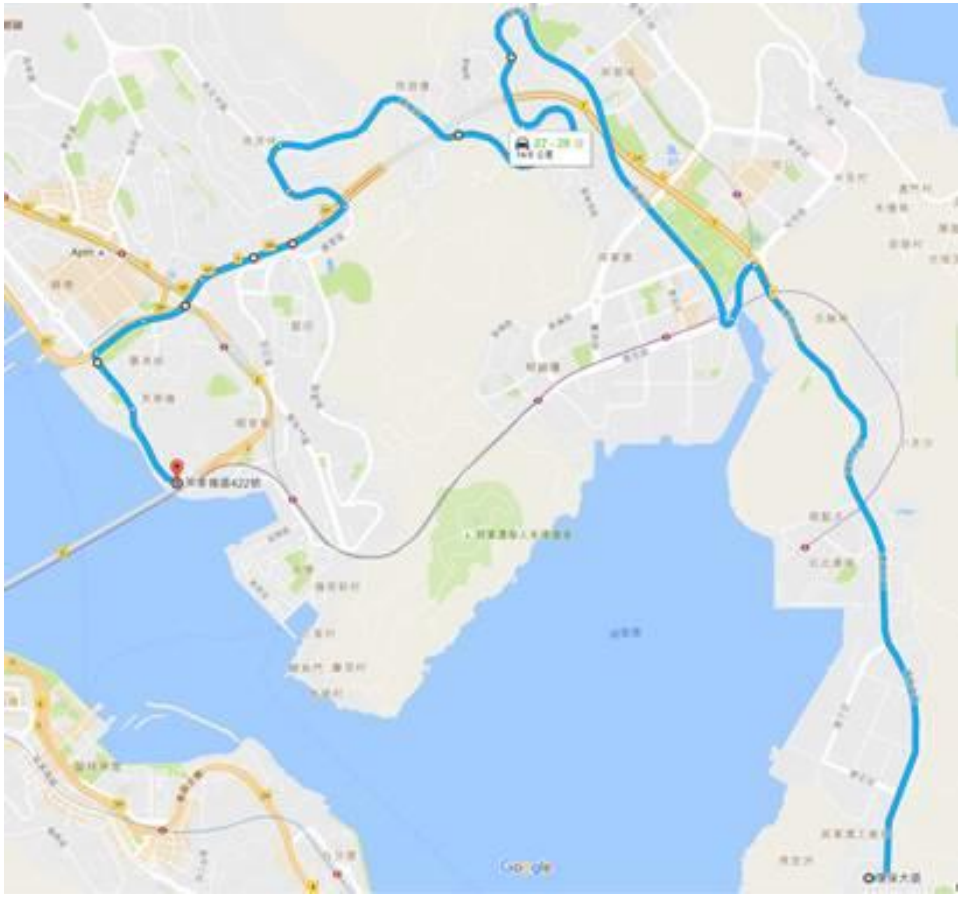
AREA COVERAGE SETTING OUT POINTS

SOP MARK	EASTING	NORTHING
A01	846664.550	814142.063
A02	846694.204	814124.985
A03	846634.108	814020.791
A04	846626.602	814025.120
A05	846643.873	814055.066
A06	846621.738	814067.832

Appendix A Proposed Magazine Site Layout Plan



Route A - Wan Po Road -> Chiu Shun Road -> Po Ning Road -> Po Lam Road North -> Po Lam Road -> Sau Mau Ping Road -> Lin Tak Road -> TKO Road -> Wai Fat Road -> Wai Yip Street -> Cha Kwo Ling Road. Total 15.1 km



Route B - Wan Po Road ->Po Yup Road -> Po Hong Road -> Po Lam Road North -> Po Lam Road -> Sau Mau Ping Road -> Lin Tak Road -> TKO Road -> Wai Fat Road -> Wai YiP Street -> Cha Kwo Ling Road. Total 14.6 km

Appendix A Proposed Transportation Routes

Meinhardt Infrastructure and Environment Ltd
邁進基建環保工程顧問有限公司

10/F Genesis
33-35 Wong Chuk Hang Road
Hong Kong
香港黃竹坑道33-35號
創協坊10樓

Tel 電話: +852 2858 0738
Fax 傳真: +852 2540 1580

mail@meinhardt.com.hk
www.meinhardt-china.com
www.meinhardtgroup.com