

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 709 – WATERWORKS

#### Water Supplies – Fresh water supplies

#### 181WF – In-situ reprovisioning of Sha Tin water treatment works (South Works)

Members are invited to recommend to the Finance Committee –

- (a) the upgrading of part of **181WF**, entitled “In-situ reprovisioning of Sha Tin water treatment works (South Works) – advance works”, to Category A at an estimated cost of \$1,658 million in money-of-the-day prices; and
- (b) the retention of the remainder of **181WF** in Category B.

### PROBLEM

The existing treatment capacity of Sha Tin water treatment works (WTW) cannot meet the future water demand arising from the new housing developments.

### PROPOSAL

2. The Director of Water Supplies, with the support of the Secretary for Development, proposes to upgrade part of **181WF** to Category A at an estimated cost of \$1,658 million in money-of-the-day (MOD) prices to carry out advance works for the in-situ reprovisioning of the South Works of Sha Tin WTW.

**/PROJECT .....**

**PROJECT SCOPE AND NATURE**

3. The part of **181WF** which we propose to upgrade to Category A comprises –

- (a) site formation for the administration building;
- (b) construction of a logistics centre for the reprovisioning of the chemical house, alum saturation tanks, mechanical and electrical workshops and offices;
- (c) reprovisioning of the power house;
- (d) construction of a hydro-turbine house;
- (e) construction of new access roads and improvement to existing access roads and associated slope works; and
- (f) associated works including engineering, environmental mitigation and landscaping works.

4. The location plan of the existing facilities to be reprovisioned, proposed works and the cross-section of the proposed logistics centre are shown at Enclosures 1 to 3 respectively.

5. Subject to funding approval of the Finance Committee (FC), we plan to commence the proposed advance works in August 2015 for completion in December 2018. In order to meet the tight schedule, we have invited tenders in April 2015. The contract will only be awarded after we have secured funding approval from FC.

6. We will retain the remainder of **181WF** for the main works of the in-situ reprovisioning of the South Works of Sha Tin WTW in Category B. Funding for the remainder of **181WF** will be sought at a later stage. The scope of the remainder mainly comprises –

- (a) site formation for the remaining works and construction of new access roads and improvement to existing access roads for the remaining works;
- (b) reprovisioning of the administration building;
- (c) demolition of the South Works treatment processing units including clarifiers and filters;

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- (d) reprovisioning of the residual management facility, the South Works pumping station and treatment processing units including the pre-ozonation building, intermediate ozonation building, flocculation and sedimentation tanks, two-stage filters and ultra-violet disinfection facility; and
- (e) associated works including engineering, environmental mitigation and landscaping works.

## JUSTIFICATION

7. Sha Tin WTW and Tai Po WTW are the two major WTWs in Hong Kong providing fresh water supply to the metropolitan areas including Central and Western district on Hong Kong Island, a large part in Kowloon<sup>1</sup> and areas in Sha Tin and Tai Po districts, serving a total population of around 2.5 million. New public and private housing developments are being implemented progressively within the combined supply zone of the two WTWs (“the combined supply zone”). It is hence necessary to increase the total existing treatment capacity of the two WTWs to meet the additional demand.

8. Sha Tin WTW consists of two portions namely the South Works and North Works with a reliable output of 820 000 cubic metres (m<sup>3</sup>) per day at present. The South Works of Sha Tin WTW was commissioned in 1964 with a treatment capacity of 364 000 m<sup>3</sup> per day while the North Works was commissioned in stages since 1973. After more than 50 years of service, the reliable output of South Works has reduced to 220 000 m<sup>3</sup> per day and it has become uneconomical to maintain its operation. During the proposed reprovisioning, the South Works has to be taken out of service which will reduce the treatment capacity of Sha Tin WTW. It is therefore necessary to programme the reprovisioning works to ensure sufficient fresh water supply for the combined supply zone will be maintained during the reprovisioning. Apart from replacing the aged treatment facilities, the treatment capacity of the South Works will also be increased to 550 000 m<sup>3</sup> per day upon completion of the main works to meet the increase in demand arising from the new housing developments in the combined supply zone. Based on the demand forecast, the reprovisioning of the South Works needs to be completed in 2023.

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<sup>1</sup> Including areas in Yau Tsim Mong, Kowloon City, Sham Shui Po and Wong Tai Sin districts.

9. The proposed advance works will pave way for the main in-situ reprovisioning works of the South Works to meet the programme as mentioned in paragraph 8 above. A site will be formed as part of the advance works at the government land to the west of the Sha Tin WTW for building a new logistics centre<sup>2</sup>. Upon its completion, the existing chemical house, alum saturation tanks, mechanical and electrical workshops and offices in the South Works will be relocated to the new logistics centre, with their original sites freed up for subsequent reprovisioning works. For similar purpose, the existing power house will be reprovisioned to release its site. To ensure that access to the North Works will not be affected by the construction traffic during the reprovisioning of the South Works, new access roads and existing access roads to the North Works will be constructed and improved under the advance works. The site for the future administration building will also be formed under the advance works to speed up its construction during the main works. Moreover, to make use of the residual energy in the inflow of raw water to the WTW, a new hydro-turbine house will be constructed for generation of electricity up to about 520 000 kilowatts-hours per year for use in the Sha Tin WTW.

## FINANCIAL IMPLICATIONS

10. We estimate the capital cost of the proposed works to be \$1,658 million in MOD prices (please see paragraph 12 below), broken down as follows –

		<b>\$ million</b>
(a)	Civil Works	665.9
	(i) logistics centre	331.1
	(ii) geotechnical works (including slope works and site formation works for the proposed administration building)	219.3
	(iii) associated engineering and landscape works	68.0
	(iv) access roads	30.4
	(v) power house	10.6
	(vi) hydro-turbine house	6.5
(b)	Electrical and mechanical works	475.1
	(i) logistics centre	338.2
	(ii) power house	66.2
	(iii) hydro-turbine house	57.2
	(iv) distributed control system	13.5
(c)	Furniture and equipment	0.5
		/(d) .....

<sup>2</sup> The new logistics centre with a total net operational floor area of about 8 230 square metres is a 4-storey building with a basement.

	<b>\$ million</b>
(d) Environmental mitigation measures	13.1
(e) Consultants' fee	26.0
(i) contract administration	17.6
(ii) management of resident site staff	8.4
(f) Remuneration of resident site staff	104.4
(g) Contingencies	128.5
	Sub-total <u>1,413.5</u> (in September 2014 prices)
(h) Provision for price adjustment	<u>244.5</u>
	Total <u>1,658.0</u> (in MOD prices)

11. A detailed breakdown of the estimated consultants' fees and resident site staff costs by man-months is at Enclosure 4.

12. Subject to funding approval, we will phase the expenditure as follows –

<b>Year</b>	<b>\$ million (Sept 2014)</b>	<b>Price adjustment factor</b>	<b>\$ million (MOD)</b>
2015 - 2016	104.4	1.05725	110.4
2016 - 2017	579.0	1.12069	648.9
2017 - 2018	440.6	1.18793	523.4
2018 - 2019	148.0	1.25920	186.4
2019 - 2020	141.5	1.33475	188.9
	<u>1,413.5</u>		<u>1,658.0</u>

13. We have derived the MOD estimates on the basis of the Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period from 2015 to 2020. We will deliver the proposed works under a re-measurement contract because the quantities of works are subject to variation during construction to suit the actual site conditions. The contract will provide for price adjustment.

14. The proposed works will not give rise to additional recurrent expenditure.

15. The project will lead to an increase in the production cost of water by 0.44% in real terms by 2020<sup>3</sup>.

## **PUBLIC CONSULTATION**

16. We consulted the Development and Housing Committee of the Sha Tin District Council (STDC) on 30 October 2014. STDC members in general have no objection to the proposed advance works but requested the Government to minimise any possible impact on the neighbourhood during the construction period.

17. We consulted the Legislative Council Panel on Development on 24 February 2015 and Members raised no objection to the proposed advance works. Supplementary information on the issues of water demand forecast and trees protection was provided to Members on 30 April 2015.

## **ENVIRONMENTAL IMPLICATIONS**

18. The proposed in-situ reprovisioning of the South Works of Sha Tin WTW is a designated project under the Environmental Impact Assessment (EIA) Ordinance, Cap. 499 ("the Ordinance"). We completed the EIA study in 2014 to address the environmental impacts of the project. The EIA study report concluded that, with the implementation of mitigation measures, the environmental impacts of both the advance works and the main works under the project could be controlled to within the established standards and criteria. The Environmental Permit was granted on 28 January 2015.

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<sup>3</sup> The increase in production cost of water is calculated at the present level and on the assumption that the water demand remains static during the period from 2015 to 2020.

19. During the construction of the advance works, we will control noise, dust and site run-off nuisances to within established standards and guidelines through the implementation of appropriate mitigation measures in the contract. These include the use of silencers, mufflers, acoustic lining or shields for noisy construction activities, frequent cleaning and watering of the site, and the provision of wheel-washing facilities. We will implement an environmental monitoring and audit programme during the course of construction to ensure that potential impacts are adequately addressed. We have included a sum of \$13.1 million (in September 2014 prices) in paragraph 10(d) above in the project estimate for the implementation of the environmental mitigation measures in the advance works.

20. At the planning and design stages, we have optimised the design of site levels and layouts as well as the adoption of bored pile retaining walls to reduce the generation of construction waste wherever practicable. In addition, we will require the contractor to reuse inert construction waste (e.g. demolished concrete and excavated soil and rock) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste to public fill reception facilities<sup>4</sup>. We will encourage the contractor to maximise the use of recycled or recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

21. At the construction stage of the advance works, we will require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert and non-inert construction waste at public fill reception facilities and landfills respectively through a trip-ticket system.

22. We estimate that the advance works will generate in total about 209 905 tonnes of construction waste. Of these, we will reuse about 14 100 tonnes (6.7%) of inert construction waste on site and deliver 195 505 tonnes (93.1%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 300 tonnes (0.2%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be \$5.3 million for this project (based on a unit charge rate of \$27 per tonne for disposal at public fill reception facilities and \$125 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation).

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<sup>4</sup> Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

## HERITAGE IMPLICATIONS

23. The proposed advance works will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites or buildings, sites of archaeological interest and Government historic sites identified by the Antiquities and Monuments Office.

## LAND ACQUISITION

24. The proposed advance works do not require any land acquisition.

## TRAFFIC IMPLICATIONS

25. To minimise possible disruption to traffic during construction, we have completed a traffic impact assessment (TIA) for the proposed advance works. The TIA has concluded that the proposed advance works would not cause significant impact on the local traffic network.

## BACKGROUND

26. We upgraded **181WF** to Category B in February 2002. In January 2003, we engaged consultants to carry out the investigation study for the proposed works at a cost of about \$10.2 million (in MOD prices). We have charged the study under block allocation **Subhead 9100WX** “Waterworks, studies and investigations for items in Category D of the Public Works Programme”.

27. The investigation study was completed in September 2004. It recommended an outline design scheme for the in-situ re-provisioning of the Sha Tin WTW which was used as the basis for further design development of the proposed works.

28. On 2 July 2010, we upgraded part of **181WF** to Category A as **344WF** “In-situ re-provisioning of Sha Tin water treatment works – South Works – design and site investigation” at an approved project estimate of \$149.1 million in MOD prices. We engaged consultants in August 2010 to undertake the design and site investigation works. We have substantially completed the design of the proposed advance works.



29. Since the existing site of the Sha Tin WTW is already very congested and is surrounded by woodland and the East Rail Line, encroachment into the woodland is unavoidable to enable the re-provisioning of the South Works. Through careful layout design and adoption of compact water treatment technologies, the additional land requirement as well as felling of trees would be minimised. We have employed tree specialists to prepare tree preservation, removal and compensation proposals in consultation with the Agriculture, Fisheries and Conservation Department and the Leisure and Cultural Services Department.

30. Tree survey<sup>5</sup> has been conducted to identify the trees that would be affected by the project for the in-situ re-provisioning of the South Works. Of the 608 trees within the project boundary of the proposed advance works, 59 trees will be preserved and 543 common trees will be removed, including 536 trees to be felled and seven trees to be replanted within the project site. Besides, six important trees<sup>6</sup> within the project site would be removed during the implementation of the advance works, including three trees to be replanted within the project site and three trees to be felled. It is assessed that the three important trees recommended to be felled are in poor condition and they would have low survival rate after transplanting. The six important trees to be removed are precious or rare species with five *Aquilaria sinensis* protected under the Protection of Endangered Species of Animals and Plants Ordinance (Cap 586) and one *Ailanthus fordii* protected under the Forest and Countryside Ordinance (Cap 96). None of the trees recommended for removal is in the Register of Old and Valuable Trees. Details of the six important trees and their treatment proposal are summarised at Enclosure 5.

31. Besides, there are 193 trees within the project boundary of the main works for in-situ re-provisioning of the South Works. Among them, 63 will be preserved and 130 common trees will be removed during the main works, including 105 trees to be felled and 25 trees to be replanted within the project site. All trees to be removed under the main works are not important trees.

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<sup>5</sup> Tree survey was conducted in 2011 with subsequent review and update in 2013. Site inspections were carried out in January 2015 to further update the survey.

<sup>6</sup> “Important trees” refers to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria-

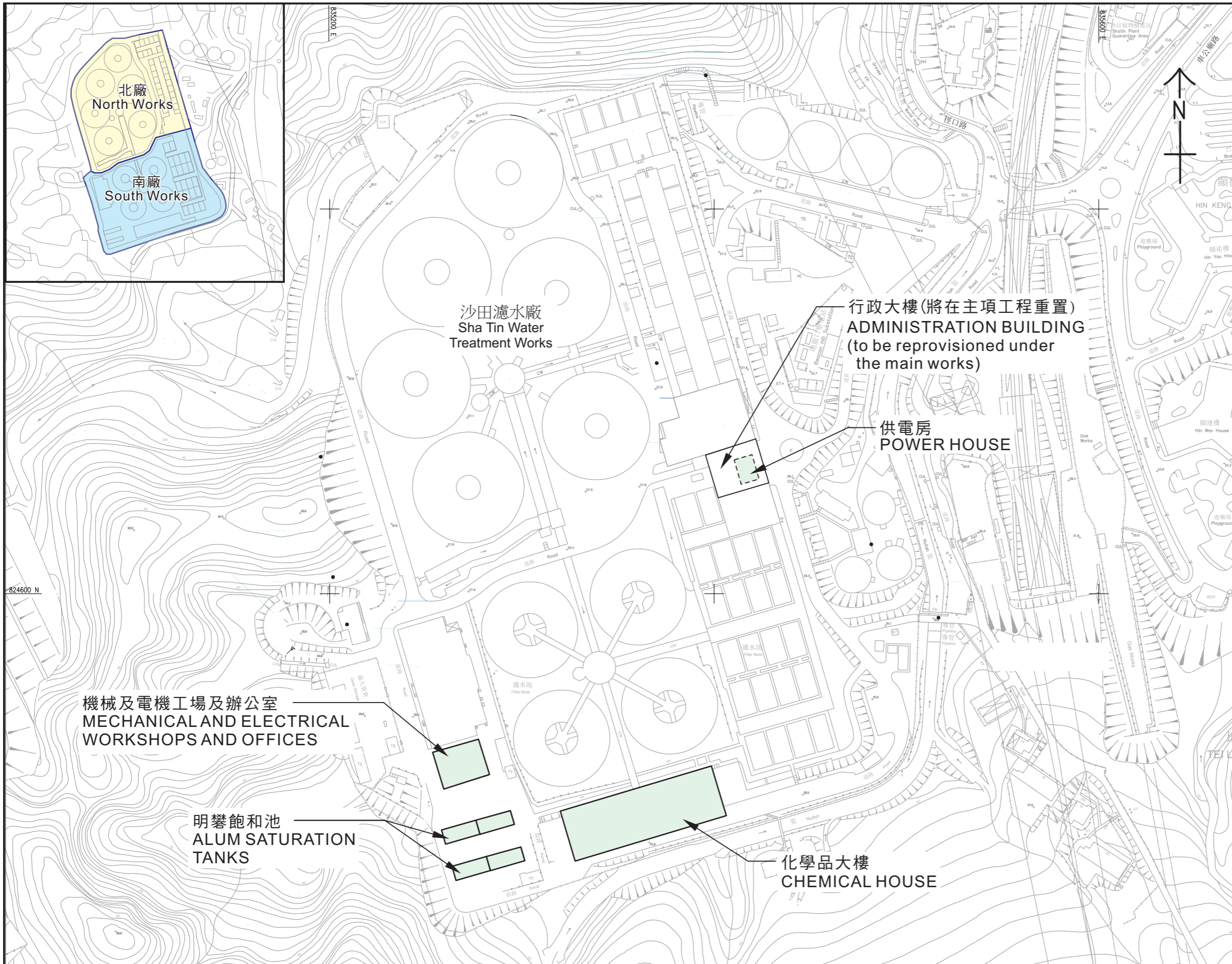
- (a) trees of 100 years old or above;
- (b) trees of cultural, historical or memorable significance e.g. Fung Shui trees, trees as landmark of monastery or heritage monument, and trees in memory of important persons or events;
- (c) trees of precious or rare species;
- (d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0 metre (m) (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25 m.

32. We will incorporate planting proposal as part of the project for in-situ reprovisioning of the South Works, including planting of 731 trees comprising 147 heavy standard trees and 584 light standard trees. Moreover, 3 320 shrubs and 6 300 square metres (m<sup>2</sup>) of grassed area will be established in conjunction with the planting proposal. About 80 heavy standard trees, 500 light standard trees, 900 shrubs and 1 800 m<sup>2</sup> of grassed area will be implemented under the advance works and the remaining will be implemented under the main works.

33. We estimate that the proposed advance works will create about 500 jobs (400 for labourers and 100 for professional or technical staff) providing a total employment of 16 300 man-months.

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Development Bureau  
June 2015



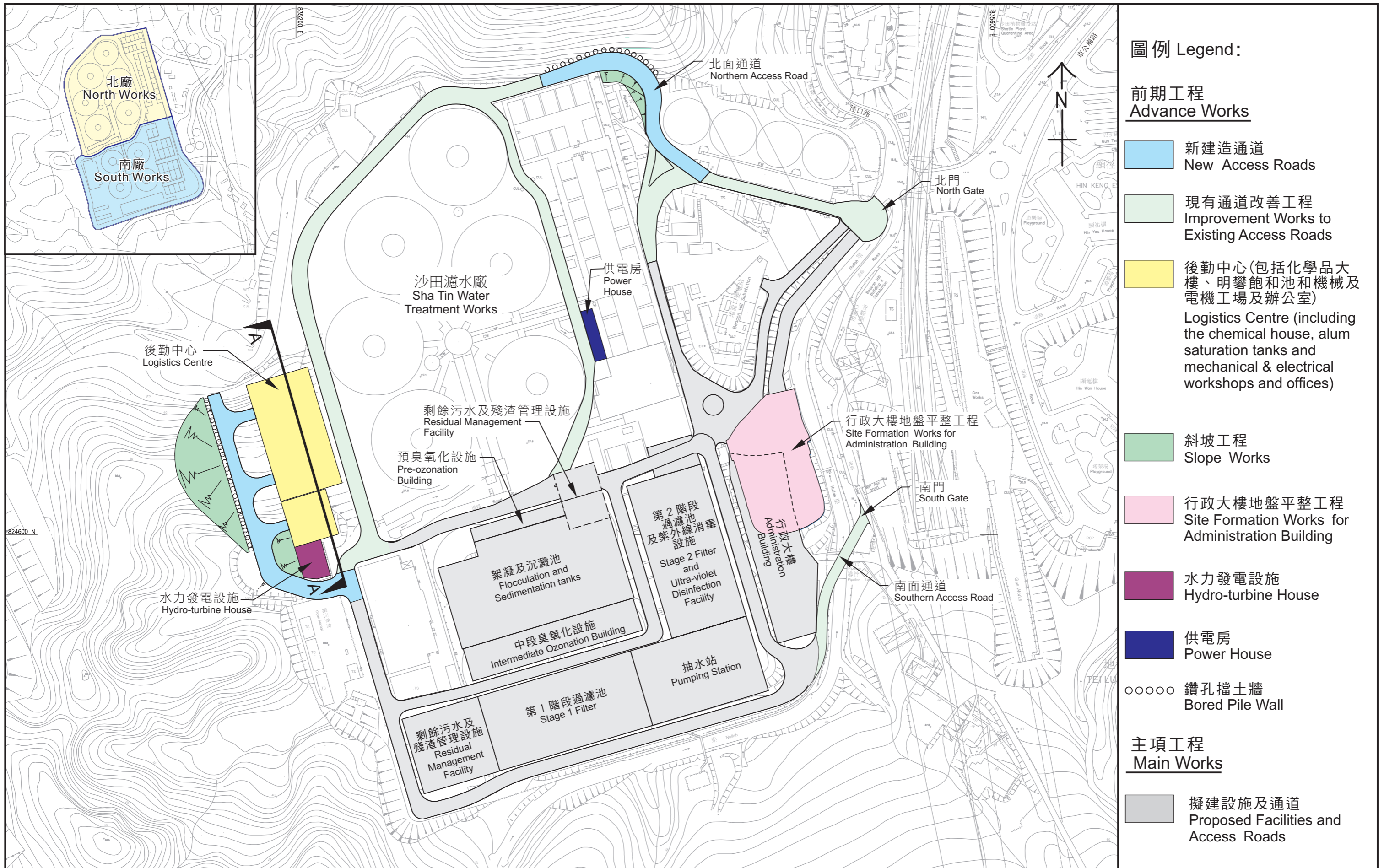
圖例 Legend:

- 擬重置的現有設施  
Existing Facilities proposed to be reprovioned

核准 APPROVED  
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總工程師/工程管理 CE / PM  
1 / 6 / 2015

工務計劃項目第181WF號 — 沙田濾水廠(南廠)原地重置工程 — 前期工程  
擬重置的現有設施  
PWP ITEM NO. 181WF — In-situ reprovioning of Sha Tin water treatment works (South Works) - advance works  
Existing facilities proposed to be reprovioned

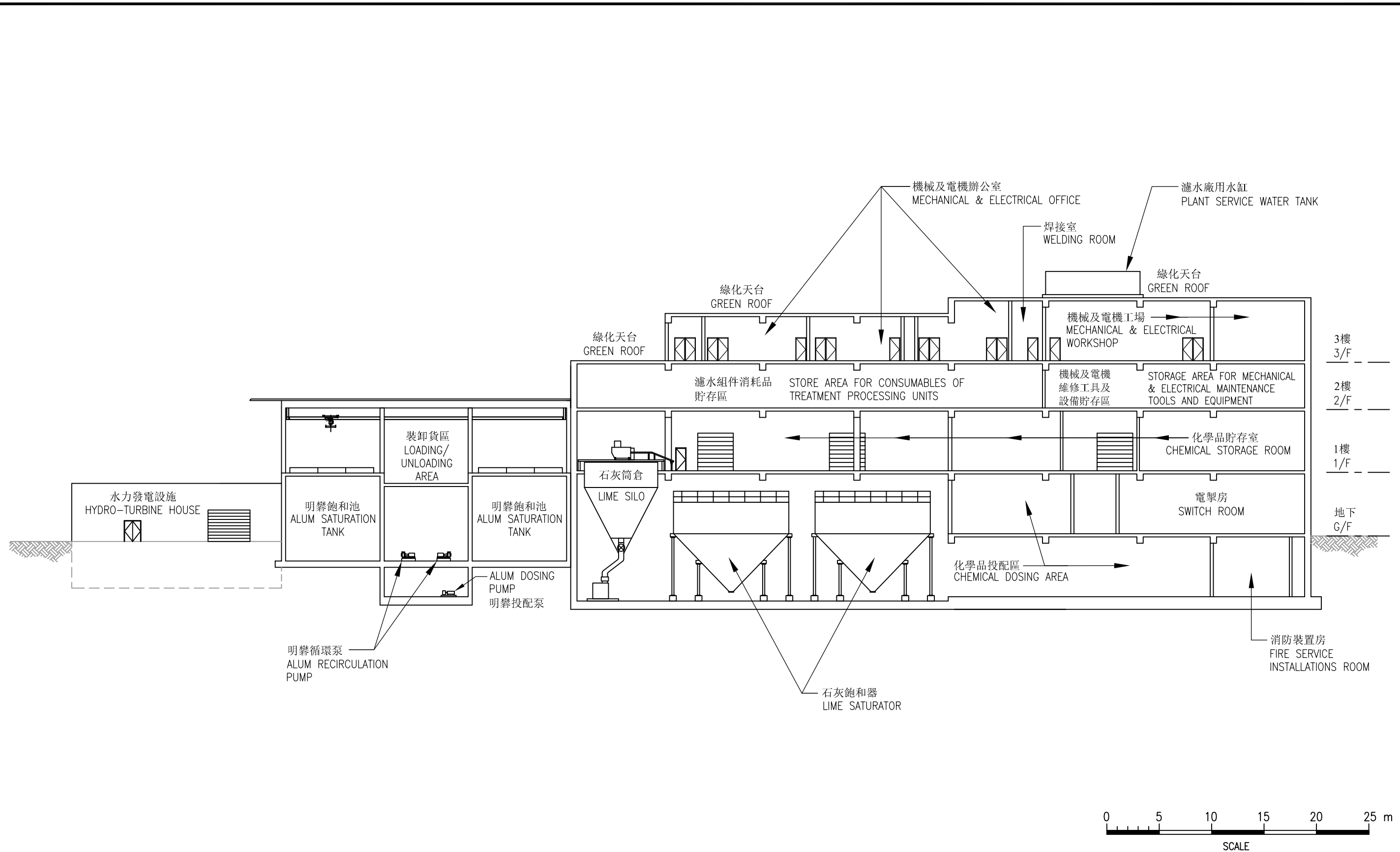
水務署  
WATER SUPPLIES DEPT.  
草圖編號  
SKETCH NO. SK 62015 / 027



核准 APPROVED  
Original Signed  
總工程師/工程管理 CE / PM  
21 / 5 / 2015

工務計劃項目第181WF號 — 沙田濾水廠(南廠)原地重置工程 — 前期工程  
PWP ITEM NO. 181WF — In-situ reprovisioning of Sha Tin water treatment works (South Works) - advance works

水務署 WATER SUPPLIES DEPT.  
草圖編號 SKETCH NO. SK 62014 / 131



核准 APPROVED  
Original Signed  
總工程師/工程管理 CE / PM  
21 / 5 / 2015

工務計劃項目第181WF號 --- 沙田濾水廠(南廠)原地重置工程 - 前期工程  
後勤中心 A-A 剖面圖  
PWP ITEM NO. 181WF --- In-situ reprovisioning of Sha Tin water treatment works (South Works) - advance works  
Logistics Centre Cross - section A - A

水務署  
WATER SUPPLIES DEPARTMENT  
草圖編號 SKETCH NO. SK 62015 / 020

**181WF – In-situ reprovisioning of Sha Tin water treatment works  
(South Works)**

**Breakdown of the estimates for consultants’ fees and resident site staff costs  
(in September 2014 prices)**

Consultant’s staff costs		Estimated Man Months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a) Consultants’ fees for contract administration (Note 2)	Professional	-	-	-	15.8
	Technical	-	-	-	1.8
				Sub-total	17.6
(b) Resident site staff (RSS) costs (Note 3)	Professional	345	38	1.6	39.4
	Technical	1 882	14	1.6	73.4
				Sub-total	112.8
Comprising					
(i) Consultants’ fees for management of RSS					8.4
(ii) Remuneration of RSS					104.4
				<b>Total</b>	<b>130.4</b>

\*MPS = Master Pay Scale

**Notes**

1. A multiplier of 1.6 is applied to the average MPS salary point to estimate the cost of RSS supplied by the consultants (as at now, MPS point 38 = \$71,385 per month and MPS point 14 = \$24,380 per month).
2. The consultants’ staff cost for contract administration is calculated in accordance with the existing consultancy agreement for the design and construction of the project. The construction phase of the assignment will only be executed subject to Finance Committee’s approval to upgrade the project to Category A.
3. The actual man-months and actual costs will only be known after completion of the construction works.

沙田瀘水廠原地重置工程(南廠)  
181WF – In-situ reprovioning of Sha Tin water treatment works (South Works)

6 棵受影響珍貴樹木的詳情 Details of Six Important Trees Affected

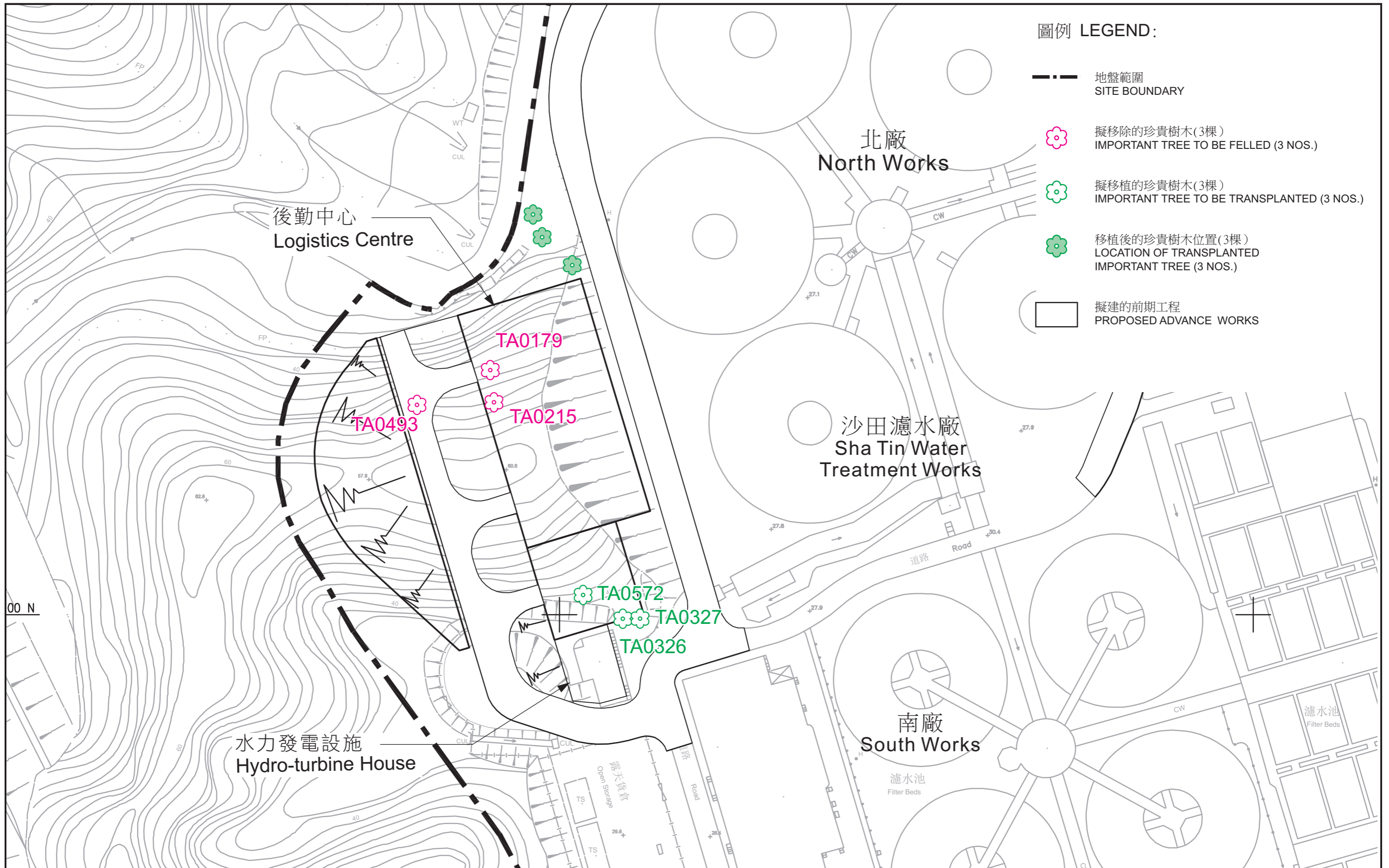
樹木編號 <sup>(1)</sup> Tree No. <sup>(1)</sup>	品種 Species		量度 Measurements			觀賞價值 <sup>(3)</sup> Amenity value <sup>(3)</sup>	形態 Form	健康狀況 Health condition	結構狀況 Structural condition	移植合適度 <sup>(4)</sup> Suitability for transplanting <sup>(4)</sup>		保育狀況 <sup>(5)</sup> Conservation status <sup>(5)</sup>	建議處置方法 (保留/移植/砍伐) Recommendation (Retain/ Transplant/Fell)	提供專業意見予地政總署的部門 Department to provide expert advice to LandsD
	學名 Scientific name	中文名 Chinese name	高度 (米) Height (m)	胸徑 <sup>(2)</sup> (毫米) DBH <sup>(2)</sup> (mm)	樹冠闊度 (米) crown spread (m)	(良好/一般/差劣) (Good/Fair/Poor)			(高/中/低) (High/Med/Low)	備註 Remarks				
TA0179	Aquilaria sinensis	牙香樹 (土沉香)	5.0	180	4.0	差劣 Poor	一般 Fair	差劣 Poor	一般 Fair	低 Low	樹木的形態嚴重傾斜，令根球難以生長。此外，樹幹被觀察到有由砍伐造成的傷口，這會進一步影響該樹於移植後的存活率，因此建議將之砍伐。 Tree exhibited serious leaning form which make it very difficult to form a viable rootball. Besides, hewed wound was observed on tree trunk and this will further affect the survival rate after transplantation. It is therefore recommended to be felled.	是 Yes	砍伐 Fell	康樂及文化事務署 Leisure and Culture Services Department
TA0215	Aquilaria sinensis	牙香樹 (土沉香)	7.0	190	4.0	差劣 Poor	一般 Fair	差劣 Poor	一般 Fair	低 Low	樹木的形態嚴重傾斜，令根球難以生長。此外，樹幹被觀察到有由砍伐造成的傷口，這會進一步影響該樹於移植後的存活率，因此建議將之砍伐。 Tree exhibited serious leaning form which make it very difficult to form a viable rootball. Besides, hewed wound was observed on tree trunk and this will further affect the survival rate after transplantation. It is therefore recommended to be felled.	是 Yes	砍伐 Fell	康樂及文化事務署 Leisure and Culture Services Department

樹木編號 <sup>(1)</sup> Tree No. <sup>(1)</sup>	品種 Species		量度 Measurements			觀賞價值 <sup>(3)</sup> Amenity value <sup>(3)</sup>	形態 Form	健康狀況 Health condition	結構狀況 Structural condition	移植合適度 <sup>(4)</sup> Suitability for transplanting <sup>(4)</sup>		保育狀況 <sup>(5)</sup> Conservation status <sup>(5)</sup>	建議處置方法 (保留/移植/ 砍伐) Recommendation (Retain/ Transplant/Fell)	提供專業意見予地政 總署的部門 □Department to provide expert advice to LandsD
	學名 Scientific name	中文名 Chinese name	高度(米) Height (m)	胸徑 <sup>(2)</sup> (毫米) DBH <sup>(2)</sup> (mm)	樹冠闊 度(米) crown spread (m)	(良好/一般/差劣) (Good/Fair/Poor)				(高/中/低) (High/Med/Low)	備註 Remarks			
TA0326	Aquilaria sinensis	牙香樹 (土沉香)	12.0	270	6.0	一般 Fair	良好 Good	一般 Fair	良好 Good	高 High	-	是 Yes	移植 Transplant	康樂及文化事務署 Leisure and Culture Services Department
TA0327	Aquilaria sinensis	牙香樹 (土沉香)	8.0	170	2.0	良好 Good	良好 Good	良好 Good	良好 Good	高 High	-	是 Yes	移植 Transplant	康樂及文化事務署 Leisure and Culture Services Department
TA0493	Aquilaria sinensis	牙香樹 (土沉香)	2.0	100	1.0	差劣 Poor	差劣 Poor	差劣 Poor	差劣 Poor	低 Low	樹木的形態嚴重傾斜，整體高度只有 2 米。此外，樹幹被觀察到有由砍伐造成的傷口，這會進一步影響該樹於移植後的存活率，因此建議將之砍伐。  Tree exhibited a serious leaning form and the overall height is only 2m high. Besides, hewed wound was observed on tree trunk and this will further affect the survival rate after transplantation. It is therefore recommended to be felled.	是 Yes	砍伐 Fell	康樂及文化事務署 Leisure and Culture Services Department
TA0572	Ailanthus fordii	福氏臭椿 (常綠臭椿)	12.0	100	3.0	一般 Fair	良好 Good	一般 Fair	良好 Good	中 Med	-	是 Yes	移植 Transplant	康樂及文化事務署 Leisure and Culture Services Department






- 註:
- (1) 這 6 棵樹並非《古樹名木冊》內的樹木
  - (2) 樹木胸徑是指測量人員從其胸部高度位置量度的樹木直徑（量度的高度是離地 1.3 米）。
  - (3) 評估樹木的觀賞價值是基於它的遮蔭、避風雨、屏障、減低污染及消滅噪音功能方面的效用，以及「風水」方面的重要性；分級如下：
    - 良好：屬重要樹木，應予保留，並相應調整設計佈局
    - 一般：屬適宜保留的樹木，以締造優美環境，包括稍遜於「良好」級的健康樹木
    - 差劣：屬枯死、垂死或有潛在危險的樹木，應予移除
  - (4) 有關評估已顧及個別樹木在調查進行期間的狀況（包括健康、結構、樹齡和根部的狀況）、樹木生長環境（包括地形和易達程度），以及樹木品種的內在特性（移植後的存活率）。
  - (5) 這 6 棵樹屬貴重或稀有品種，其中 5 棵牙香樹(土沉香)受《保護瀕危動植物物種條例》(第 586 章)保護，1 棵福氏臭椿(常綠臭椿)則受《林區及郊區條例》(第 96 章)保護。

- Notes:
- (1) The six trees are not in the Register of Old and Valuable Trees.
  - (2) DBH of a tree refers to its diameter at breast height (i.e. measurement at 1.3 m above ground level).
  - (3) Amenity value of the tree is assessed by its functional values for shade, shelter, screening, reduction of pollution and noise and also its fung shui significance, and classified into the following categories.
    - Good : important trees which should be retained by adjusting the design layout accordingly.
    - Fair : trees that are desirable to be retained in order to create a pleasant environment, which includes healthy specimens of lesser importance than “Good” trees.
    - Poor : trees that are dead, dying or potentially hazardous and should be removed.
  - (4) Assessment has taken into account conditions of individual trees at the time of survey (including health, structure, age and root conditions), site conditions (including topography and accessibility), and intrinsic characters of tree species (survival rate after transplanting).
  - (5) The six trees are precious or rare species with five Aquilaria sinensis protected under the Protection of Endangered Species of Animals and Plants Ordinance (Cap 586) and one Ailanthus fordii protected under the Forest and Countryside Ordinance (Cap 96).





圖例 LEGEND:

-  地盤範圍  
SITE BOUNDARY
-  擬移除的珍貴樹木(3棵)  
IMPORTANT TREE TO BE FELLED (3 NOS.)
-  擬移植的珍貴樹木(3棵)  
IMPORTANT TREE TO BE TRANSPLANTED (3 NOS.)
-  移植後的珍貴樹木位置(3棵)  
LOCATION OF TRANSPLANTED IMPORTANT TREE (3 NOS.)
-  擬建的前期工程  
PROPOSED ADVANCE WORKS

核准 APPROVED  
Original Signed  
總工程師/工程管理 CE / PM  
29 / 5 / 2015

工務計劃項目第181WF號 — 沙田瀘水廠(南廠)原地重置工程 — 前期工程  
珍貴樹木  
PWP ITEM NO. 181WF — In-situ reprovisioning of Sha Tin water treatment works (South Works) - advance works  
Important Tree

 水務署  
WATER SUPPLIES DEPT.  
草圖編號 SKETCH NO. SK 62015 / 026