VISIT T·PARK

T·PARK is an important step in Hong Kong's waste-to-energy journey. We welcome you to discover and learn more about Hong Kong's green drive through our educational and recreational facilities.

OPENING HOURS AND ADMISSION

10:00am to 7:00pm
(Closed on Tuesdays)
By Reservation Only

FREE ADMISSION

BOOKING AND ENQUIRY

For booking, please visit
www.tpark.hk
For enquiry, please call at
(852) 2910 9700
or fax to
(852) 2430 8011
or email to
info@tpark.hk

環境保護署
Environmental Protection Department

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OVERVIEW

T·PARK is more than a sludge treatment plant. As one of the most technically advanced facilities of its kind in the world, it is an iconic landmark that demonstrates the benefits of green architecture and sustainable use of resources in Hong Kong.

The Facility provides an opportunity to explore the unlimited possibilities available to adopt an eco-friendly and sustainable lifestyle. It also represents an important step in realising the goal of moving beyond our own needs for a better Hong Kong and for our future generations.

SUSTAINABLE FEATURES

VISION

Driving a positive change in people's attitudes towards waste management, recycling and upcycling is an important part of T·PARK's vision. With a wide range of educational, recreational and ecological facilities available to the public, T·PARK is designed to showcase the benefits of "waste-to-energy" management and resource recovery that aim to build a greener Hong Kong.

SUSTAINABLE FEATURES

A Showcase of Green Architecture and Sustainable Features

能源轉換社區 · Energy Transformation Community

T·PARK

ARCHITECTURAL DESIGN

The “wave-form” and streamlined architectural design of the buildings blend well with the surrounding environment by integrating the sea view in front and the ridge line of the hills at back, while the flue gas stack is neatly built within the Administration Building to create a harmonious appearance with the nature.

ECO MATERIALS

The Facility is designed and built with a “full life-cycle” perspective in mind. This means that manufacturing of building materials, construction process, delivery as well as the eventual dismantling of the Facility and waste disposal all comply with stringent environmental guidelines.

LANDSCAPE AND HABITAT

Seventy percent of T · PARK is covered by green features, including a 5-themed landscape garden, green roofs and a wetland habitat for wildlife. Approximately 1,200 trees and 350,000 shrubs are planted, the majority of which are native species to showcase Hong Kong’s homegrown beauty.

INNOVATION · SUSTAINABILITY

ENERGY-SAVING FEATURES

The building design enables the best use of daylight, with green roofs on major buildings acting as energy-saving natural insulation.

BUILDING/ LANDSCAPING MATERIALS

Low emissivity glass

Glass facade with high thermal efficiency that allows warmer and brighter interiors

Eco-blocks

Paving blocks with recycled constituents used in the vehicular driveway

Eco-friendly timber decking

Recycled plastic timber decking as a good alternative to natural timber

RECYCLING MATERIALS

Fender woods

Salvaged fenders from the former Wan Chai Ferry Pier and other waste wood from building demolition were reused for landscaping and furniture

Pulverised fuel ash (PFA)

All excavated PFA materials were reused on-site for landscaping and backfilling

Salvaged materials

Construction and demolition wastes from other local projects were utilised as fill materials

TOTAL WATER MANAGEMENT

Potable and process water are generated on-site through a seawater desalination plant while rainwater is collected for non-potable uses. To achieve “zero effluent discharge,” all wastewater from the facility is treated and reused for irrigation, flushing and cleansing. Leftover sludge from the wastewater treatment process is then mixed with the sewage sludge for incineration.

PROMOTING AN UPCYCLING CULTURE

What is generally recognised as waste is given a new life inside T · PARK. For example, the fenders from the former Wan Chai Ferry Pier, chairs previously used by students and waste oil cans have been refurbished to become new furniture at T · PARK, and defective drinking mugs trashed due to manufacturing imperfections are transformed into unique utensils.

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OVERVIEW

T·PARK is specifically designed to address the waste challenges in Hong Kong. Using a proven and reliable thermal technology known as "fluidised bed" incineration to treat sewage sludge, it significantly reduces waste volume for landfill disposal. Heat energy generated during the treatment process is converted into electricity to support the entire Facility's daily operations, and surplus power is exported to public power grid. T·PARK proudly demonstrates a sustainable "waste-to-energy" approach in Hong Kong.

BENEFITS OF FLUIDISED BED INCINERATION TECHNOLOGY

- **Minimal impact on the environment**
- **Significant sludge volume reduction by 90%**
- **Good recovery of heat energy for power generation**
- **Compact design requiring small space for the footprint of the facilities**
- **Low operation and maintenance costs**

MAINTAINING GOOD AIR QUALITY

A Continuous Emission Monitoring System (CEMS) feeds instantaneous air emission data collected from the stack to the Central Control Room at T·PARK for round-the-clock monitoring in order to ensure that the emitted flue gas is in full compliance with strict international standards. The data is displayed on the digital panel at the reception of T·PARK.

Air Quality Monitoring Station located in Tuen Mun

There is also an Air Quality Monitoring Station located in Tuen Mun town centre which checks for any local air quality change that may arise from the operation of the Facility. The public can access the real-time monitoring data through the Environmental Protection Department's website.

WASTE-TO-ENERGY IN ACTION

Sustainable Waste-to-Energy Approach

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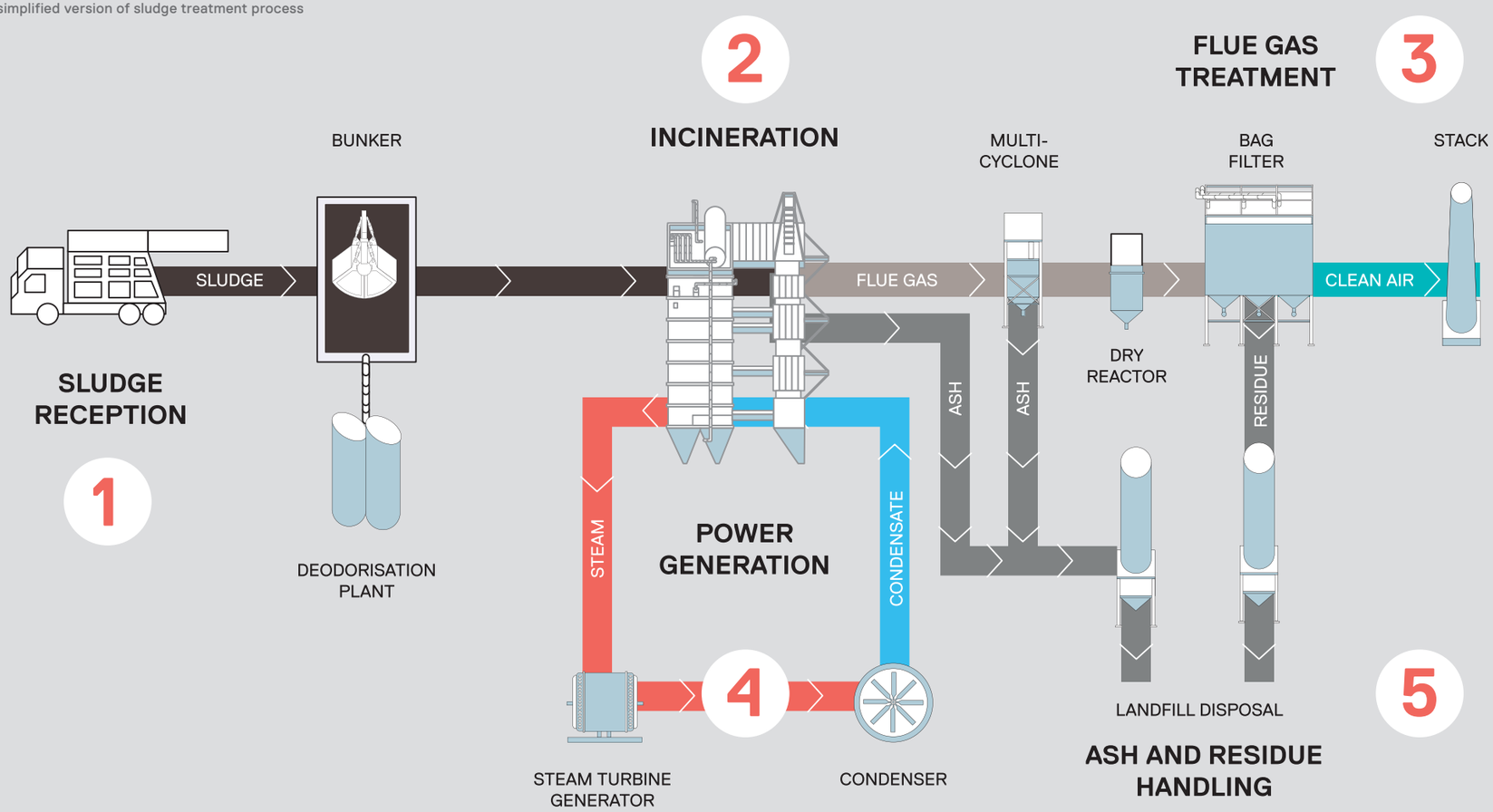
WASTE-TO-ENERGY PROCESS

*This is a simplified version of sludge treatment process

"Sludge" is the semi-solid by-product of sewage treatment. We produce close to 3 million cubic meters of sewage, which results in approximately 1,200 tonnes of sludge every day.

There are 11 major Sewage Treatment Works in Hong Kong. The Stonecutters Island Sewage Treatment Works produces almost 70% of the total sludge in the territory. In order to minimise nuisance caused by road transportation, the sludge is transported to the adjacent West New Territories Landfill jetty by sea before final delivery to T · PARK.



1 | Sludge Reception

ADVANCED DEODORISATION SYSTEM TO MINIMISE ENVIRONMENTAL IMPACTS

The sludge is delivered in sealed containers and unloaded to storage bunkers by trucks at the reception bays. The sludge reception bays and storage area are enclosed and equipped with an advanced ventilation system to prevent odour from escaping. The trapped foul air is treated using deodorisers. All trucks are washed and dried before leaving the Facility. An automated grabber places the sludge into dedicated hoppers followed by mixing prior to incineration.

2 | Incineration

PROVEN FLUIDISED BED INCINERATION TECHNOLOGY

An advanced "fluidised bed" incineration system has been adopted to efficiently treat the sludge through thermal combustion. The technology involves suspending the sludge in a hot bubbling bed of sand, through which jets of air are blown to mix the sludge with sand rapidly so as to achieve uniform and complete burning. The thermal gases in the incinerator reach a temperature above 850˚C for at least 2 seconds in order to control emissions of organic pollutants.

3 | Flue Gas Treatment

STRINGENT INTERNATIONAL EMISSION STANDARDS

The highly effective flue gas treatment system consists of three major components that remove different types of pollutants. It starts with the "multi-cyclone" where larger particles are extracted under a rapid spinning action. This is followed by the "dry reactor" where pollutants are neutralised and captured by chemical and physical processes. The "bag filter" finally removes fine particles through filtration. The cleaned flue gas is constantly monitored by the CEMS as it leaves the stack.

4 | Power Generation

GENERATION OF CLEAN ENERGY FROM WASTE

The incinerator, turbine and condenser work together to recover the heat generated by the incineration process for power generation. The incinerator acts like a boiler with a large number of water pipes surrounding its walls. Heat generated during incineration boils the water to produce steam. The steam then passes through a turbine to generate electricity which powers the various on-site operational needs. Surplus electricity is capable of supporting up to 4,000 households.

5 | Ash & Residue Handling

CUT WASTE VOLUME BY 90 PERCENT

Inert ash and residue collected after the incineration and flue gas treatment processes amount to approximately 10 percent of the original sludge volume. They are temporarily stored in silos and tested to ensure full compliance with the treatment standards before trucking to the adjacent West New Territories Landfill for disposal. T·PARK is a safe and clean facility that substantially reduces the loading on the landfills as well as the greenhouse gases emitted into the environment.

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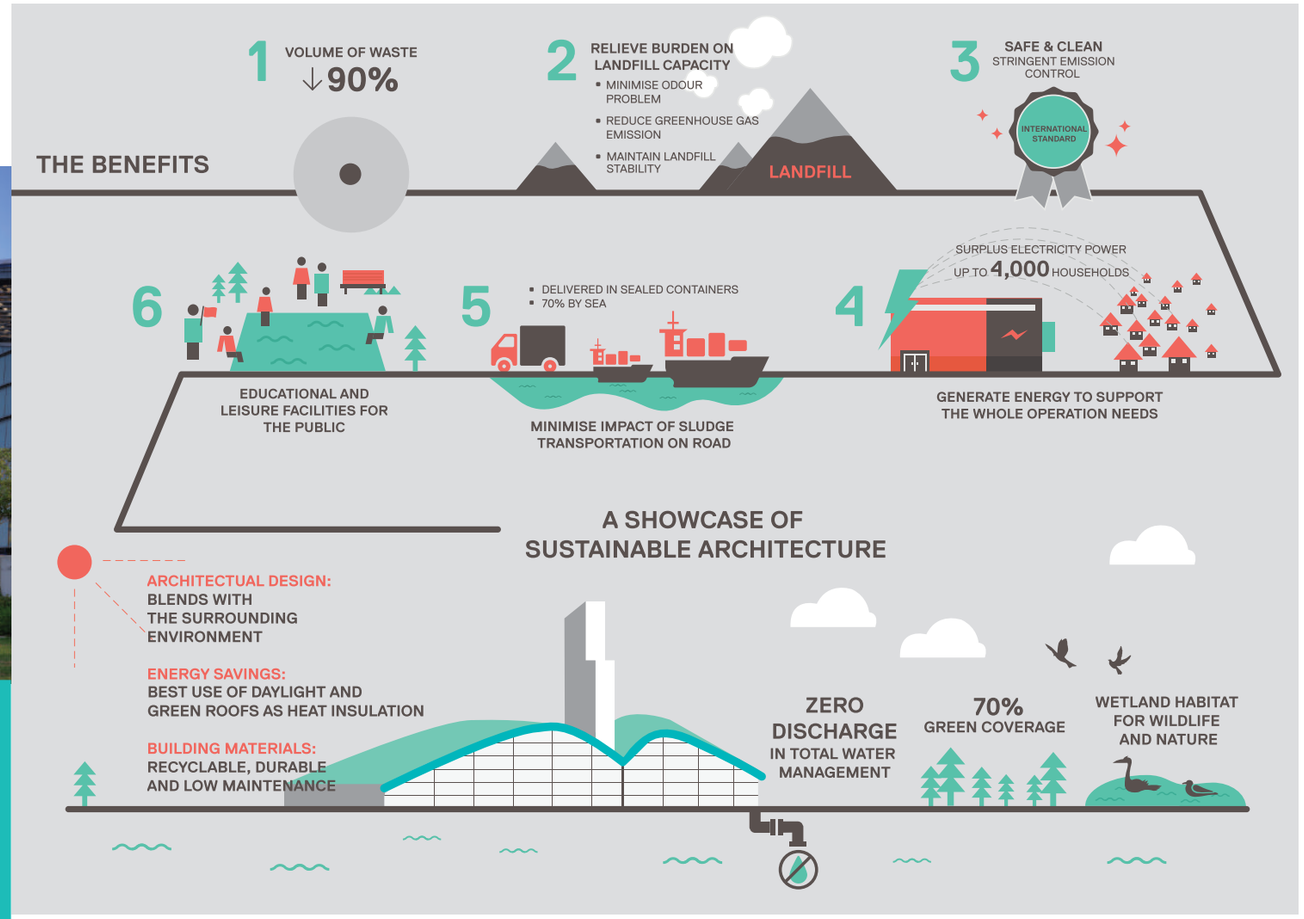
ABOUT T·PARK



T·PARK is a state-of-the-art sludge treatment facility, which is specifically designed to address one of the many waste challenges in Hong Kong. "T" stands for Transformation, representing the city's vision to embrace the concept of "waste-to-energy", and to drive positive change in the attitudes and behaviours of people towards waste management and resource recovery.

T·PARK is a unique self-sufficient facility which combines a variety of advanced technologies into a single complex: sludge incineration, power generation, desalination and wastewater treatment. It also offers various recreational, educational and ecological facilities which are designed to showcase the benefits of "waste-to-energy" management and environmental protection.

Please come and discover how T·PARK works and enjoy the benefits it brings to the community.

ABOUT T·PARK

Visitor's Guide

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T·PARK

T·PARK IS A SELF-SUSTAINED FACILITY

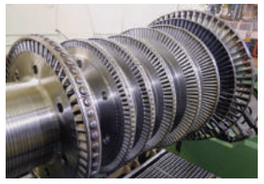
Combining a variety of advanced technologies into a single complex

1 | Sludge Incinerators

Four fluidised bed incineration trains are grouped into two for each plant in T · PARK. They have capability of treating up to 2,000 tonnes of sludge per day through high efficiency combustion process. The facility is in operation 24 hours a day all year round.

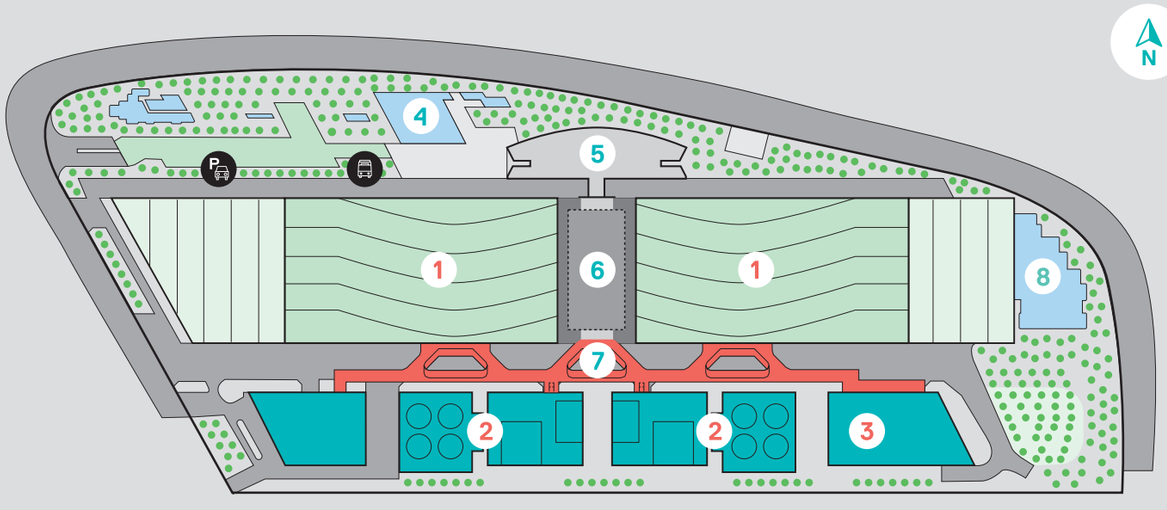
2 | Power Generation Units

Turbines and condensers work together to convert the heat energy recovered from the incineration process into electricity for the Facility's daily operation. Surplus electricity is exported to the public power grid.

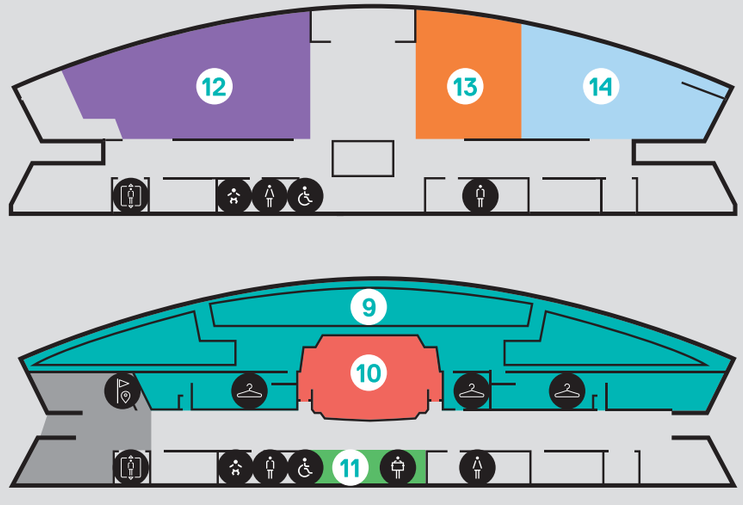


3 | Process Water and Wastewater Treatment Plants

Seawater from Deep Bay is treated by the desalination plant which can produce 600m^3 of portable & process water for the Facility per day. All wastewater is treated and reused on site to achieve "zero effluent discharge".



- Car Park
- Shuttle Bus Stop
- Reception
- Lift
- Guided Tour Gathering Point
- Changing Room
- Toilet
- Disabled Toilet
- Baby Care Room



EDUCATIONAL AND LEISURE FEATURES

Learning and rejuvenating experience for the public towards a greener lifestyle

4 | T·GARDEN An outdoor landscape comprising of 5 major elements – Fountain Garden, Leisure Garden, ZEN Garden, Wetland Garden and a heated footbath.

5 | T·ROOF An accessible roof garden acts as solar protection for the building and provides a great place to sit out.

6 | T·SKY A place to enjoy a panoramic view of Deep Bay and showcase eco-friendly furnishings.

7 | T·GALLERY An experiential tour of the "waste-to-energy" processes through real-size models and interactive displays.

8 | T·HABITAT A reinstated bird sanctuary surrounded by trees and shrubs, and a home for natural wildlife.

9 | T·SPA 3 spa pools supported by the heat energy recovered from sludge incineration. A perfect place to relax.

10 | T·THEATRE A 100-seat theatre hall showing an introductory video of T · PARK.

11 | T·CORNER A comfortable waiting and resting area showing the green building features and surrounding wildlife.

12 | T·HALL An exhibition area illustrating the sludge treatment processes through innovative and interactive presentations.

13 | T·CAFE A relaxing area serving light refreshments in an educational setting, with a view overlooking Deep Bay.

14 | T·SPACE A multi-purpose room for holding a variety of activities such as seminars, workshops and exhibitions.