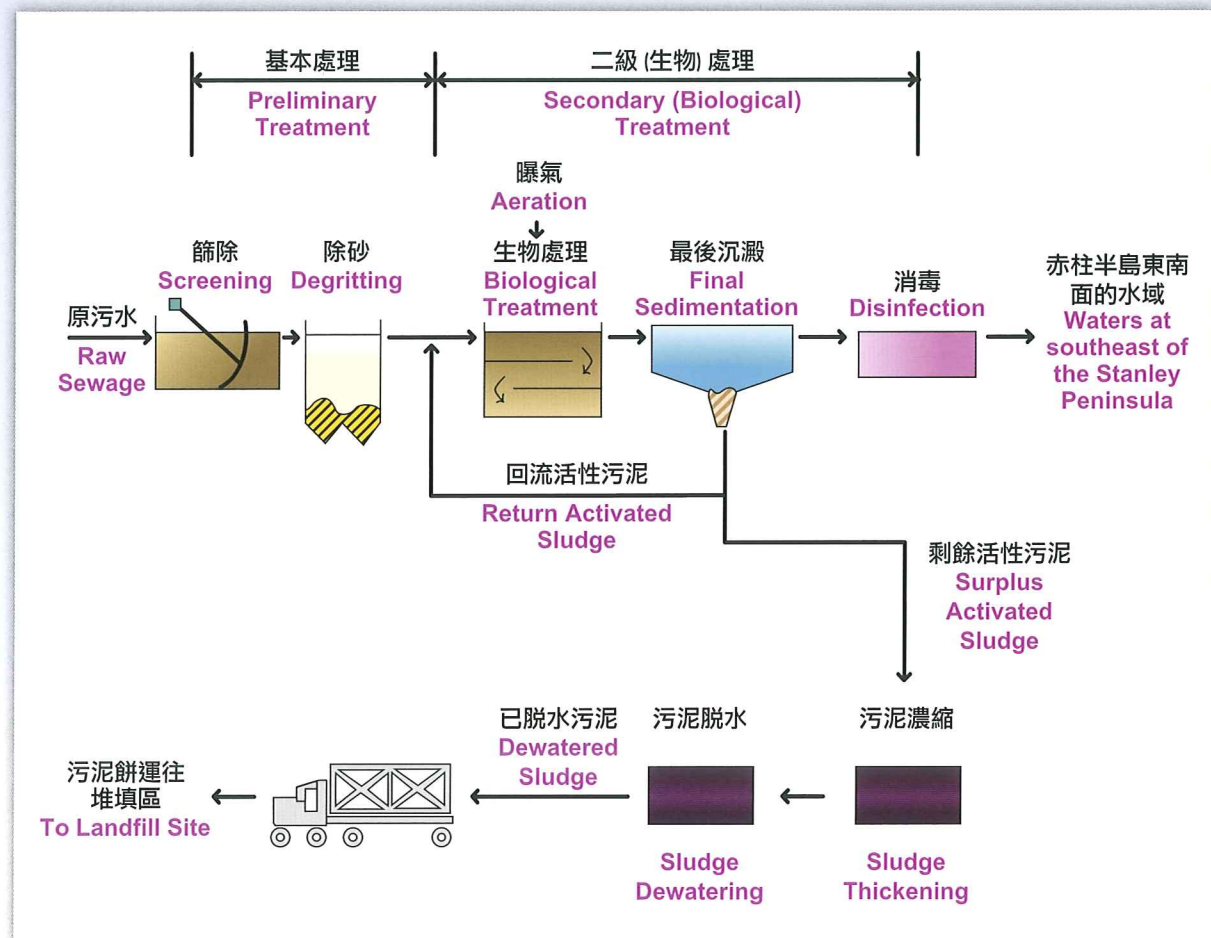


## 污水處理流程圖 Sewage Treatment Process Flowchart



## 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11,600立方米(m <sup>3</sup> /day) |
| 總懸浮固體 (Total Suspended Solids)            | ≤30毫克/升(mg/L)                    |
| 五天生化需氧量 (5-day Biochemical Oxygen Demand) | ≤20毫克/升(mg/L)                    |
| 氨氮 (Ammonia-Nitrogen)                     | ≤5毫克/升(mg/L)                     |
| 硝酸鹽+亞硝酸鹽氮 (Nitrate + Nitrite-Nitrogen)    | ≤8毫克/升(mg/L)                     |
| 大腸桿菌 (E. Coli)                            | ≤15,000個/100毫升(Count/100mL)      |

## 赤柱污水處理廠 Stanley Sewage Treatment Works

赤柱污水處理廠建於洞穴中，是一所二級污水處理廠，為赤柱半島、大潭、春磡角和紅山地區超過二萬七千市民提供污水處理服務，現時每日的處理量達8 800立方米。污水會經由外圍泵房收集及送到赤柱污水處理廠作進一步處理。

作為於一九八九年釐定的赤柱污水渠系統及污水排放計劃的主要部份，赤柱污水處理廠的設計和建造採用了最新的技術。為維持該地區的景緻，赤柱污水處理廠興建於三個大洞穴中，每個大約120米長、15米寬和17米高，並由超過450米通道、通風隧道及豎井連接。這樣不但不礙觀瞻，並且在建造及日常運作時不會對鄰近居民構成環境影響，更是東南亞首個同類型污水處理廠。赤柱污水處理廠是根據污水處理量每日11 600立方米而設計，於一九九零年十一月動工，一九九五年二月完工。

**Stanley Sewage Treatment Works** (Stanley STW) is a secondary sewage treatment works, built in caverns. It serves a population of over 27,000 in Stanley, Ma Hang, Tai Tam, Chung Hom Kok and Red Hill areas, which currently produces 8,800 m<sup>3</sup> of sewage per day. Sewage is collected by outlying sewage pumping stations and transferred to the STW for further treatment.

As a key element of the Stanley Sewerage and Sewage Disposal Scheme drawn up in 1989, Stanley STW was designed and constructed with the latest technology. To maintain the natural environment of the area, the STW was built inside three large caverns, each about 120 metres long, 15 metres wide and 17 metres high together with over 450 metres of road access, ventilation tunnels and shafts. Not only visually unobtrusive, the underground works also spared the neighbourhood with unacceptable environmental impact both during construction and its daily operation. The STW is the first of its kind in Southeast Asia. Stanley STW with a design flow of 11,600 m<sup>3</sup> per day was constructed from November 1990 to February 1995.





## 污水處理過程 Sewage Treatment Process

### 篩除及除砂

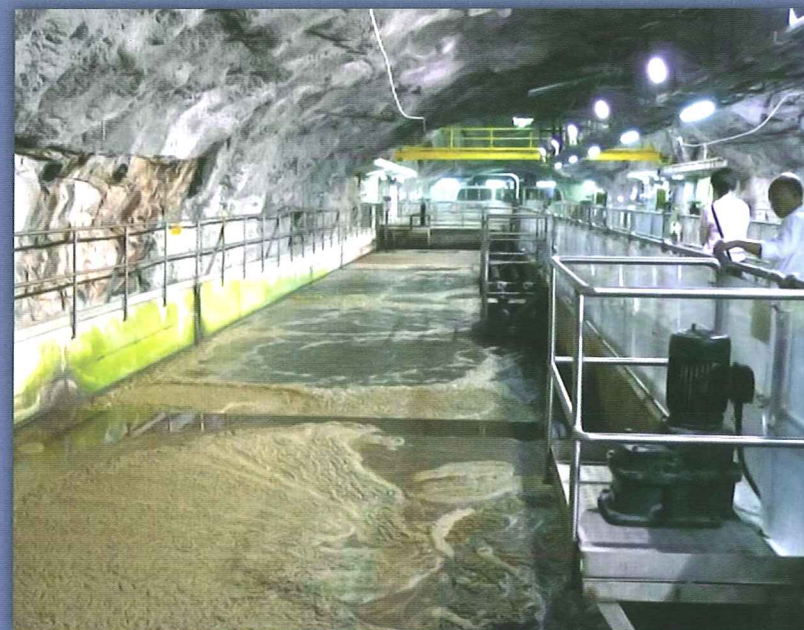
污水經污水渠輸送到進水口，開始其基本污水處理程序，超過6毫米的固體廢物會首先用機械式的隔篩清除，而砂礫則在沉砂池及砂礫分隔器移除。

### Screening and Degritting

Sewage arriving at the Inlet Works is preliminarily treated by mechanical bar screens to remove solids exceeding 6 mm. After screening, the sewage is directed to detritor and grit classifier for grit removal.



幼隔篩 Fine Screen



曝氣池 Aeration Tank

### 二級(生物)處理

壓縮空氣不斷地輸送到曝氣池，為微生物(活性污泥)提供所需的氧氣，這些微生物會分解污水中的污染物。污水在曝氣池逗留約15小時。

### Secondary (Biological) Treatment

In aeration tanks, compressed air is fed continuously to provide oxygen essential to sustain the growth of micro-organisms (activated sludge), which will assimilate pollutants in the sewage. The retention time is about 15 hours.

### 最後沉澱

經處理後的污水和活性污泥會在最後沉澱池內分隔。部分的活性污泥會回流到曝氣池以維持所需的微生物數量，剩餘的活性污泥則被泵到另一個處理設施進行脫水。

### Final Sedimentation

Treated sewage and activated sludge are separated in the final sedimentation tanks. A controlled portion of the activated sludge is fed back to the aeration tank to maintain adequate micro-organism population for biological treatment. The remaining portion (Surplus Activated Sludge, SAS) is pumped to a separate facility for dewatering.



最後沉澱池 Final Sedimentation Tank



消毒槽 Disinfection Channel

### 消毒

經過最後沉澱，適量的次氯酸鈉會加入經處理的排放水，以進行消毒。

### Disinfection

After final sedimentation, the effluent is disinfected by sodium hypochlorite solution before being discharged.

### 污泥脫水

污泥被泵到污泥貯存缸，混和聚合物後被輸送到膜式壓濾機，脫水至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。

### Sludge Dewatering

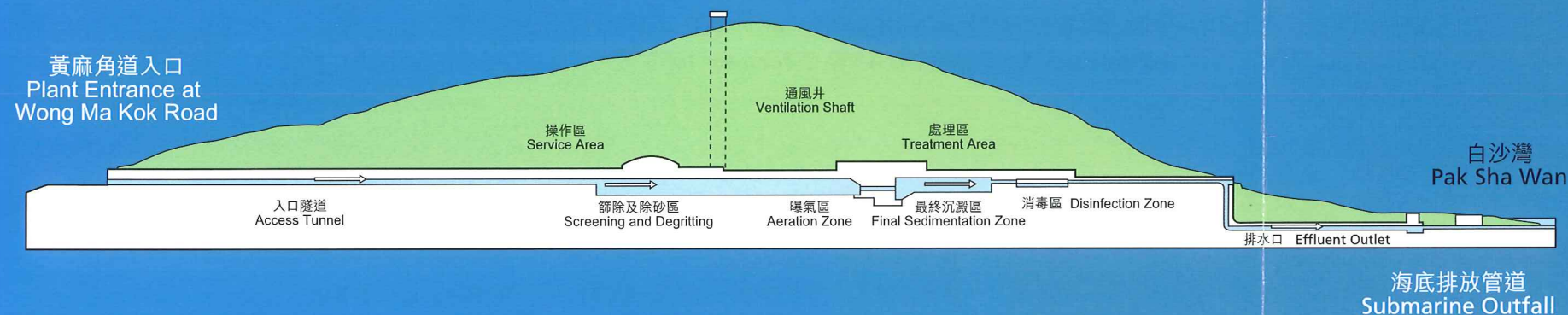
The settled sludge and scum collected at holding tanks will be mixed with polymer before dewatering by membrane filter press to achieve a minimum dryness of 30%. The dewatered sludge would then be transported using sealed containers for disposal at landfill.



膜式壓濾機 Membrane Filter Press

### 赤柱污水處理廠（橫切面圖）

### Stanley Sewage Treatment Works (cross-section view)



### 環境保護

經處理的排放水會經一條直徑0.6米，長2.3公里的海底排放管輸送到赤柱半島東南面的水域排放。

為改善附近居民的生活環境及提供更優質的服務，本廠已安裝了一系列辟味設施，以配合已實施的氣味管理系統。

### Environmental Protection

The treated effluent is discharged to the waters southeast of the Stanley Peninsula via a 0.6 m diameter, 2.3 km long submarine outfall.

To act proactively in an environmental manner and to provide a better service to nearby residents, an odour management system with deodourizing facilities has been put into operation.