

SAI KUNG AREA 4 SEWAGE PUMPING STATION

PROJECT PROFILE

**The Government of the Hong Kong Special Administrative Region
Drainage Services Department**

August 2001

1. Basic Information

1.1 Project Title

Sai Kung Area 4 Sewage Pumping Station

1.2 Purpose and Nature of the Project

The Project comprises the construction of a sewage pumping station (hereinafter called the Pumping Station) at Sai Kung Planning Area No. 4. The Pumping Station will serve to convey the sewage collected from the developments in Sai Kung Area 4 and the adjoining villages, namely Wong Chuk Wan and environs to Sai Kung, Tai Wan, Sha Ha, Sha Kok Mei, Tsam Chuk Wan and Tai Mong Tsai, to the existing Sai Kung Sewage Treatment Works for treatment and disposal.

1.3 Name of Project Proponent

Sewerage Projects Division, Drainage Services Department.

1.4 Location and Scale of the Project

The Pumping Station is located next to Wai Man Road as shown on the attached Drawing Number DDN/273DS/0009. The site for the Pumping Station is a reclaimed land and is currently an undeveloped area. The design average dry weather flow of the Pumping Station is 7,500 m³/day. The Pumping Station will be enclosed by a single-storey superstructure. The inlet chamber and wet well of the Pumping Station will be located underground and enclosed with covers.

1.5 Number and Type of Designated Project

The Pumping Station constitutes a Designated Project under Schedule 2, Part I, F.3(b) of the Environmental Impact Assessment Ordinance (EIAO).

1.6 Contact Person

2. Outline of Planning and Implementation Programme

2.1 The Sewerage Projects Division and the Electrical and Mechanical Projects Division of Drainage Services Department will carry out the design of the Pumping Station. They will also supervise the construction of the Pumping Station by qualified contractors. The Sewage Treatment Division 1 of Drainage Services Department will operate and maintain the Pumping Station.

2.2 Design of the Pumping Station is in progress. The tentative implementation programme is as follows:

Design:	06/00 – 06/02
Tender:	07/02 – 12/02
Construction:	01/03 – 12/05
Commissioning & Operation:	02/06

2.3 There would be no major construction works nearby during the construction of the Pumping Station.

3. Possible Impacts on the Environment

3.1 *During Construction Stage*

(a) Dust

Dust may be generated from the construction activities, mainly the earthworks.

(b) Noise

The construction activities will generate some noise through the use of conventional construction plants and equipment.

(c) Water

During the course of construction, muddy underground water, if any, will be pumped away from the excavation pit into a silt removal facility before discharging into the nearby stormwater drains.

(d) Landscape and Visual Impacts

The look of a normal low-rise building construction site will be seen.

3.2 *During Operation and Maintenance Stage*

(a) Odour

The inlet chamber and wet well of the Pumping Station could be sources of odour nuisance if not enclosed.

(b) Water Quality

The Pumping Station is an integral part of the Port Shelter sewerage works, which aims at conveying sewage collected from development within its catchment to the existing Sai Kung Sewage Treatment Works for treatment and disposal. Implementation of the Pumping Station will enhance the water quality of the surrounding environment, and will not cause any adverse impact except if sewage is bypassed under emergency situation. In such case, it will firstly be bypassed to a separate existing sewerage nearby in order avoid direct discharge to the storm water drains and thereafter into the sea. Actual bypass of sewage to sea would occur only when the capacity of the existing sewerage available during the occurrence of emergency at the Pumping Station has been exhausted. However, with the implementation of preventive measures described in paragraph 5.2(b), the probability of sewage bypass will be extremely remote.

(c) Noise

The pumps and extraction fans of the de-odorizer are potential noise sources during operation and maintenance of the Pumping Station.

(d) Waste

Mechanically raked bar screens will be installed at the inlet chamber to prevent large solid materials in sewage from entering the pumps and thus causing damage to them. A small quantity of screenings will thus be generated.

(e) Landscape and Visual Impacts

The Pumping Station is a low-rise building and surrounded by a planting strip. Aesthetics will be a key factor to be considered in order to minimize the potential landscape and visual impacts of the Pumping Station.

4. Major Elements of the Surrounding Environment

- 4.1 The following major existing/planned developments surrounding the Pumping Station are identified together with the distance between these developments and the Pumping Station indicated in brackets: - Electricity Substation (8m), Wai Man Road Playground (40m), Sai Kung Central Lee Siu Yam Memorial School (52m), Sai Kung District Community Centre (108m), Sai Kung Public Swimming Pool and Sports Complex (80m) , Hotel Development (34m), Residential Development (95m) and Education Development (115m). With the implementation of proper mitigation measures, the Pumping Station will have insignificant impact on these developments.

5. Environmental Protection Measures to be incorporated in the Design and Further Environmental Implications

5.1 During Construction Stage

(a) Dust

The effect of dust generation from the construction works is expected to be insignificant as the scale of earthworks involved is very small. The impact will be minimized by the adoption of proper working methods such as regular water spraying and providing wheel washing facilities. Relevant provisions will be incorporated into the contract documents in this regard.

(b) Noise

The construction activities involved will include earthworks, general concrete building and bored mini-piling works. Common construction plant including backhoe, batching plant, concrete mixer, vibratory poker, pneumatic breaker, drilling rigs and the like will be used. It is anticipated that minor noise impacts will be generated. Notwithstanding this, provisions will be incorporated into the construction contract to limit the noise generated to within acceptable levels, by stipulating compliance by the contractor with the Noise Control Ordinance and provisions of the Technical Memorandum of the EIAO.

(c) Water

It is anticipated that minor water quality impact will be generated during excavation works. The contractor will be required to provide, where necessary, a silt removal facility on site so as to remove the silt before discharging into the nearby stormwater drains. Silt removal facility will be provided by the contractor before commencement of the excavation.

(d) Landscape and Visual Impacts

The potential impacts on landscape and visual aspects are expected to be minimum and temporary in nature. These potential impacts will be minimized by erection of hoarding around the Pumping Station site. Relevant provisions will be incorporated into the contract documents in this regard.

5.2 During Operation and Maintenance Stage

(a) Odour

To minimize odour impacts, both the inlet chamber and wet well of the Pumping Station will be located underground and enclosed with covers. A forced ventilation system will be installed whereby air is extracted from these two spaces and passed through a de-odorizer for cleansing before being discharged into open air. A reinforced concrete building will be constructed to house all the above

facilities. With these measures in place any possible odour impacts can be mitigated.

(b) Water Quality

To minimize water quality impacts arising from bypass of sewage, a standby pump and a standby screen will be provided to cater for periods of duty pumps and screen breakdown and maintenance, i.e. sewage bypass will not occur under such situations. Besides, twin rising mains will be provided to further minimize or even eliminate the occurrence of sewage bypass when one of the rising mains is out of services. A telemetry system will also be provided in order to send signals showing irregularity or any operation problem of the Pumping Station to the nearby existing Sai Kung Sewage Treatment Works such that immediate actions could be taken in case of emergency. Dual supply feeders (ring form) to the Pumping Station will be provided. Should this not be adopted, a standby automatic-operated generator will be installed to provide back-up power supply. Apart from these, a 2-hour storage capacity at average flow rate will be provided in the wet well. With these measures in place the need to bypass sewage from the Pumping Station during emergency is anticipated to be extremely remote.

Even when all the above measures have been exhausted, sewage from the Pumping Station will firstly be bypassed to the separate existing foul sewers nearby instead of directly to the stormwater drainage system. This arrangement would fully utilize the capacity of the existing sewerage available during the time of emergency of the Pumping Station. Actual sewage bypass to sea will occur only when bypass of sewage from the Pumping Station coincides with the peak flow of the existing sewerage. Hence, the chance of actual sewage bypass to sea will be further reduced.

(c) Noise

To minimize any noise impact from operating pumps, all the pumps will be located underground in the dry well, which will be enclosed inside the Pumping Station. The extraction fans of the de-odorizer will also be located within the building. Furthermore, all equipment, and appropriate mitigation measures if required, will be designed and installed for compliance with the Technical Memorandum on EIA Process of the EIAO at the noise sensitive receivers in the vicinity of the Pumping Station.

(d) Waste

The screenings of the sewage will be properly packed in plastic bags within the Pumping Station before being transported to landfill.

(e) Landscape and Visual Impacts

Topsoil at the Pumping Station site will be preserved as far as possible and soil excavation will be limited to the absolute necessity for the construction of the Pumping Station.

Aesthetics will be a major consideration in the design of the Pumping Station. Architectural finishes will be provided on the external surface of the Pumping Station. Moreover planting will be provided as shown on the attached Drawing Number DDN/273DS/0008 to enhance its appearance. The overall landscape and visual design of the Pumping Station shall give an impression of leisure/recreation facilities.

5.3 Summary of potential Environmental Impacts and Mitigation Measures

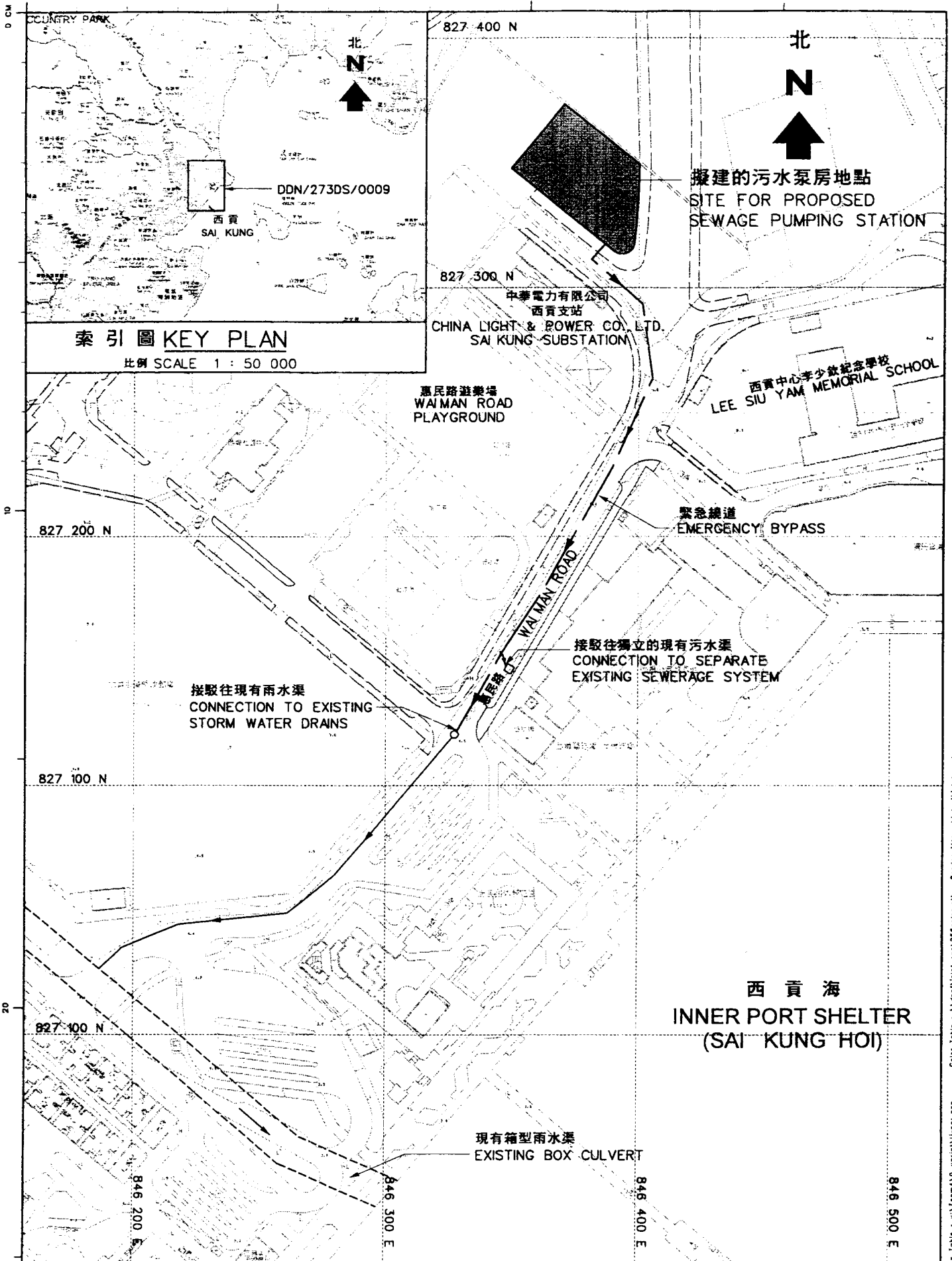
The above potential impacts and proposed mitigation measures are summarized in Table 1:

Table 1

<i>Project Stage</i>	<i>Potential Environmental Impact</i>	<i>Mitigation Measures</i>	<i>Relevant Section in the Project Profile</i>
Construction	Minor dust impact	Control by contract provisions	5.1(a)
	Minor noise impact	Control by contract provisions	5.1(b)
	Minor water impact	Control by contract provisions	5.1(c)
	Minor landscape and visual impacts	Control by contract provisions	5.1(d)
Operation and Maintenance	Odour impact	1. Housing the odour source 2. A de-odorizer will be installed to remove odour from the exhausted air	5.2(a)
	Water quality impact from emergency sewage bypass	Provision of the followings: 1. A standby pump and a standby screen 2. Twin Rising Mains 3. A Telemetry System 4. Dual power supply either in form of dual supply feeders (ring form) to the Pumping Station or a standby automatic-operated generator 5. Wet well storage	5.2(b)
	Noise impact	Housing the equipment	5.2(c)
	Generation of screenings	1. Containment 2. Proper disposal	5.2(d)
	Landscape and visual impacts	1. Provision of architectural finishes 2. Provision of planting	5.2(e)

The Pumping Station will cause little, if any, additional environmental impacts on the surrounding environment. This is particularly true in view of the currently enhanced design standards for the Pumping Station. Letting alone this, the above preventive and mitigation measures are considered sufficient measures to mitigate the possible environmental impacts that may arise from the project.

-END-



索引圖 KEY PLAN

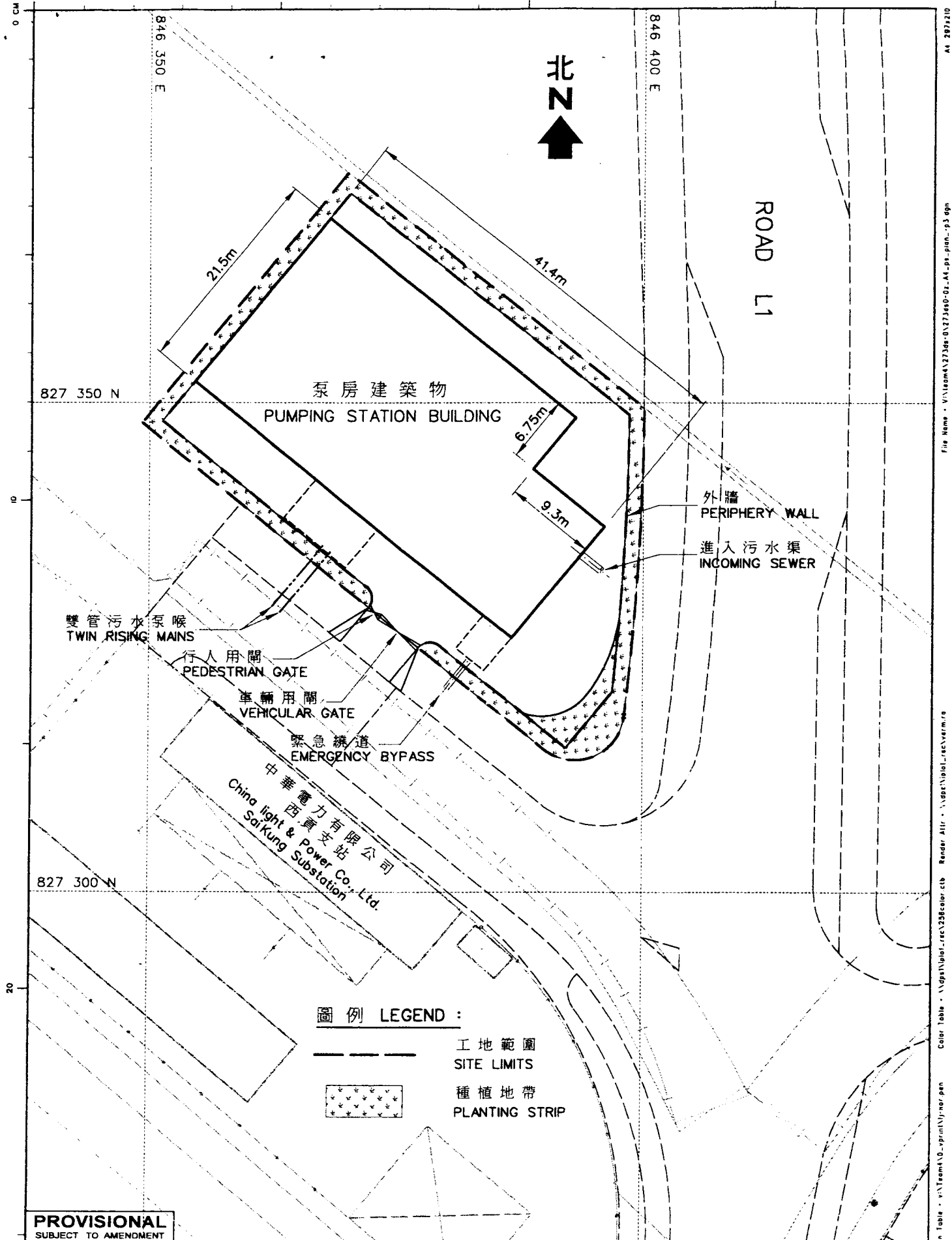
比例 SCALE 1 : 50 000

圖則名稱 drawing title
 西貢第4區污水泵房
 擬建的污水泵房位置圖
 SAI KUNG AREA 4
 SEWAGE PUMPING STATION
 LOCATION OF PROPOSED

繪畫 drawn *Michael* W. H. TSUI 日期 date 13.8.01
 核對 checked *K.Y.* K. Y. MA 日期 date 13.8.01
 批核 approved *K.M.* K. M. CHAU 日期 date 13.8.01

圖則編號 drawing no. DDN/273DS/0009 比例 scale 1 : 2 000 OR AS SHOWN
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 香港特別行政區政府渠務署
 DRAINAGE SERVICES DEPARTMENT

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圖例 LEGEND :

—— 工地範圍 SITE LIMITS

—— 種植地帶 PLANTING STRIP

PROVISIONAL
SUBJECT TO AMENDMENT

圖則名稱 drawing title
西貢第4區污水泵房
種植佈局設計圖
SAI KUNG AREA 4
SEWAGE PUMPING STATION

繪畫 drawn <i>Louis</i> M. F. YEUNG	日期 date 13. 8. 01
核對 checked <i>Ms</i> K. Y. MA	日期 date 13. 8. 01
批核 approved <i>C</i> K. M. CHAU	日期 date 13. 8. 01
部門 office 三 水 工 程 部	

圖則編號 drawing no.
DDN/273DS/0008

比例 scale
1 : 500

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