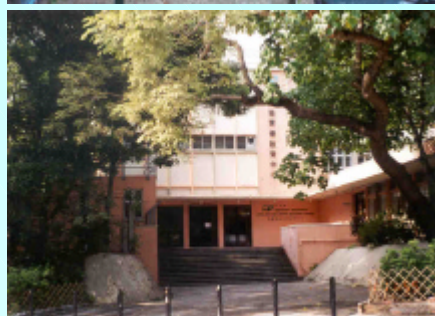




**Water Supplies Department
Hong Kong Special Administrative Region Government**



**The Decommissioning of Underground Fuel Tanks at
Tsuen Wan No.1 Pumping Station
Environmental Impact Assessment**

Executive Summary

ARUP

Ove Arup & Partners (HK) Ltd.

December 2001

Job title	The Decommissioning of Underground Fuel Tanks at Tsuen Wan No.1 Pumping Station Environmental Impact Assessment			Job number	23173
Document title	Executive Summary			File reference	
Document ref					
Revision	Date	Filename	G:\env\project\23173\report\Ms4\23173-10.doc		
First Issue	01-08-2001	Description	Executive Summary		
			Prepared by	Checked by	Approved by
		Name	Various	Franki Chiu	Sam Tsoi
		Signature			
Second Issue	18-10-2001	Filename	G:\env\project\23173\reports\Ms4 (revised)\23173-10a.doc		
		Description	Executive Summary		
			Prepared by	Checked by	Approved by
		Name	Various	Franki Chiu	Sam Tsoi
		Signature			
Third Issue	17-12-2001	Filename	G:\env\project\23173\reports\Ms4 (2nd revised)\23173-10b.doc		
		Description	Executive Summary		
			Prepared by	Checked by	Approved by
		Name	Various	Franki Chiu	Sam Tsoi
		Signature		<i>Franki Chiu</i>	<i>Sam</i>
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			

Issue Document Verification with Document



	PAGE
1 INTRODUCTION.....	1
1.1 Background.....	1
1.2 Site Description and Demolition Methodology	1
2 CONSTRUCTION NOISE ASSESSMENT	1
3 AIR QUALITY ASSESSMENT	2
4 LAND CONTAMINATION ASSESSMENT	2
5 CULTURAL HERITAGE ASSESSMENT	3
6 WASTE MANAGEMENT IMPLICATIONS	3
7 WATER QUALITY ASSESSMENT.....	3
8 ENVIRONMENTAL MONITORING AND AUDITING PROGRAMME	3
9 CONCLUSION.....	4

1 INTRODUCTION

1.1 Background

Ove Arup & Partners (Arup) was commissioned by the Water Supplies Department (WSD) to conduct an Environmental Impact Assessment (EIA) Study for the decommissioning of underground fuel tanks at Tsuen Wan No.1 Pumping Station. This decommissioning work forms part of the project - uprating the safety, reliability and efficiency of the aged mechanical and electrical plant at Tsuen Wan No. 1 Pumping Station.

The work element – decommissioning and removal of the underground diesel fuel storage tanks, of the Project is categorized under Item 16 Part II of Schedule 2 of the Environmental Impact Assessment Ordinance (Cap 499) (EIAO) as a Designated Project. An EIA study has been carried out in accordance with the Study Brief (ESB-045/1999) issued by Environmental Protection Department (EPD) in January 2000.

The potential environmental impacts arising from the proposed works have been assessed in the EIA report. The impact assessments include construction noise, air quality, land contamination, cultural heritage, waste management and water quality.

1.2 Site Description and Demolition Methodology

Tsuen Wan No.1 Pumping Station is situated at the southeast corner of the intersection between Wai Tsuen Road and Miu Kong Street ([Appendix 1](#)). It is surrounded by various sensitive receivers, which include residential buildings, education centres, an indoor recreation centre and historical buildings.

The methodology of decommissioning and removal of the underground diesel tanks are summarised as follows:

- The top soil (turf) will be removed to expose the concrete slab cover;
- The concrete slab cover will be removed and broken up;
- The diesel storage tanks will be cleaned of diesel residue before dismantling;
- The cleaned diesel storage tanks and the associated pipeline will be dismantled by flame-cutting method;
- The underground concrete chamber and the concrete pedestals will be broken up by hand held breaker, and the spoils will be removed by excavator and dump trucks; and
- The empty void will be filled up by soil and/or other suitable materials.

2 CONSTRUCTION NOISE ASSESSMENT

The decommissioning works will be undertaken from June 2002 to December 2002 during normal working hours (ie 0700 to 1900 hours on any day other than Sunday or public holiday). The work will employ only small number of Power Mechanical Equipment (PME) such as:

- Hand held breaker (1 unit, mass $\leq 10\text{kg}$);

- air compressor (1 unit, air flow \leq 10m³/min);
- Excavator (1 unit); and
- Crane-mounted Truck/ Lorry (1 unit).

Under the unmitigated scenario, only two nearest Noise Sensitive Receivers (NSRs) will exceed the daytime construction noise criteria. The maximum noise levels predicted were 84dB(A) at Caritas Adult Education Centre and 81dB(A) at Fong Hon Chu Gifted Education Centre. The dominant noise sources were excavator and crane-mounted truck/ lorry.

Good site practices have therefore been proposed to reduce the noise impacts. These measures include sequencing the separate use of PME, limiting the operation time of the plant, the use of silenced PME and installation of temporary/ movable barriers.

With the recommended mitigation measures, construction noise impacts could be controlled to within the statutory noise limits. An environmental monitoring and audit programme will also be implemented to ensure compliance of the noise criteria at sensitive receivers.

3 AIR QUALITY ASSESSMENT

Only limited number of PME will be used for this decommissioning project and all decommissioning works will be carried out within the pumping station for a short period of time. These activities would not generate large amount of construction dust.

The Contractor is also obliged to follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation to ensure the construction dust impacts are controlled with the Hong Kong Air Quality Objectives.

4 LAND CONTAMINATION ASSESSMENT

The EIA report has revealed that there was no industrial activities prior to commissioning of the Pumping Station in 1955. Available information shows that none of the diesel storage tanks and diesel pipeline sections are embedded in soil since the commencement of the Pumping Station. They are either concealed in concrete lined chamber and trench, or exposed above ground. Thus, the chances to have previous spillage or leakage of diesel fuel into the soils or groundwater are very slim. The potential of land contamination of the subject site is concluded as very low.

Confirmatory samples have been recommended to be collected from the ground below the tanks to evaluate any potential contamination. Precautionary measures are recommended for the decommissioning stage to minimise any potential hazard to the workers. The list of procedures on any suspected petroleum contaminated soils, in case were observed, recommended in the EIA report shall also be implemented.

It is therefore expected that, if the recommendations put forward in the EIA report are conscientiously acted upon, the decommissioning works will present minimal health and environmental impacts.

5 CULTURAL HERITAGE ASSESSMENT

The records maintained by AMO on the list of declared and deemed monuments, and location of sites of cultural heritage, historical buildings and structures have been reviewed. A field evaluation was also conducted to verify the findings from the desktop research.

There are two historical buildings that may be affected by the decommissioning work. They are Sam Tung Uk (a Declared Monument) and Tin Hau Kung (a Grade II Historical Building) located at approximately 110m to the west and 130m to the northwest from the Pumping Station respectively.

As all works will be carried out within the boundary of the pumping station and will involve only limited number of PME, adverse vibration and dust impacts on the cultural heritage are not anticipated. However, practical mitigation measures, which are agreed by the Antiquities and Monuments Office, shall be designed and implemented if any adverse impacts are proved in the course of the project.

6 WASTE MANAGEMENT IMPLICATIONS

Excavated inert material will be reused on-site. Relatively small amount of demolition waste and chemical waste will be generated from the demolition activities.

The potential impacts can be avoided or controlled through waste management hierarchy, effective management of chemical waste, and proper storage of reusable materials. It is therefore expected that the storage, handling, collection, transport and disposal of waste should present minimal environmental impacts.

7 WATER QUALITY ASSESSMENT

There are no Water Sensitive Receivers within 200m from the site boundary of the Pumping Station. The water quality impacts such as construction runoff and sewage effluent are generally temporary and localised. Mitigation measures will include the minimisation of exposed soil areas to reduce the contamination of runoff and erosion, and the adherence to the best management practices (as stated in ProPECC PN1/94). If these mitigation measures are properly implemented, there will be no adverse water quality impacts.

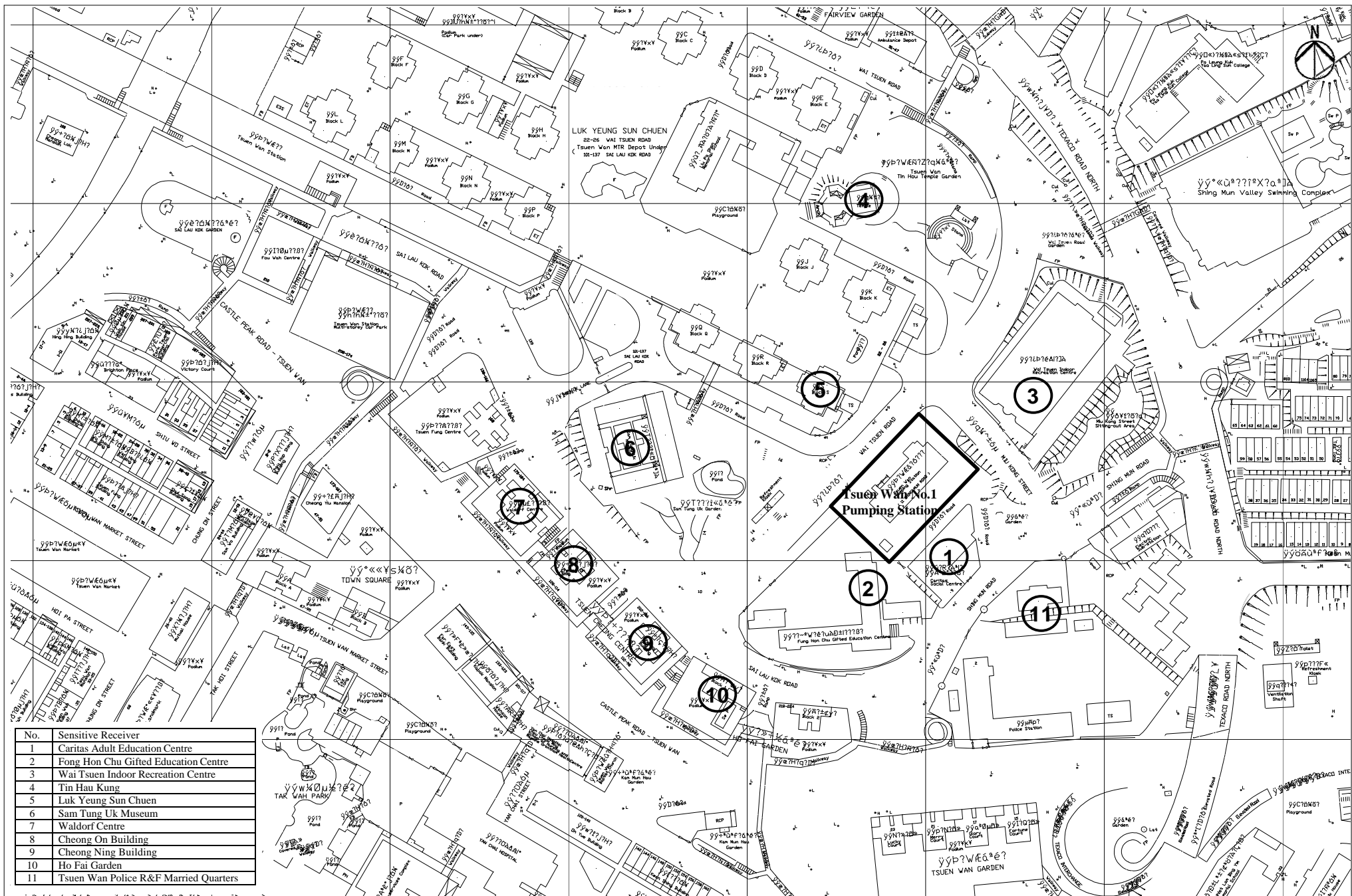
8 ENVIRONMENTAL MONITORING AND AUDITING PROGRAMME

An Environmental Monitoring and Audit (EM&A) Manual and an Implementation Schedule (IS) have been prepared for the decommissioning work to monitor and audit construction noise, air quality, land contamination, cultural heritage, waste management and water quality impacts. Further details are given in the EM&A Manual.

9 CONCLUSION

The EIA study concludes that with the incorporation of the recommended mitigation measures and implementation of the EM&A programme at the sensitive receivers, the decommissioning works will not impose adverse impacts on the neighbouring environment.

[APPENDIX 1 – Site Plan](#)



No.	Sensitive Receiver
1	Caritas Adult Education Centre
2	Fong Hon Chu Gifted Education Centre
3	Wai Tsuen Indoor Recreation Centre
4	Tin Hau Kung
5	Luk Yeung Sun Chuen
6	Sam Tung Uk Museum
7	Waldorf Centre
8	Cheong On Building
9	Cheong Ning Building
10	Ho Fai Garden
11	Tsuen Wan Police R&F Married Quarters

REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY	AY	DRAWING TITLE	Locations of Site and Sensitive Receivers
DRAWN BY	AY		
CHECKED BY	FC		
IN CHARGE	ST		
DATE			

ARUP Ove Arup & Partners Hong Kong Limited		FILE NAME	CADD DATE
THE Decommissioning of Underground Fuel Tanks at Tsuen Wan No.1 Pumping Station Environmental Impact Assessment		SCALE	1:2000 in A3
		FIGURE NUMBER	Appendix 1
SHEET NO	STAGE CODE/REV	P 0	