



Photo: Environmental Protection Department, HKSAR Government  
香港特別行政區政府環境保護署

# O·PARK1

## Siu Ho Wan, Hong Kong

Client: Environmental Protection Department,  
Hong Kong

2016 - 2017

Equipping the first organic resources recovery center  
in Hong Kong.



The O·PARK1 facility, located in the north of the island of Lantau in Hong Kong.

Photo: Environmental Protection Department, HKSAR Government  
香港特別行政區政府環境保護署



### Initial situation

**Around 3,500 tonnes of food waste are generated daily in the metropolis of Hong Kong.**

So far, these leftovers have been disposed of together with other waste in landfills. This is an inefficient approach that consumes valuable space in landfills and wastes usable energy from organic resources. The O·PARK1 resources recovery center converts organic waste into biogas and fertilizers.

Food waste processed daily

**200 tonnes**

Daily production of compost

**18 tonnes**

Energy supply

**3'000 households**

Annual reduction of greenhouse gas emission

**42'000 tonnes**

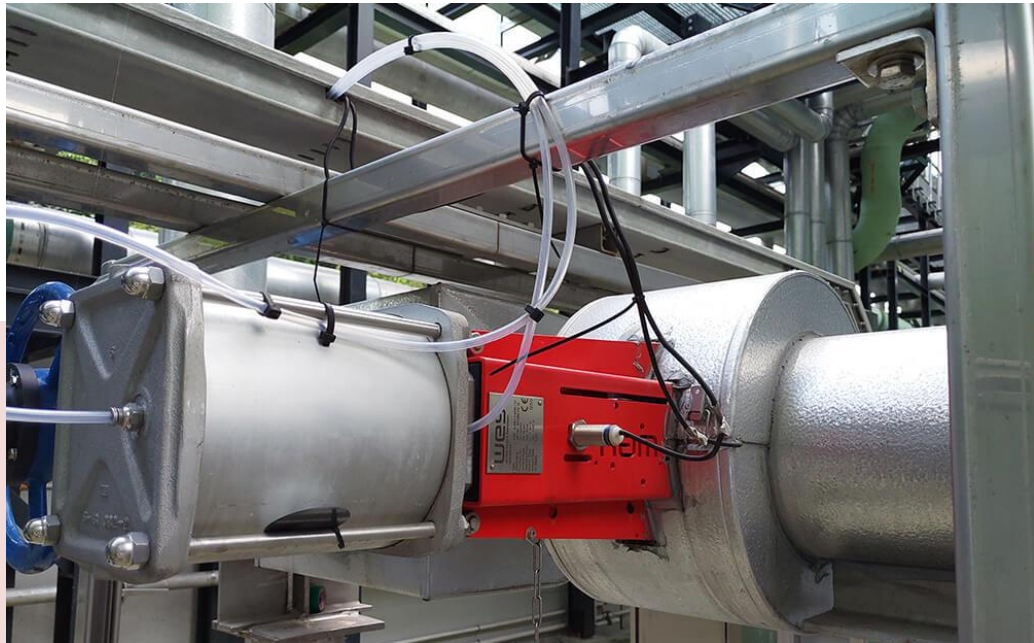
### Special challenges

The fermentation residues, sludge and solid waste processed in the plant are aggressive and highly corrosive. The medium often contains solids. In addition, a constant temperature of about 35°C is required for anaerobic fermentation. Therefore, the valves must be particularly corrosion-resistant and thermally sealing.

**Challenge**



A Wey VNC DN 150 knife gate valve with thermal insulation in the biogas plant



## Approach

**Valves from different manufacturers were evaluated for the O·PARK1 project. Most important criterion was the reliability of the valves in later operation.**

Future maintenance costs and downtime of the system should be kept as low as possible. Due to the high quality standards and positive experience from previous projects, the decision was made to use Wey knife gate valves. The overall design of the system has been optimized several times during the course of the project. This also resulted in the requirements for the isolation valves being changed. The body and sealing material are designed to withstand the corrosivity of the biowaste. The entire system should be centrally controllable, which is why all valves have been equipped with limit switches. In order to be able to keep the temperature of the liquid and gaseous media constant at 35°C, the valves were provided with additional thermal insulation elements.

Local planning was carried out by Tenson Engineering Ltd., Wey's official sales partner in Hong Kong.

For the selection and construction of the required valves, the technical support and engineering team of Sistag worked together.

The manufacturing of the knife gate valves was carried out at the Sistag plant in Switzerland.



Sistag employee during the assembly of the  
VN knife gate valves



Category

## Knife gate valves

Product series

**VN, MF**

Nominal sizes

**100 - 400**

Actuator

**Pneumatic**

Number of valves

**41**

Body material

**Cast iron,  
ductile iron**

Maximum pressure

**10 bar**

Sealing type

**FPM**

Special features

**Limit switches**

for remote open/close

**Locking bolt**

secured with padlock for risk-free  
maintenance and cleaning

«After several years of operation, there has not been a single problem with the Wey valves.»

**Chris Leung**

Senior Manager, Tenson Engineering Ltd.  
Wey sales partner in Hong Kong

**Commissioning**

**2018**

**Expected service life**

**10 - 15 years**

**Next steps**

O·PARK1 was only the first step in a large-scale project to reduce food waste and CO<sub>2</sub> in Hong Kong. A second plant, O·PARK2, is to follow in 2024; further plants are planned.

The installed Wey knife gate valves have been in use since 2018 and function reliably. The customer and operator are very satisfied and the O·PARK1 project is a complete success. The biowaste treatment plant is an important step towards Hong Kong's goal of carbon neutrality by 2050.



Wey MFC DN 300 knife gate valves in the outside area of the system.

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discuss your  
individual  
application.**  
**We show  
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work.**

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