Water Supplies Department
The Government of Hong Kong Special Administrative Region

Modernisation of East Wing of Tsuen Wan Water Treatment Works

PROJECT PROFILE

August 2011

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List of Tables

List of Sketches

1 BASIC INFORMATION

1.1 Project Title

1.1.1 The title of the proposed project is 'Modernisation of East Wing of Tsuen Wan Water Treatment Works' (hereinafter referred to as the 'Project').

1.2 Purpose and Nature of the Project

1.2.1 Tsuen Wan Water Treatment Works (TWWTW) was commissioned in 1957 and was uprated in two stages in 1971 and 1979 to a nominal capacity of 318,000 m^3/day. However, it can currently only maintain a reliable output of about 200,000 m^3/day due to aging of the plant. In order to avoid further deterioration of the treatment works output, it was proposed to modernise the east wing of TWWTW to a nominal capacity of 180,000 m^3/day with the west wing maintaining the existing reliable output of 100,000 m^3/day during the modernization. The reliability of the output capacity and the capability of the treatment works to cope with the fluctuation of raw water qualities will be enhanced after the modernization works.

1.2.2 The key elements of the proposed works for the Project will include the following:

(a) Demolition of the existing structures and plant at the east wing of TWWTW; and

(b) Construction of a new plant with a nominal treatment capacity of 180,000 m^3/day and associated facilities in TWWTW.

1.3 Name of Project Proponent

1.3.1 The name of project proponent is Water Supplies Department (WSD).

1.4 Location and Scale of the Project and History of Site

1.4.1 TWWTW is located in Sheung Kwai Chung. It sits at an approximate ground level of 105mPD on a hill between Castle Peak Road – Kwai Chung and Cheung Pei San Road, about 1km to the east of the Tsuen Wan MTR Station. To the north and west of TWWTW lies the Shing Mun Valley Park. There are some village-type housing and high-rise residential buildings to the south and east of TWWTW. Access to the site is from the northeast via Shing Mun Road, leading off Wo Yi Hop Road.

1.4.2 Existing major facilities of the east wing of TWWTW include:

(a) Mixing Tanks: After receiving the chemically dosed raw water from the inlet, water is distributed to the No. 3 and No. 4 Mixing Tanks to encourage coagulation and flocculation of suspensions for their effective removal by the subsequent filtration process.

(b) Filters: The water leaving the Mixing Tanks flows to the Filters No. 13 to No. 24 for removal of suspensions.

1.4.3 The proposed major scope of works for the Project will comprise:

(a) Demolition of the existing facilities of the east wing of TWWTW including mixing tanks No.3 and No.4 and filters No.13 to No. 24, the existing Chemical Store Room and Staff Quarters;

(b) Modernisation of the existing east wing of TWWTW to the proposed reliable output of 180,000m^3/day, details of the works to be determined in the detailed design stage;

(c) Construction of the associated facilities including a lime store, an additional chemical store, an on-site laboratory, a permanent workshop and a visitor centre; and

(d) Provision of all other associated civil, geotechnical, mechanical and electrical works.

1.4.4 All the modernization works will be carried out within the existing TWWTW, which is designated as a GIC site in the Outline Zoning Plan. The existing layout of TWWTW and the proposed layout after modernization are shown in **Sketch No. SK20480/1** and **SK20480/2** respectively.

1.5 Number and Type of Designated Project

1.5.1 The Project is classified as a Designated Project under item E.2 of Part I and item 6 of Part II, Schedule 2 of the Environmental Impact Assessment Ordinance Cap. 499 as the project involves modernising the East Wing of TWWTW with a capacity of more than 100,000 m^3/day.

1.6 Name and Telephone Number of Contact Person

Water Supplies Department
Design Division
46/F Immigration Tower
7 Gloucester Road
Wanchai Hong Kong
Contact person: Mr. CHIK Kan To (Senior Engineer/Design (4))
Telephone: 2829 4470
Fax: 2877 0745

2 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Project Implementation

2.1.1 WSD is the project proponent with overall responsibility for the planning, design, construction and operation of the Project. The project proponent will commission consultant(s) to undertake the investigation, the Environmental Impact Assessment (EIA) study and the engineering design. The Project will be undertaken by contractor(s) to be appointed by the project proponent at the subsequent stage.

2.1.2 Combined Investigation/EIA study consultants will be appointed in May 2012. The detailed design of the Project is tentatively planned to be carried out between early 2015 and mid 2016. Tendering of the construction works will then be carried out in early 2017. Construction is tentatively scheduled to commence in mid 2017 for completion in mid 2021. Details of the tentative programme are shown in **Appendix 1**.

2.2 Potential Interfacing Projects Identified

2.2.1 According to the available information, there are no other projects likely to interact with this proposed Project. Detailed investigation will be conducted to avoid possible conflicts with existing utilities.

3 POSSIBLE IMPACTS ON THE ENVIRONMENT

3.1 Outline of Process involved

3.1.1 The treatment process options for the Project would be developed to achieve the primary treatment goals such as turbidity and organic removal, ammonia reduction, manganese removal and enhanced disinfection in the investigation stage. Membrane filtration would be one of the feasible options.

3.1.2 The treatment process with membrane filtration will typically consist of stages outlined below:

(a) Pre-treatment: Pre-treatment process in a membrane filtration system can be used for the control of dissolved contaminants in the raw water. It can also improve the operation and lower the costs of membrane filtration systems by decreasing the membrane cleaning requirements and by allowing operation at higher hydraulic loading rates.

(b) Membrane Filtration: It is a physical barrier to particles that are larger than the pore sizes of the membranes and could remove turbidity causing particles and many water-borne pathogens, such as Cryptosporidium and Giardia.

(c) Post-Treatment: Facilities are normally provided for disinfection, pH adjustment and fluoridation for dental care.

(d) Backwash and Chemical Cleaning: A membrane system required a backwashing system and a chemical cleaning system to limit the accumulation of foulants.

3.1.3 The schematic of the system was shown in **Sketch No. 20480/4**. Further options of modernisation to meet the treatment goals will be identified in the investigation stage and the preferred treatment option will be determined in the detailed design stage.

3.2 Construction Phase

Air Quality

3.2.1 Dust nuisance would likely be the major air quality impact during construction. The predominant dust sources on site would be the construction activities (e.g. demolition, excavation, material handling and vehicle movements on unpaved site areas, etc.). The dust impact is considered to be insignificant with the implementation of good site practice and dust suppression measures.

3.2.2 Since asbestos was commonly used for heat insulation before the 1980's, the insulation materials of the existing buildings may contain asbestos.

Noise

3.2.3 Noise would be generated from construction activities involving the use of powered mechanical equipment (PME). With the adoption of recommended mitigation measures, potential noise impact on the sensitive receivers is expected to be insignificant.

Water Quality

3.2.4 The key potential water quality impact resulting from the construction works will be mainly related to construction site runoff and drainage, debris, refuse and liquid spillages from general construction activities and sewerage effluent from the construction workforce. Appropriate mitigation measures in accordance with the Water Pollution Control Ordinance and the Technical Memorandum 'Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters' will be adopted.

Generation of Waste

3.2.5 Waste generated from the construction work may include construction and demolition (C&D) materials, general refuse from the site workforce, and chemical waste from any maintenance of construction plant and equipment. Generation of waste may be reduced by reusing or recycling suitable C&D materials including management of excavated material and construction waste disposal. Given that the proposed works are properly phased and the standard

waste management practices are to be strictly followed, adverse environmental impacts would not be anticipated during the construction works.

Ecology

3.2.6 As all proposed works is to be carried out in the formed areas in existing TWWTW, this project is not likely to cause potential direct impact on ecology during construction. Impact on existing trees, if identified in later stage of the project, would be minimised and the total number of the affected trees would be kept to minimum as much as practicable.

3.2.7 Indirect ecological impacts during construction may include disturbance from noise, dust nuisance, site runoff and human activities. However, these potential impacts would be controlled to an acceptable level through implementing effective mitigation measures.

Hazard to Life

3.2.8 TWWTW was classified as a Potential Hazardous Installation due to the use of liquid chlorine on site. Since the construction works would be carried out within the Consultation Zone of TWWTW, the potential hazards associated with of the Project in the construction phase will be thoroughly examined under the EIA study.

3.2.9 A Hazard and Operability (HAZOP) study will be carried out during detailed design stage to select appropriate safety measures to ensure that the likelihood of chlorine release will not be increased. The findings and recommendations should be incorporated into the construction contract. The risk should then be controlled through careful construction management measures such as protecting the existing Chlorination House during construction.

Landscape and Visual

3.2.10 The modernisation work site would be visible mainly to the residents at the elevated levels of Primrose Hill (nearby residential buildings). Demolition of buildings and structures and excavation works within the site would be inevitable. Short-term visual disturbance is therefore expected during construction.

Cultural Heritage

3.2.11 There is no declared monument or graded historical building within the boundary of existing TWWTW. The nearest historical building, Law Ancestral Hall (Grade 3) at Sheung Kwai Chung Village is distant from the proposed work site. No adverse cultural heritage impact is therefore anticipated during construction and operation of the Project.

Land Contamination

3.2.12 The project may involve the demolition or modification of the existing chemical house. As the land at that location might be contaminated, testing of the soil excavated from that location would be required. The exact extent and amount of soil contamination would be determined in the EIA study. Contaminated soil, if any, shall be disposed of strictly in accordance with the required procedures.

3.3 Operation Phase

3.3.1 The proposed modernisation works would unlikely cause impact on air, water and ecology during its operation. The works area would be restored upon the completion of construction work. Thus, environmental impacts arising from the proposed works during its operation phase are considered to be negligible.

Noise

3.3.2 The major noise sources during operation would likely be the exhaust fans for ventilation systems and emergency generator set (if required). However, the plant would be enclosed in the new building structures to minimise noise generated.

Waste

3.3.3 Sludge would be the major waste generated during operation of the water treatment process. Since the nominal capacity of the whole TWWTW after modernisation would not exceed its original nominal capacity, the maximum amount of sludge generated was not expected to increase. Sludge will be de-watered on site then disposed of at landfill. Disposal of sludge will be under strict management and sludge will not pose particular problem as the sludge volume will constitute only a small portion of the daily input to the landfill.

Hazard to Life

3.3.4 The existing Chlorination House and associated facilities would remain unchanged after the modernisation works. In addition, the on-site operation staff was not expected to be increased after modernization. It is therefore anticipated that the risk associated with chlorine transportation and storage would not be increased after modernisation .

Landscape and Visual

3.3.5 The future layout would be developed to integrate the modernized East Wing of TWWTW into the existing natural landscape and include attractive landscaping features in the design. The modernised facilities would therefore not consider to materially alter the baseline landscape conditions.

4 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 Existing and Planned Sensitive Receivers

Air and Noise

4.1.1 The proposed modernization works will be located within the existing TWWTW site. The existing and planned sensitive receivers located preliminarily in terms of air and noise are summarised in **Table 4.1** below. The sensitive receivers listed are not exhaustive and will be reviewed during the EIA study.

Table 4.1 Representative Environmental Sensitive Receiver in the Vicinity of the Project

Description	**Nature of Sensitive Receiver**	**Type of Sensitive Receiver** (Note)
Primrose Hill	Domestic premises	ASR & NSR
Ham Tin Tsuen	Domestic premises	ASR & NSR
Hoi Pa San Tsuen	Domestic premises	ASR & NSR
Yeung Uk Tsuen	Domestic premises	ASR & NSR
Ho Pui Tsuen	Domestic premises	ASR & NSR
Sheung Kwai Chung Village	Domestic premises	ASR & NSR
Chung Kwai Chung Tsuen	Domestic premises	ASR & NSR
Staff Quarters of Tsuen Wan Water Treatment Works	Domestic premises	ASR & NSR
Bradbury Shueng Kit Home	Domestic premises	ASR & NSR
Planned residential development at Fu Uk Road	Domestic premises	ASR & NSR
Auxiliary Medical Service Training Camps	Temporary Accommodation	ASR & NSR
Tsuen Wan Public Ho Chuen Yiu Memorial College	School	ASR & NSR
Tsuen Wan Public School	School	ASR & NSR
AD&FDPOHL Leung Sing Tak College	School	ASR & NSR
Kwok Shui Road Park	Park	ASR & NSR
Shing Mun Valley Park	Park	ASR & NSR
Shing Mun Valley Sports Ground	Sports Stadium	ASR
Ching Hing Industrial Building	Industrial Building	ASR

Note: ASR: Air Sensitive Receiver. NSR: Noise Sensitive Receiver.

Hazard to Life

4.1.2 The population surrounding the TWWTW would be subject to the impact of chlorine gas in case of chlorine release. Potentially affected population is mainly composed of residential development including surrounding residential buildings and some recreational facilities.

Landscape and Visual

4.1.3 The frontage of the TWWTW is elevated on a hillside and surrounded by dense vegetation. The identified key visual sensitive receiver in the vicinity of the work sites is Primrose Hill (nearby residential buildings).

4.2 Surrounding Environment

4.2.1 The major elements of the surrounding environment, which might affect the project area, are summarised in **Table 4.2** below.

Table 4.2 Major elements of the surrounding environment, which might affect the project

Description	Type
Cheung Pei Shan Road	Trunk Road (Route 9)
Existing TWWTW	Potential Hazardous Installation

4.2.2 **Sketch No. SK20480/3** shows the locations of sensitive receivers and major elements of the surrounding environment of the Project.

5 ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND FURTHER ENVIRONMENTAL IMPLICATIONS

5.1 Construction Phase

Air Quality

5.1.1 Dust generation during construction is expected to be insignificant with the implementation of dust suppression measures, as stipulated in the *Air Pollution Control (Construction Dust) Regulation of Air Pollution Control Ordinance* (APCO). These measures will be incorporated into the specifications for the works contract.

5.1.2 In accordance with Part IX of APCO, a registered asbestos consultant will be employed to conduct an asbestos investigation and prepare an Asbestos Investigation Report. If suspected asbestos-containing material is identified, an asbestos abatement plan will be submitted to EPD.

Noise

5.1.3 The Contractor for the works will have to comply with the provisions of the *Noise Control Ordinance* (Chapter 400) and incorporate the following measures:

- Using only well-maintained plant on-site;
- Operating plant regularly during the construction phase;
- Utilising silencers or mufflers on construction equipment;
- Shutting down PME in intermittent use between work periods; and
- Utilising material stockpiles and other structures effectively, wherever practicable, in screening noise from on-site construction activities.

Water Quality

5.1.4 The construction works contract will incorporate provisions as stipulated in 'Professional Persons Environmental Consultative Committee Practice Notes 1/94 - Construction Site Drainage' to minimise site runoff, control erosion, and retain and reduce any suspended solids prior to discharge. Silt removal facilities will be provided and soil excavation work will be minimised on rainy days as far as practically. Earthworks final surfaces will be well compacted and the subsequent permanent work or surface protection will be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms.

Waste Management

5.1.5 The construction works contract will incorporate the following control/mitigation measures.

- Provision of waste disposal points and regular collection for disposal;
- Different types of waste will be sorted and stored in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;
- Provision of appropriate measures to minimise wind-blown litter and dust during transportation of waste by either covering the trucks or by transporting wastes in enclosed containers;
- Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre;
- Recycling any unused chemicals or those with remaining functional capacity;
- Maximising the use of reusable steel formwork to reduce the amount of C&D materials; and

- Using the excavated fill material on-site as backfill material as far as possible.

Ecology

5.1.6 To minimise potential ecological impacts during construction phase, the following practices will be adopted:

- Tree felling or conflict with tree root development will be avoided as far as possible in the design of the modernisation works; and
- The Contractor will be required to implement standard good site practices (e.g. hoarding of works areas, placement of equipment or stockpile at designated area etc.).

Hazard to Life

5.1.7 To reduce the potential risk associated with the construction activities to the Chlorination House and chlorine transportation, the following mitigation measures will be implemented:

- Careful construction management measures on construction plant including establishment of a construction no-go zone, installation of crash barriers around the Chlorination House and the provision of emergency plan for construction works; and
- HAZOP study to be carried out during the detailed design stage to identify specific hazards and corresponding safety measures.

Landscape and Visual

5.1.8 The Contractor will be required to carry out construction activities in a neat and orderly manner. Hoarding will be erected at the site boundary to minimise the visual impact to the general public.

5.2 Operation Phase

Hazard to Life

5.2.1 As mentioned in para. 3.3.4, the risk associated with chlorine transportation and storage would not be increased after modernisation. The following mitigation measures will be considered to further reduce the potential risk associated with chlorine delivery, storage and handling during operation:

- Enforcement of speed limit for all vehicles along the access road;
- Installation of crash barrier along parts of the road where there are hazardous downward slopes; and
- Maintaining the same safe working procedures and level of training for staff working inside and around the Chlorination House

Landscape and Visual

5.2.2 To reduce the potential visual impact associated with the modernisation works, the following measures will be implemented:

- Provision of the external surfaces and roof of the treatment facilities with special architectural treatment to blend in well with the surrounding environment;
- Provision of roof planting wherever appropriate; and
- Provision of a landscaped/planting strip along the site boundary as necessary

5.3 Possible Severity, Distribution and Duration of Environmental Effects

5.3.1 Most potential environmental impacts identified will only last for the duration of the construction period. The effects are considered to be temporary and short term. With the implementation of appropriate mitigation measures, no insurmountable impacts are expected.

5.4 Further Implications

Public Consultation

5.4.1 Up to this moment, no public consultation has been carried out. Public consultation will be carried out in subsequent stages of the Project.

History of Similar Projects

5.4.2 The project is similar to the development and management of the existing water treatment works in Hong Kong.

6 USE OF PREVIOUSLY APPROVED EIA REPORTS

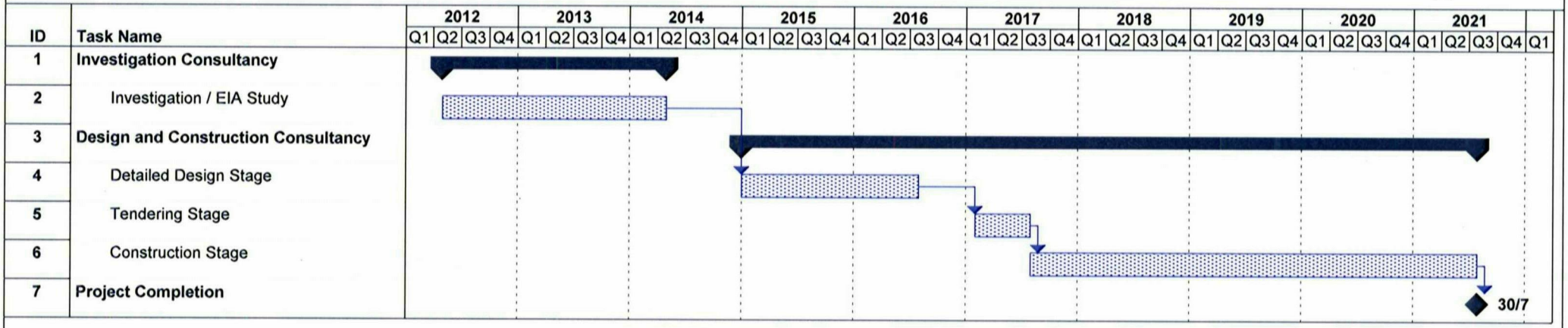
6.1 No previously approved EIA report exists for the Project. However, reference may be made from WSD's EIA reports for water treatment works projects which have been approved by the EPD.

6.2 The following approved EIA report will be referred in the Study.

- EIA-100/2004 Siu Ho Wan Water Treatment Works Extension (WSD) (approved without conditions on 15 Dec 2004)

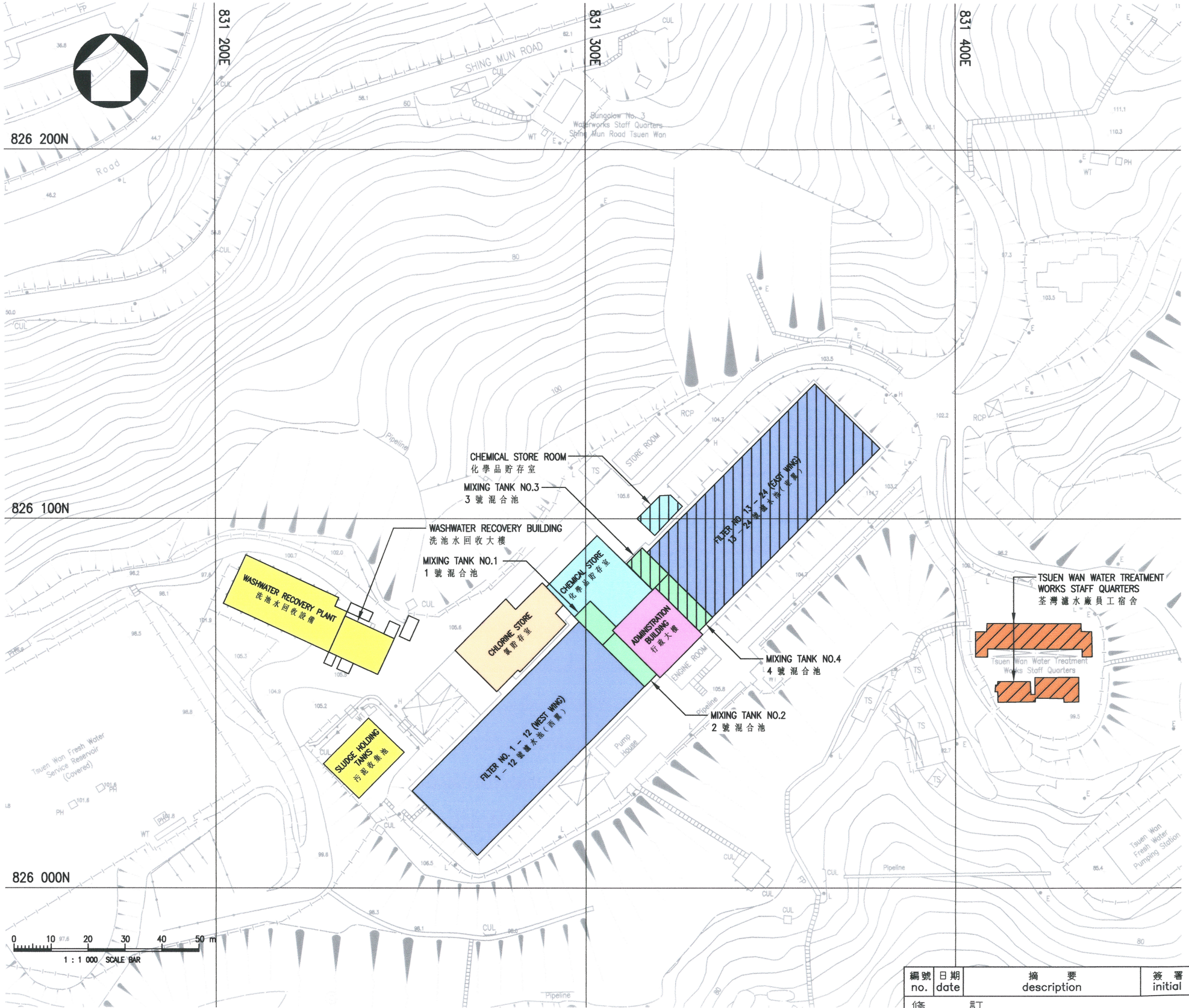
Modernisation of East Wing of Tsuen Wan Water Treatment Works

Appendix 1



Project: Modernisation of East Wing o
Date: 3/8/11

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
2. ALL LEVELS ARE IN METRES A.P.D.
3. THE BASE PLAN IS EXTRACTED FROM SURVEY SHEET NO. 7-SW-16B.

LEGEND :

- FILTER 濾水池
- MIXING TANK 混合池
- CHEMICAL STORE 化學品貯存室
- ADMINISTRATION BUILDING 行政大樓
- CHLORINE STORE 氯貯存室
- WASHWATER RECOVERY SYSTEM 洗池水回收系統
- STAFF QUARTERS 員工宿舍
- FACILITIES TO BE DEMOLISHED 擬拆除設施

	簽署 initial	日期 date
繪製 drawn	W. K. CHAN	4/8/11
核對 checked		
加簽 endorsed		
核准 approved	M. K. TONG E/Des(18)	4/8/11

合約編號 contract no. –

檔案編號 file no. WSD 5035/R/1

工務編號 PWP no. 341WF & 342WF

圖則名稱 drawing title
MODERNIZATION OF EAST WING OF TSUEN WAN WATER TREATMENT WORKS – DIAGRAMMATIC LAYOUT OF EXISTING TSUEN WAN WATER TREATMENT WORKS
荃灣濾水廠東翼現代化工程 – 現時荃灣濾水廠的佈局概略

圖則編號 drawing no. SK 20480/1

比例 scale 1 : 1 000

編號 no.	日期 date	摘要 description	簽署 initial

修訂 REVISION

水務署 Water Supplies Department

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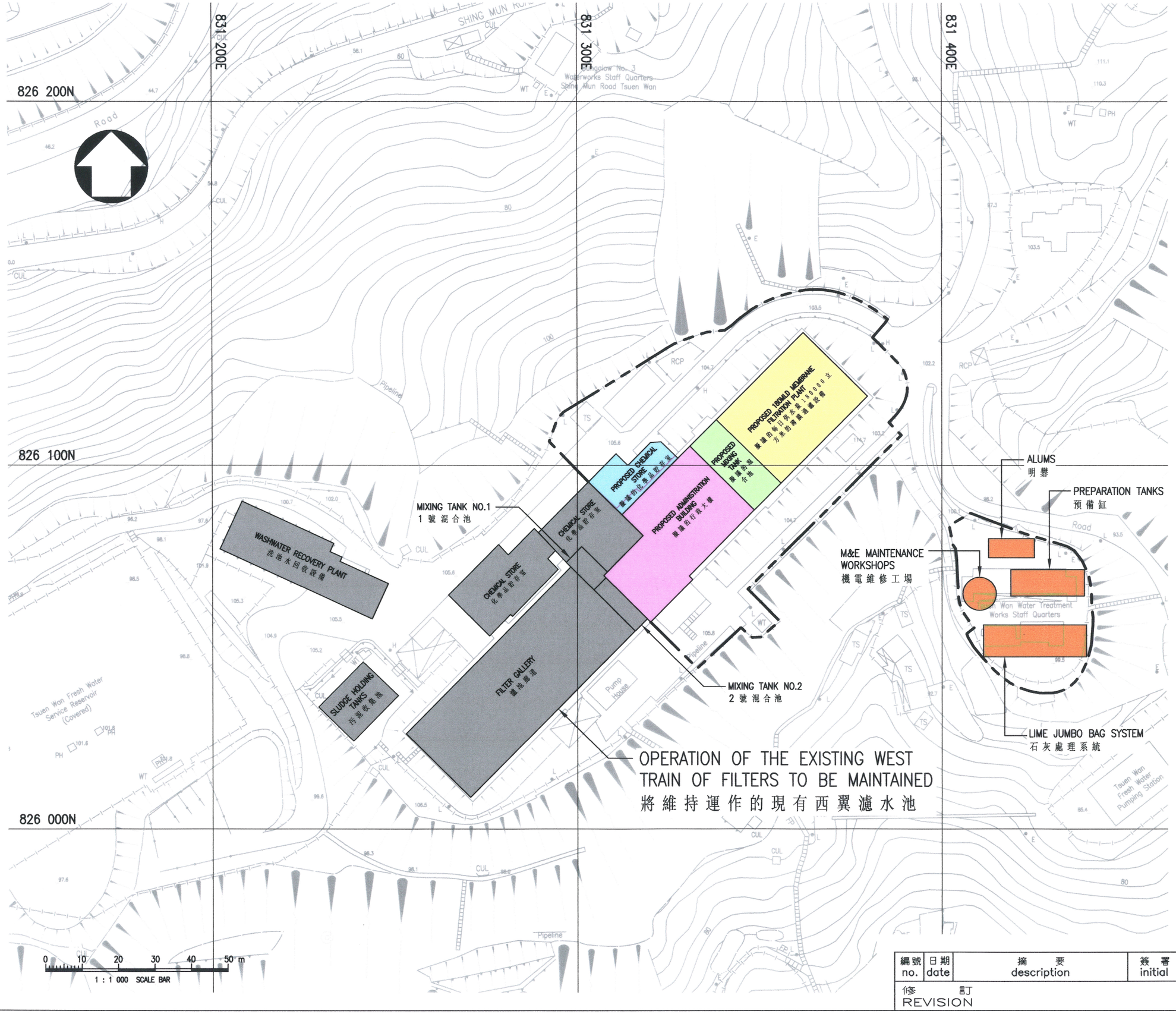

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3. THE BASE PLAN IS EXTRACTED FROM SURVEY SHEET NO. 7-SW-16B.

LEGEND :

- OPERATION OF THE EXISTING WATER TREATMENT FACILITIES TO BE MAINTAINED. 將維持運作的現有西翼濾水池
- PROPOSED 180MLD MEMBRANE FILTRATION PLANT 擬議的每日供水量180000立方米的薄膜過濾設備
- PROPOSED MIXING TANK 擬議的混合池
- PROPOSED ADMINISTRATION BUILDING WITH ON-SITE LABORATORY AND VISITOR CENTRE 擬議的行政大樓
- PROPOSED CHEMICAL STORE 擬議的化學品貯存室
- PROPOSED CHEMICAL BUILDING AND M&E MAINTENANCE WORKSHOPS 擬議的化學大樓及機電維修工場
- PROPOSED SITE BOUNDARY 擬議的工地邊界

簽署 initial		日期 date
繪製 drawn	W. K. CHAN	4/8/11
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圖則名稱 drawing title
MODERNIZATION OF EAST WING OF TSUEN WAN WATER TREATMENT WORKS – LAYOUT OF THE PROPOSED TREATMENT FACILITIES
荃灣濾水廠東翼現代化工程 – 擬議的濾水設施佈局

圖則編號 drawing no.	比例 scale
SK 20480/2	1 : 1 000

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			

水務署 Water Supplies Department

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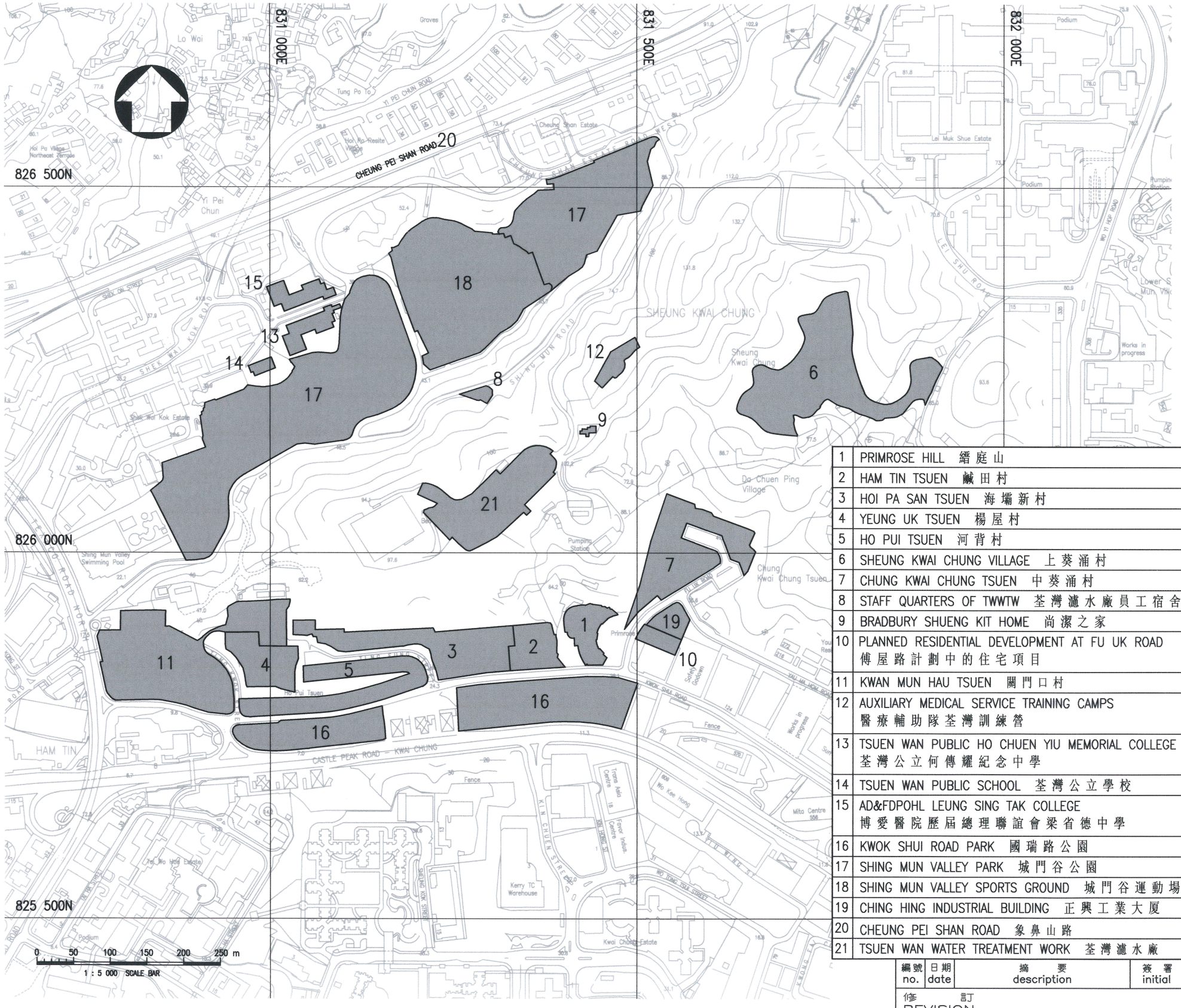

1	PRIMROSE HILL 繙庭山
2	HAM TIN TSUEN 鹹田村
3	HOI PA SAN TSUEN 海壩新村
4	YEUNG UK TSUEN 楊屋村
5	HO PUI TSUEN 河背村
6	SHEUNG KWAI CHUNG VILLAGE 上葵涌村
7	CHUNG KWAI CHUNG TSUEN 中葵涌村
8	STAFF QUARTERS OF TWWTW 荃灣濾水廠員工宿舍
9	BRADBURY SHUENG KIT HOME 尚潔之家
10	PLANNED RESIDENTIAL DEVELOPMENT AT FU UK ROAD 傅屋路計劃中的住宅項目
11	KWAN MUN HAU TSUEN 關門口村
12	AUXILIARY MEDICAL SERVICE TRAINING CAMPS 醫療輔助隊荃灣訓練營
13	TSUEN WAN PUBLIC HO CHUEN YIU MEMORIAL COLLEGE 荃灣公立何傳耀紀念中學
14	TSUEN WAN PUBLIC SCHOOL 荃灣公立學校
15	AD&FDPOHL LEUNG SING TAK COLLEGE 博愛醫院歷屆總理聯誼會梁省德中學
16	KWOK SHUI ROAD PARK 國瑞路公園
17	SHING MUN VALLEY PARK 城門谷公園
18	SHING MUN VALLEY SPORTS GROUND 城門谷運動場
19	CHING HING INDUSTRIAL BUILDING 正興工業大廈
20	CHEUNG PEI SHAN ROAD 象鼻山路
21	TSUEN WAN WATER TREATMENT WORK 荃灣濾水廠

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			

NOTES:

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2. ALL LEVELS ARE IN METRES A.P.D.
3. THE BASE PLAN IS EXTRACTED FROM SURVEY SHEET NO. 7-SW-C.
4. THE LOCATIONS OF THE SENSITIVE RECEIVERS AND MAJOR ELEMENTS OF SURROUNDING ENVIRONMENT ARE INDICATIVE AND SHOULD BE USED FOR REFERENCE ONLY.

LEGEND :

MAJOR ELEMENTS OF SURROUNDING ENVIRONMENT
周圍環境的主要元素

	簽署 initial		日期 date
繪製 drawn	W. K. CHAN		4/8/11
核對 checked			
加簽 endorsed			
核准 approved		M. K. TONG E/Des(18)	4/8/11

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檔案編號 file no. WSD 5035/R/1

工務編號 PWP no. 341WF & 342WF

圖則名稱 drawing title
MODERNIZATION OF EAST WING OF TSUEN WAN WATER TREATMENT WORKS – MAJOR ELEMENTS OF SURROUNDING ENVIRONMENT
荃灣濾水廠東翼現代化工程 – 周圍環境的主要元素

圖則編號 drawing no.	比例 scale
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水務署 Water Supplies Department

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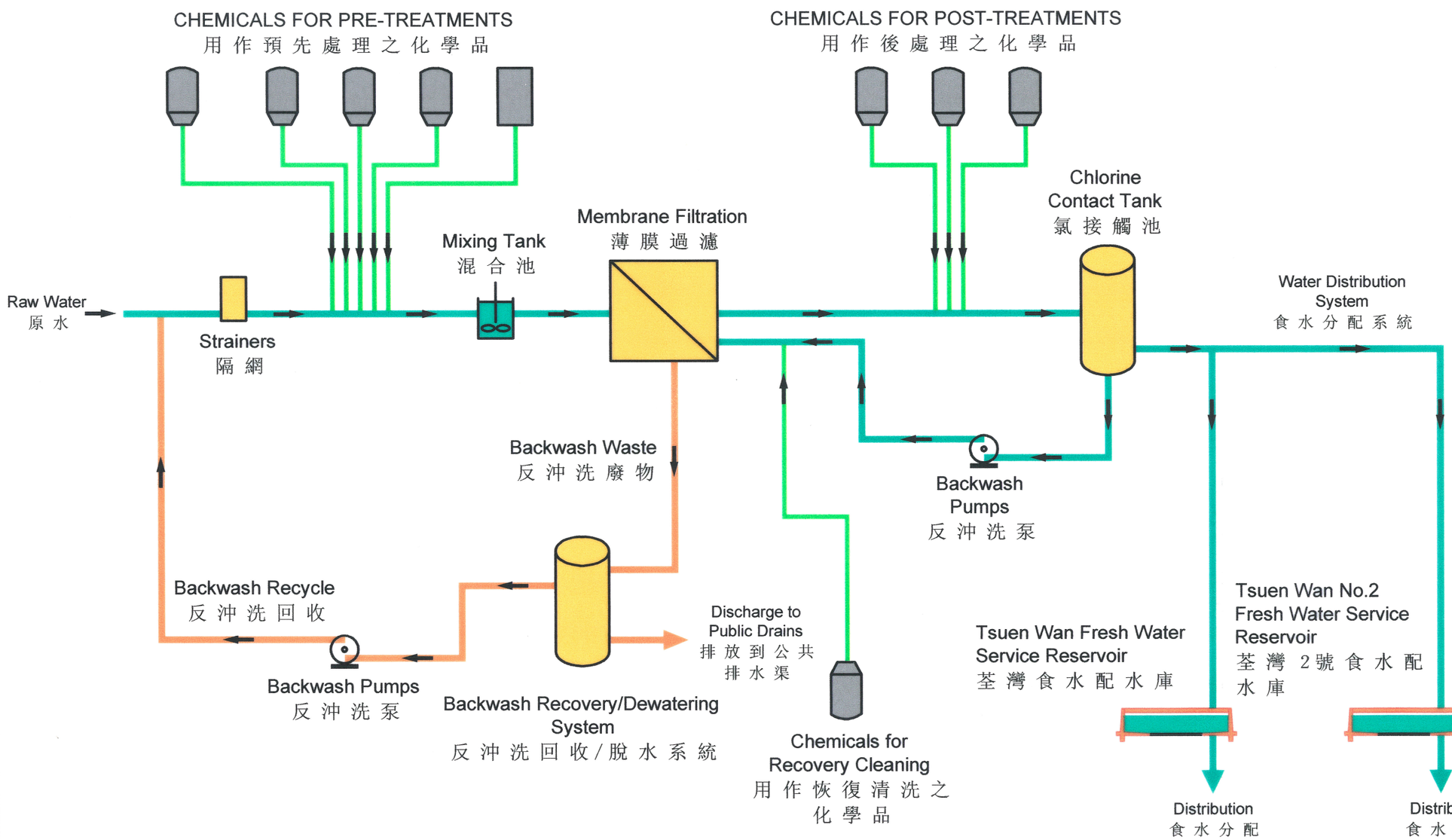

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工務編號 PWP no. 341WF & 342WF

圖則名稱 drawing title
MODERNIZATION OF EAST WING OF TSUEN WAN WATER TREATMENT WORKS – TYPICAL TREATMENT PROCESS FOR MEMBRANE FILTRATION
荃灣濾水廠東翼現代化工程
– 典型薄膜過濾過程

圖則編號 drawing no.	比例 scale
SK 20480/4	N.T.S.

水務署 Water Supplies Department

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			

A3 420 x 297

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