渠務署
Drainage Services Department

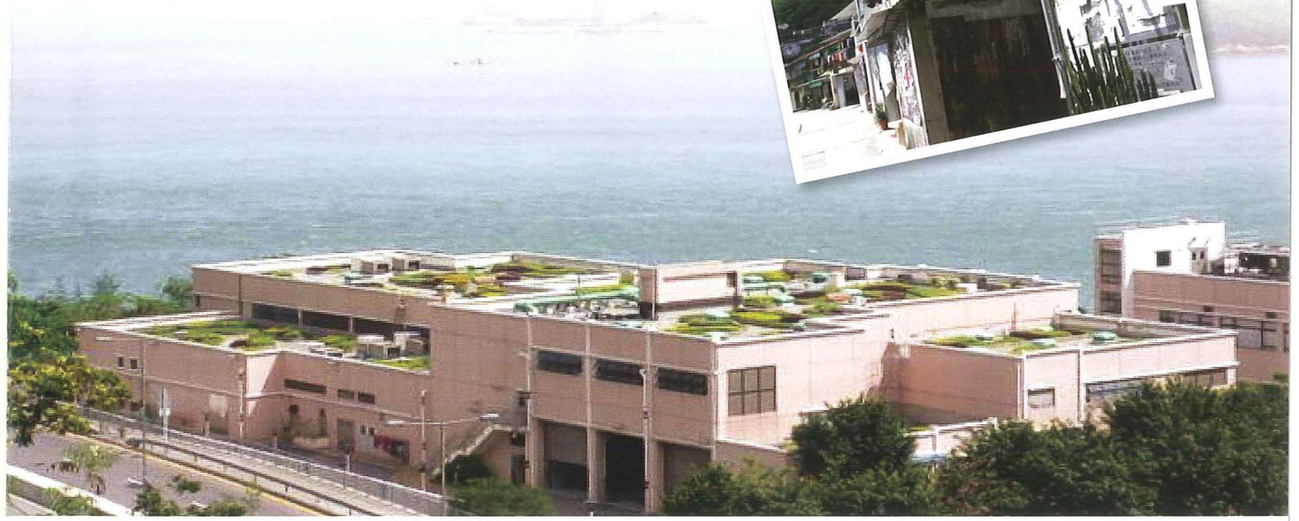
# 深井污水處理廠
# Sham Tseng Sewage Treatment Works

深井污水處理廠佔地約1.1公頃，是一所化學輔助一級處理廠，可為青山道沿線由近水灣至青龍頭等地區，約三萬九千人提供污水處理服務。現時每日的處理量達5 600立方米。

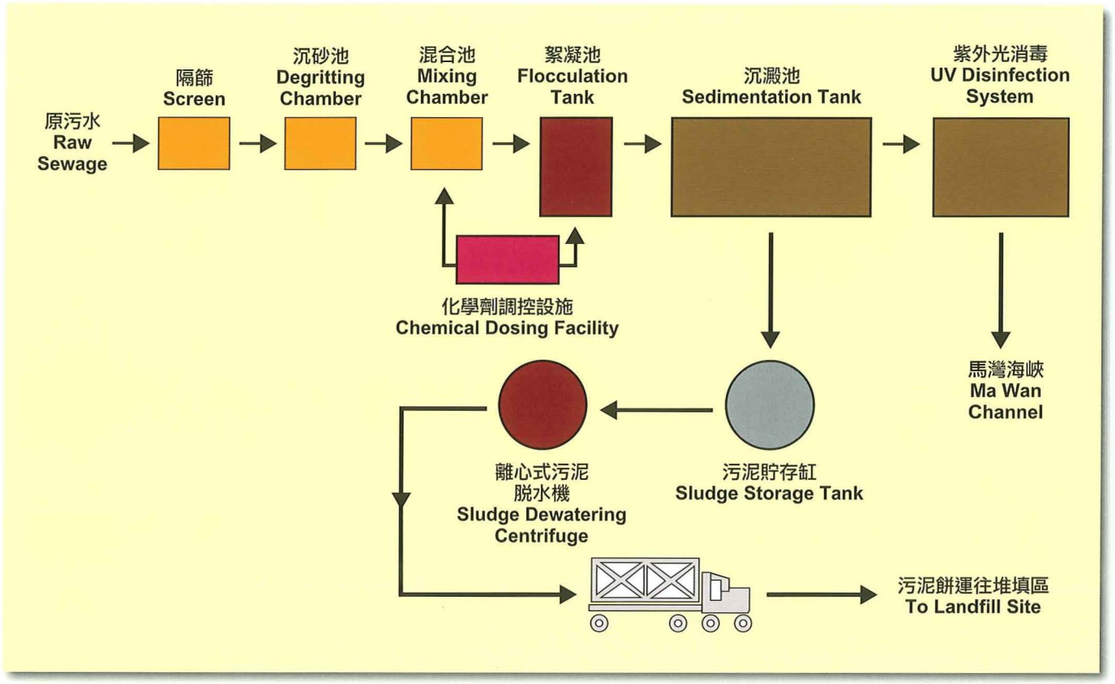
深井污水處理廠以設計和建造合約模式建造，並在二零零四年底投入服務。設施包括四座初級沉澱池、化學劑調控設施、紫外光消毒系統和污泥處理設施。污水廠的設計處理量為每日17 000立方米。

Sham Tseng Sewage Treatment Works (Sham Tseng STW) is a chemically enhanced primary treatment works, occupying 1.1 hectares of land. It provides sewage treatment services to a population of 39,000 in the areas from Approach Bay to Tsing Lung Tau along Castle Peak Road. Its current inflow is 5,600 $m^3$ per day.

Sham Tseng STW was constructed under a Design & Build Contract. The STW commenced its operation in late 2004. It includes four primary sedimentation tanks, chemical dosing facilities, ultra-violet disinfection system and sludge treatment facilities. The design treatment capacity of the STW is 17,000 $m^3$ per day.

## 污水處理流程圖 Sewage Treatment Process Flowchart




## 經處理的排放水重要參數
## Key Parameters of Treated Effluent

| 重要參數 (Key Parameters) | 排放標準 (Discharge Standards) |
|---|---|
| 設計流量 (Design Flow) | 每日17,000立方米 ($m^3$/day) |
| 總懸浮固體 (Total Suspended Solids) | 100毫克/升 (mg/L) |
| 五天生化需氧量 (5-day Biochemical Oxygen Demand) | 180毫克/升 (mg/L) |
| 大腸桿菌 (E. Coli) | ≤60,000個/100毫升 (Count/100mL) |

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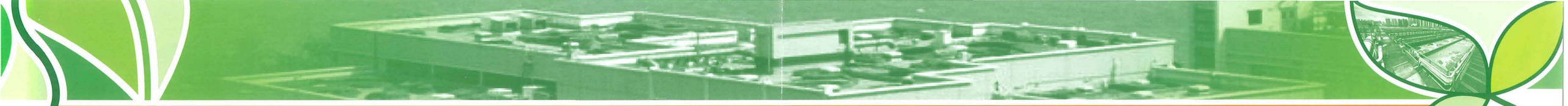
**我們的抱負 Our Vision**

提供世界級的污水和雨水處理排放服務，以促進香港的可持續發展。

To provide world-class wastewater and stormwater drainage services enabling the sustainable development of Hong Kong.



## 污水處理過程 Sewage Treatment Process

### 篩除及除砂

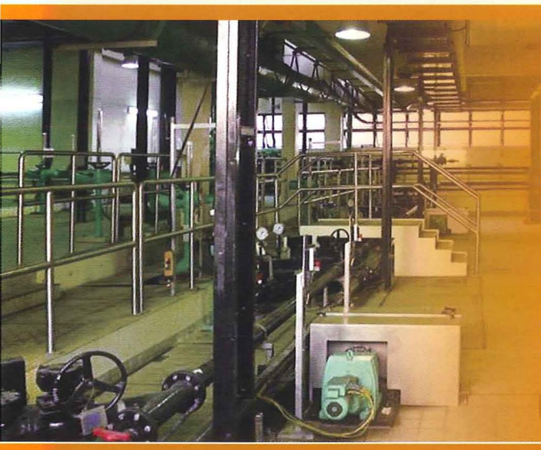
污水由外圍污水泵房輸送到處理廠的進水口。污水經過粗（25毫米）、幼（6毫米）機械式隔篩把大塊固體廢物清除。之後，污水會流入沉砂池以清除砂礫。

*幼隔篩*
*Fine Screens*

*分砂器*
*Grit Classifier*

### Screening & Degritting

Sewage is pumped to the plant inlet from outlying sewage pumping stations. Sewage passes through coarse screen (25 mm) and fine screen (6 mm) by which gross solids are removed. After screening, sewage is directed to grit classifiers for grit removal.



### 化學輔助一級處理沉澱設施

經基本處理的污水在快速攪拌池（共兩池）及絮凝池（共四池）內會先後被加入明礬和化學聚合物，令懸浮固體聚合形成絮凝塊後容易沉澱。

### 沉澱

加入化學物後的污水在沉澱池停留約兩小時。絮凝塊會在池底沉澱成污泥。鏈刮式刮耙會把污泥連同池面的懸浮物一起刮除並泵至另一組設施進行脫水處理。

整個污水處理過程按設計可消除污水中百分之七十五的懸浮物和百分之五十九的生化需氧量。

*有蓋沉澱池*
*Covered Sedimentation Tanks*

### Sedimentation Facilities for Chemically Enhanced Primary Treatment

Preliminarily treated sewage mixes with alum and then polymer at rapid mixing tanks (2 nos.) and flocculation tanks (4 nos.). Suspended solids are adhered to each other forming larger flocs to facilitate settling.

### Sedimentation

Sewage dosed with chemicals retains in the sedimentation tank for approximately 2 hours. Flocs are settled at the bottom of the tank as sludge. Together with scum at the surface, they are removed by the chain & flight scrapper and pumped to a separate facility for dewatering.

The whole sewage treatment process is designed to remove 75% suspended solids and 59% Biochemical Oxygen Demand.

### 化學劑調控設施

化學劑調控設施包括儲存、配劑和輸送明礬及聚合物溶液往沉澱池的所需設備。

### Chemical Dosing Facilities

The chemical dosing facilities include storage, batching and pumping of alum and polymer solution to the sedimentation tanks.

### 消毒

經過沉澱，排放水會被紫外光消毒，然後經海底管道排放出馬灣海峽。

### 污泥處理設施

污泥和浮渣被泵到污泥貯存缸，混和聚合物後被輸送到離心式脫水機，脫水至污泥的含固體量最少達百份之三十，然後用密封式容器把脫水後的污泥送往堆填區棄置。

*污泥脫水設施*
*Sludge Dewatering Facilities*

### Disinfection

After sedimentation, effluent is disinfected by ultraviolet light and discharged to Ma Wan Channel via submarine outfall.

### Sludge Treatment Facilities

The settled sludge & scum collected at holding tanks will be mixed with polymer before dewatering by centrifuges to achieve a minimum dryness of 30%. The dewatered sludge will then be transported using sealed containers for disposal at landfill.

### 環境保護

謹慎設計的現代化廠房把大部份設施藏於建築物內，並加設辟味設施，避免氣味及機械聲音對鄰近居民構成滋擾。

為提供更多的綠化環境，工程合約中特別列明要在污水處理大樓設有天台花園。這是第一個渠務署由工程合約所提供的天台花園。

### Environmental Protection

This modern treatment plant has been carefully designed to enclose most of the equipment and install deodourizing facilities in order to avoid bringing odour and noise nuisance to nearby residents.

To provide more greening to the environment, the contract particularly specified the provision of a roof garden at the treatment building. This is the first roof garden provided under a DSD works contract.

*天台花園*
*Roof Garden*