

Tai Po Water Treatment Works

Treatment Process in Tai Po Water Treatment Works

(Words in the diagram)

Raw water
Inlet Chamber
Ozone Contact Tank (Stream II)
Flocculation
Dissolved Air Flootation Tank
Sludge
Sludge Thickener
Sludge Press
Sludge Cake
Filtrate
Washwater Recovery Tank
Supernatant Balancing Tank
Ozone Contact Tank (Stream II)
Primary (Aerated) Biological Filter
Ozone Contact Tank (Stream II)
Secondary Rapid Gravity Filter
Backwash
Chlorine Contact Tank
Quality Drinking Water

Award

The incorporation of various green and sustainable features, such as renewable energy, water reuse, extensive greening, use of ozone as disinfectant, etc., making TPWTW won two important awards in the construction industry.

Hong Kong Green Building Council – Provisional Platinum rating under BEAM Plus New Buildings V1.2

Construction Industry Council Sustainable Construction Award 2018 – Gold Award

Tai Po Water Treatment Works

Tai Po Water Treatment Works (TPWTW) was commissioned with a capacity of 250,000 cubic metres per day in 2003. Currently, Stream II of TPWTW has been completed and the total capacity has reached 800,000 cubic metres per day. It provides quality drinking water to Tai Po, Central and West Kowloon and the Central and Western districts of the Hong Kong Island.

Special Features

TPWTW has adopted many innovative solutions which integrated various green and sustainable features into new as well as existing buildings for optimization of the plant operation. By adopting these best practices, TPWTW has been recognized as a green infrastructure.

1) Dissolved air floatation

A robust and efficient process employs a mixture of air and water to lift coagulated solids to the water surface for subsequent removal. The rapid start-up capability of the unit can react to sudden changes in raw water quality effectively.

2) Biological filtration

Ammonia and manganese are removed biologically under a controlled environment. The process significantly reduces the use of chlorine.

3) Rapid gravity filtration

The remaining turbidity in the water is removed. This is followed by final disinfection using chlorine.

4) Ozone

TPWTW (Stream II) is the second water treatment works in Hong Kong using ozone as disinfectant. The usage of ozone has the following advantages:

Advanced and Effective Disinfection Technology

Reduce Chlorine Consumption by around 30%

Improve Water Quality

5) Laboratory

TPWTW Laboratory is a HOKLAS accredited laboratory monitoring closely the quality of water at different treatment stages to ensure treated water quality fully complying with the Hong Kong Drinking Water Standards.

It has Biosensing Alert System, which is a patented system developed by WSD and won the silver and bronze prizes in Civil Service Outstanding Service Award under two award categories, for continuous monitoring of the incoming raw water quality entering water treatment works.

Tai Po Water Treatment Works

Layout Plan

Administration Building

Inlet Chamber

Pumping Station

Dissolved Air Floatation Building

Secondary Rapid Gravity Filter Building

Ozone Generation Building

Washwater Recovery Tank

Supernatant Balancing Tank

Sludge Press House

Primary (Aerated) Biological Filter Building

Chemical Building

On-site Chlorine Generation Plant

Water Supplies Department

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