

Job references 過往項目

Food Processing Wastewater 食品廠廢水

Lei Garden 利苑

Peak flow 高峰流量

~ 250 m³/day
立方米/天



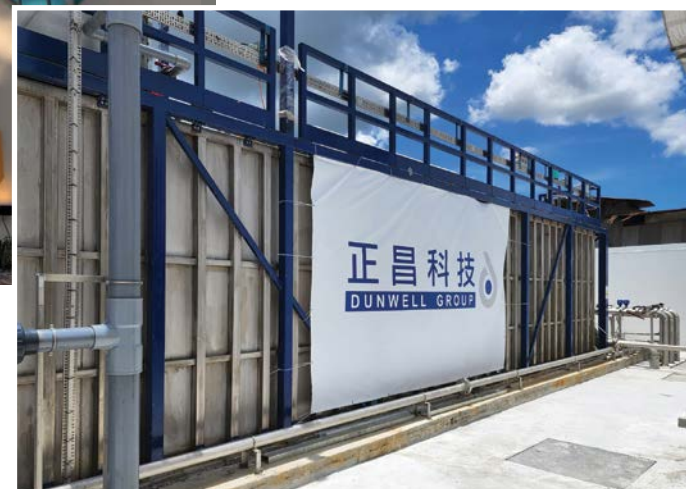
Sewage 生活污水

Yuen Long Transitional Housing

元朗過渡性房屋

Peak flow 高峰流量

~ 4,860 m³/day
立方米/天



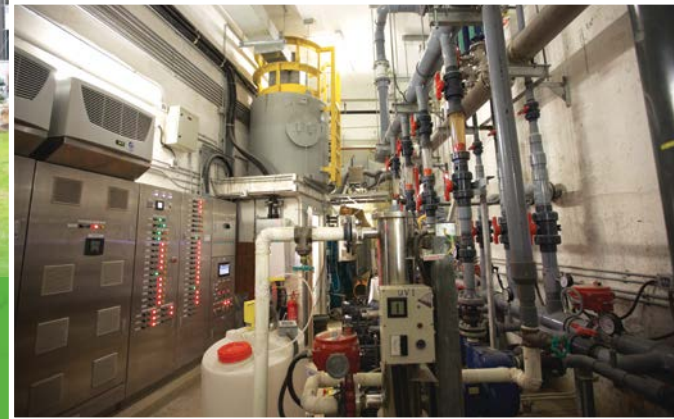
Sewage 污水

Sai Kung Residential Development

西貢高尚住宅區

Peak flow 高峰流量

~ 4,170 m³/day
立方米/天



Industrial Wastewater 工業污水

Hospital Authority Supporting Services Centre

醫院管理局支援服務中心

Peak flow 高峰流量

~ 2,150 m³/day
立方米/天



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Dunwell Membrane Bio-Reactor 正昌膜生物反應器 (DMBR)

Advanced Sewage / Wastewater
Recycling Treatment Plant
先進污水回用系統

- Eliminates Public Sewers
毋需排污渠
- 100% Water Reuse On Site
100%水回用
- Multiple Applications
可處理各類污水
- Remote Monitoring System
在線監控

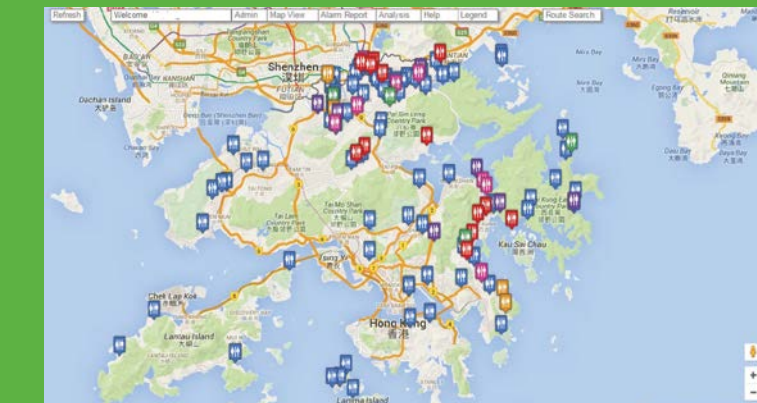
Introduction 介紹

Dunwell Membrane Bio-Reactor (DMBR) is an advanced wastewater treatment process for maximum treatment capacity requirement from sixty to several thousand m³ per day. The system combines the strength of membrane separation, biological treatment and advanced aeration technologies to treat the wastewater. Its high quality effluent can be reused directly on site.

Unlike the traditional activated sludge with sedimentation process, DMBR has greater treatment efficiency and takes up less space which is one of the reasons why it is taking a more important role in the environmental engineering industry. It is applicable for greywater, blackwater, municipal wastewater, commercial wastewater or industrial wastewater.

正昌膜生物反應器(DMBR)是一種先進的廢水處理系統，每天能處理六十至數千立方米。系統利用膜分離、生物處理和先進曝氣技術來處理廢水。處理後的廢水可以直接在現場回用。

與傳統的沉澱工藝活性污泥法不同，DMBR具有更高的處理效率，佔用空間更少，這也是其在環境工程行業中發揮更重要作用的原因之一。適用於灰水、黑水、城市污水、商業廢水或工業廢水。



24-hour remote monitoring system
24小時在線監控



Real-time camera monitoring system
實時攝像監控系統

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升級轉型大獎
UPGRADING AND
TRANSFORMATION
GRAND AWARD



科技成就獎
TECHNOLOGICAL
ACHIEVEMENT AWARD



創意獎
INNOVATION AND
CREATIVITY AWARD



設備及機器設計大獎
EQUIPMENT AND
MACHINERY DESIGN
GRAND AWARD



創意獎
INNOVATION AND
CREATIVITY AWARD

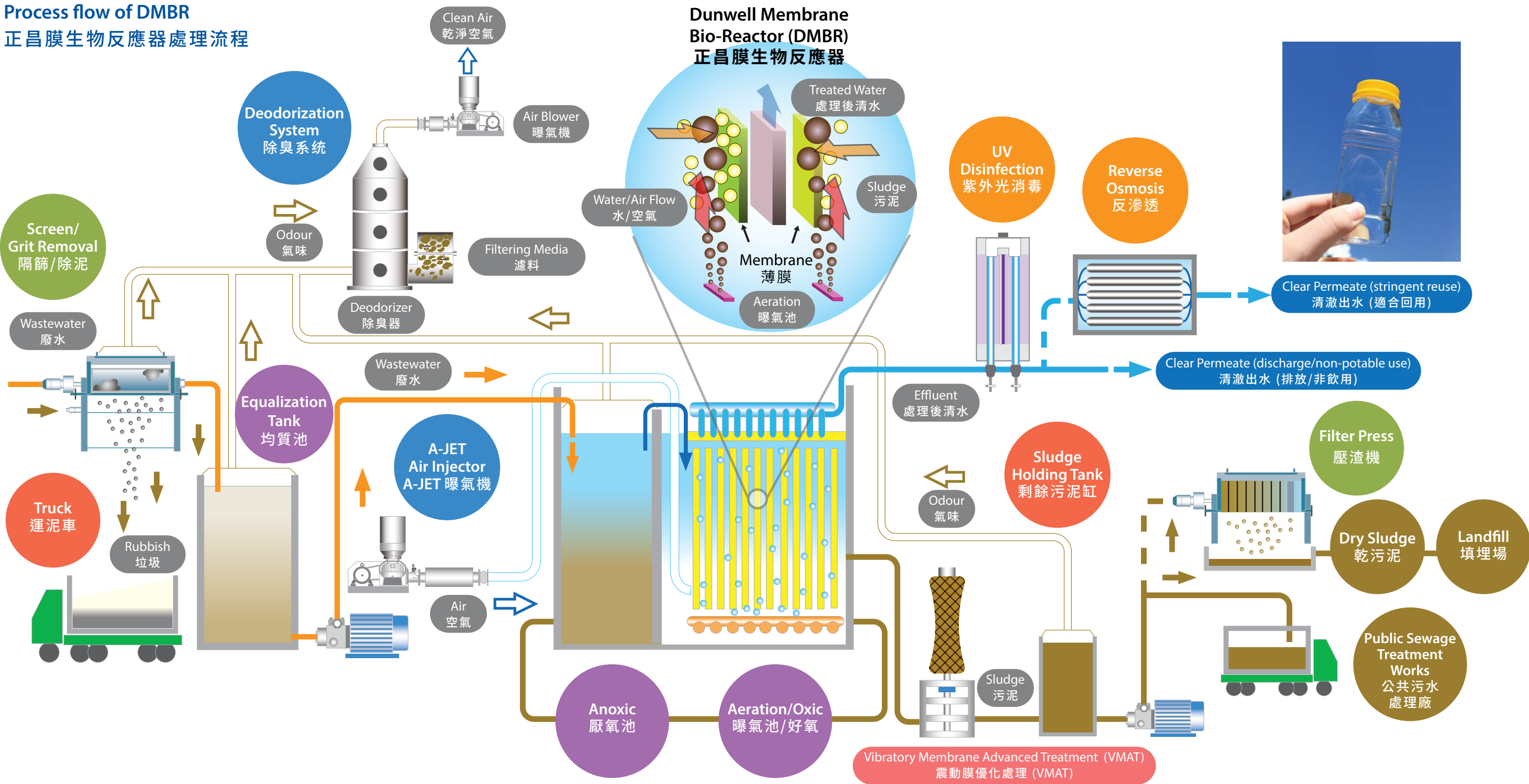


創意獎
INNOVATION AND
CREATIVITY AWARD

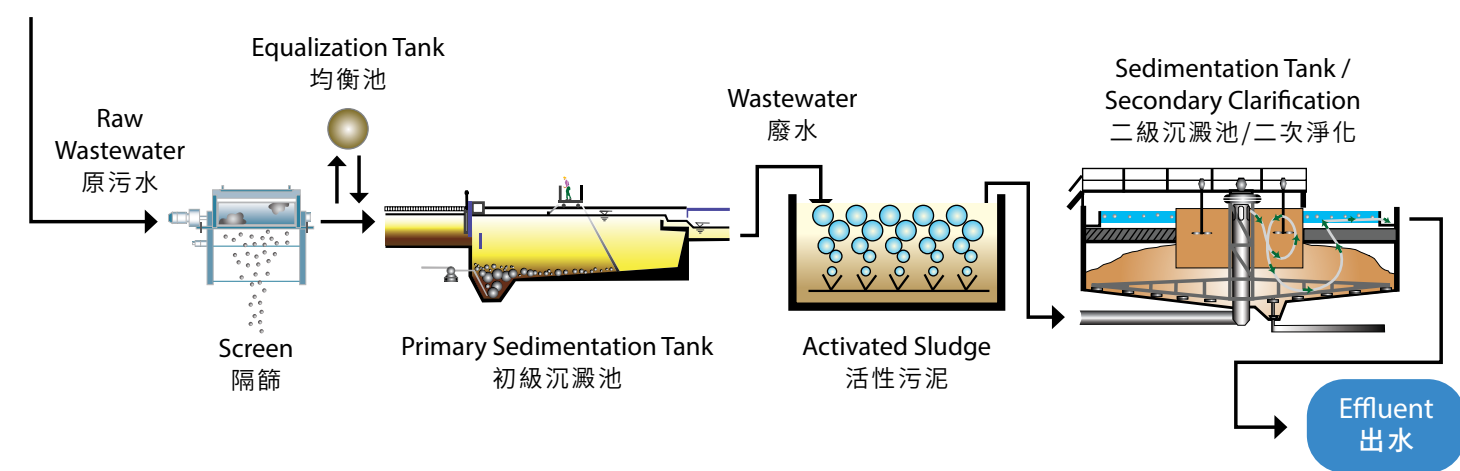
Advantages 優點

- On site reuse of treated effluent
處理後出水現場回用
 - Automated control by Programmable Logic Controller (PLC)
全自動編程邏輯控制
 - 24-hour remote monitoring system
24小時遠程監控系統
- Eliminates sewers
毋需排污管道
 - Easy to install in existing aeration tank, increasing plant capacity in same footprint
易於安裝於現有曝氣池，在相同的面積上提升污水處理量
- High concentration of Mixed Liquor Suspended Solid (MLSS) (10,000-20,000mg/L)
greatly improves efficiency
混合懸浮固體 (MLSS) (10,000-20,000毫克/升) 提升污水處理效率
 - Completely removes suspended solids from effluent
完全去除出水的懸浮固體
- Membranes have excellent durability and chemical resistance
膜組具高耐久性和耐化學性
 - Can easily add UV disinfection or reverse osmosis to further enhance effluent quality
可以加裝紫外光燈消毒或反滲透，以進一步提高出水水質
- Save 30% or more on space used by traditional sewage treatment process
對比傳統污水處理技術，能減少30%或以上的地面空間
 - Dunwell's VMAT technology helps further space saving by thickening sludge before filter press
正昌VMAT震動薄膜能在壓濾前提高污泥稠度，有助進一步節省空間

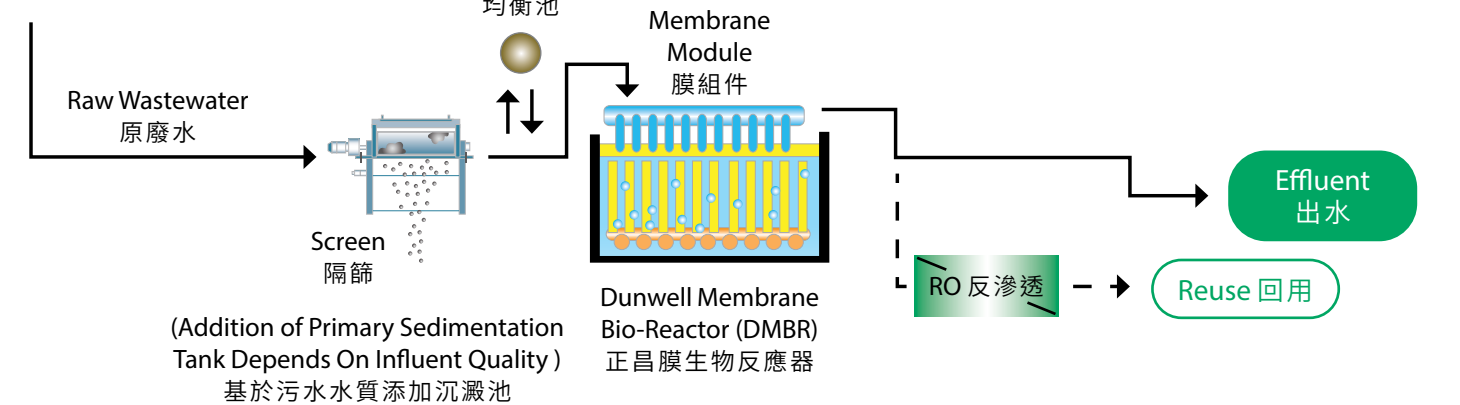
Process flow of DMBR
正昌膜生物反應器處理流程



Traditional Activated Sludge Process
傳統的活性污泥處理



DMBR
正昌膜生物反應器



DMBR effluent comparison against alternative standards DMBR
膜生物反應器 (DMBR) 出水與其他標準比較

Control Parameters 控制參數	HK Standard for discharge to Group A+ inland water 香港環保署 A級標準+	HK Standard for discharge to Group B++ inland water 香港環保署 B級標準++	HK Standard for discharge to Group C+++ inland water 香港環保署 C級標準+++	HK Standard for Recycled Water 香港水務署 循環再用水 標準	Discharge from DMBR DMBR 出水排放
Coliform bacteria (n/100mL) 大腸杆菌 (個/100毫升)	< 1	100	1,000	< 1	<1 (with UV or Chlorine 經過 紫外光/氯)
Total Suspended Solids (mg/L) 懸浮固體總數量 (毫克/升)	10	30	20	≤ 5	<1
BOD ₅ (mg/L) 5天生化需氧量 (毫克/升)	10	20	20	≤10	<5
COD (mg/L) 化學需氧量 (毫克/升)	50	80	80	N/A 不適用	<30
pH 酸鹼值	6 - 9	6 - 9	6 - 9	6 - 9	6 - 9
Chlorine (mg/L) 氯(毫克/升)	N/A 不適用	N/A 不適用	N/A 不適用	≥0.2	Depends on application 是否加氯取決於用途

+ Abstraction for potable water supply 集水區 ++ Irrigation 灌溉 +++ Pond fish culture 魚塘用途

Case Studies for various applications
各種應用案例研究

Wastewater Source 污水來源	Parameters (mg/L) 參數 (毫克/升)	Influent 入水	Max. Flow rate (m³/day) 最大流量 (立方米/天)	Effluent 出水	Removal rate(%) 去除率(%)
Food processing 食品加工	BOD ₅ 5天生化需氧量	1,590	250	<5	99.9
	COD _{Cr} 化學需氧量	2,600		<20	99.0
	SS 懸浮固體	380		<1	100
Greywater 灰水	BOD ₅ 5天生化需氧量	≤200	58	<5	95.0
	SS 懸浮固體	≤200		100	
Blackwater 生活污水	BOD ₅ 5天生化需氧量	210	4,170	<5	97.6
	SS 懸浮固體	240		<1	99.6
Landfill leachate 填埋場滲漏液	COD _{Cr} 化學需氧量	~10,000	300	99.4	100
	SS 懸浮固體	<500		<1	