

MBR Plant for - Hotel Greywater / Blackwater Recycling

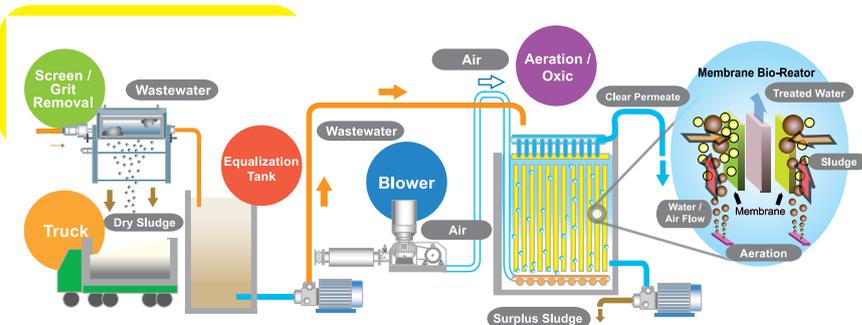
The Case

The latest 6 star-serviced hotel in Macau recently adopted Dunwell's MBR (DMBR) to recycle the greywater collected from their luxury rooms. The recycled greywater will be re-used as toilet flushing and irrigation purposes. Similar to the areas with limited fresh water supply, Macau's fresh water is expensive and scarce. With the adoption of DMBR, about 50% of fresh water cost can be saved.

The treatment plant consists of three parts: mechanical pre-treatment, the biological step and the filtration by submerged MBR membrane. After removal of the coarse particles from the wastewater by means of an automatically self-cleansing bar screen, the wastewater is fed into the aeration zone of the plant. The bacteria inside the aeration zone will digest the organic pollutants and become numerous bio-flocs (activated sludge) suspending inside the aeration zone. The biologically cleaned water will be separated from the activated sludge by the submerged membrane. With the pore size less than 0.14 micrometer on the membrane surface, no bacteria could pass through the membrane surface and enter the treated water stream.



The Process



Parameters	Influent	Effluent
Flow	200 m ³ /day	200 m ³ /day
pH	8 - 9	7 - 8
COD	500 - 1000 ppm	<80 ppm
BOD ₅	300 - 800 ppm	<20 ppm
Total Suspended Solids	500 - 1200 ppm	<1 ppm
Turbidity	150 NTU	<1 NTU

MBR Plant for - Largest Bakery Plant in Hong Kong

The Case



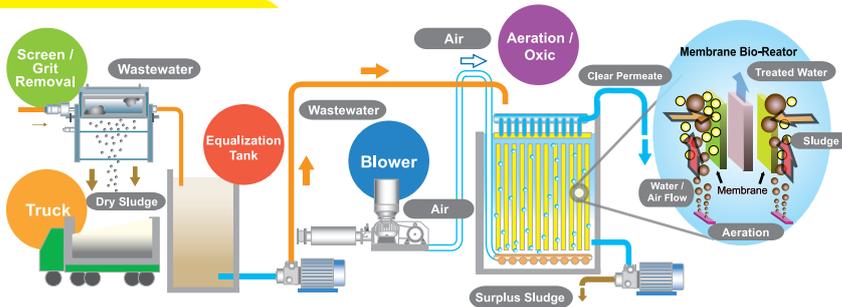
Existing Wastewater Treatment Plant

The largest bakery plant in Hong Kong recently adopted Dunwell Membrane Bio-reactor (DMBR) to treat the mixed wastewater generated from their production lines and sanitary facilities. Comparing to their existing wastewater treatment plant, DMBR helps the bakery plant to save HK\$240,000 per year.

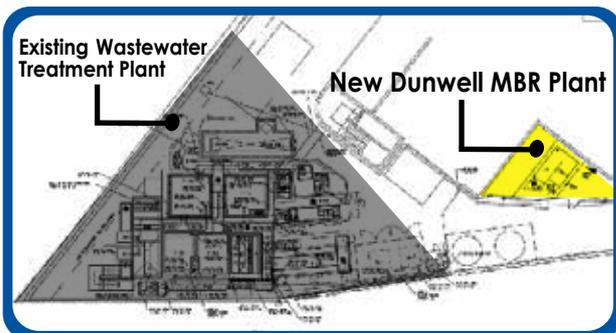
Besides the annual saving, the existing wastewater treatment plant could be totally removed from the existing location and the free space could be used as another function such as warehouse and production floor.

The treatment plant consists of three parts: mechanical pre-treatment, the biological step and the filtration by submerged MBR membrane. After removal of the coarse particles from the wastewater by means of two automatically self-cleansing bar screens, the wastewater is fed into the aeration zone of the plant. The bacteria inside the aeration zone will digest the organic pollutants and become numerous bio-flocs (activated sludge) suspending inside the aeration zone. The biologically cleaned water will be separated from the activated sludge by the submerged membrane. With the pore size less than 1.4 micrometer on the membrane surface, no bacteria could pass through the membrane surface and enter the treated water stream.

The Process



Location of Wastewater Treatment Plants at Hong Kong Largest Bakery Factory



Parameters	Influent	Effluent
Flow	125 m ³ /day	125 m ³ /day
pH	5.5 - 6.5	7 - 8
COD	3000 - 4500 ppm	<80 ppm
BOD ₅	2500 - 3500 ppm	<20 ppm
Total Suspended Solids	500 - 1200 ppm	<1 ppm