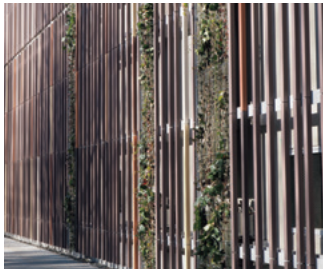


Fitting in with the town, and connected to the town

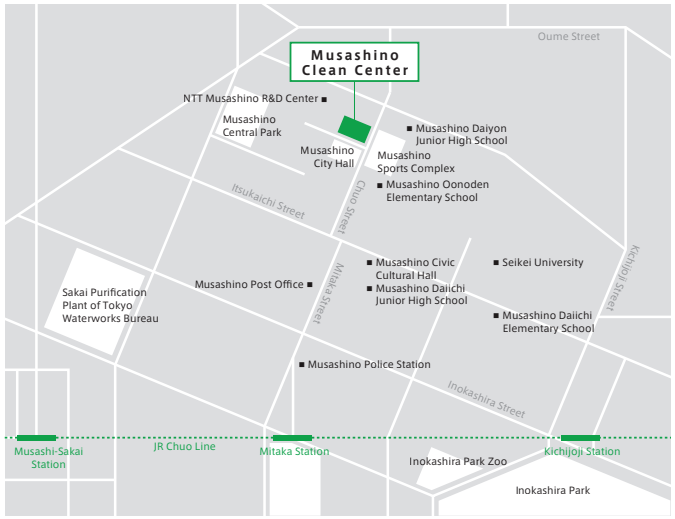
MUSASHINO CLEAN CENTER

Musashino Clean Center has been disposing of combustible, non-combustible, bulky, and harmful wastes as a waste disposal facility mounted with incinerators and non-combustible and bulky waste disposing equipment, while gaining the understanding of neighbors and enlisting cooperation from them, since 1984. The operation of the current facility was started in 2017.




Outline of the facility

Outline of the building	Site area	About 17,000㎡
	Gross floor area	About 8,900㎡
	Building height	About 15 m (17.79 m at a maximum)
	No. of floors	3 floors above ground and 2 basements
	Structure	(Underground) steel-reinforced concrete, (above ground) steel
Chimney	Height	59 m (reuse of the existing chimney with the inner cylinder renewed)
Plant	Incinerator	Stoker furnace for continuously incinerating wastes Disposal rate: 120 tons/24 hours (60 tons/24 hours × 2 furnaces)
Power generation equipment		Steam turbine generator (maximum output: 2,650 kW) Gas co-generation equipment (maximum output: 1,500 kW)
Non-combustible and bulky waste disposal equipment		Crushing and sorting type/disposal rate: 10 tons/5 hours
Plant designed and constructed by		Ebara Environmental Plant Co., Ltd.
Construction design		Kajima Design
Constructed by		Ebara Environmental Plant Co., Ltd. and Kajima Corporation
Construction supervised by		Musashino City and Nikken Sekkei Ltd.
Design overseen by		Musashino City, Nikken Sekkei Ltd., and Toshihiro Mizutani Architects
Plant technology supported by		Japan Waste Management Association
Construction commenced on		May 2014
Construction completed on		March 2017
Operated by		Musashino E Service Co., Ltd. (special-purpose company) From April 2017 (20 years)
		http://mues-ebara.com/



MUSASHINO CLEAN CENTER

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Musashino City
武蔵野市

Concept of Musashino Clean Center

Musashino Clean Center has the following 4 concepts, with the aim of becoming "a facility that can be boasted by the citizens of Musashino City" as a waste disposal facility open to local communities.

Development of a safe, reliable, environmentally-friendly facility

— We voluntarily specified the strictest limit of emissions in Japan, and operate the facility mounted with the cutting-edge incinerator and a dry sodium bicarbonate exhaust gas disposal system while keeping emissions below the limit.
— We achieved a power generation efficiency of about 20% by installing a highly efficient waste power generation system harnessing the heat generated through combustion, and supply energy to surrounding public institutions, including the city hall.

Development of a disaster-resistant facility

— The aseismic level of the entire building including the chimney is 1.25 times higher than the statutory level.
— With the gas co-generation equipment, we receive gas through a quake-resistant medium-pressure gas pipe and supply energy to the city hall, etc., reactivate the incinerator, and dispose of waste even at the time of disaster.

Development of a facility conscious of landscapes and architectural design

— As a waste disposal facility located in an urban area lying adjacent to the city hall, we cared for streetscapes and landscapes.
— Its architectural design composed of a compact, stylish building, which will not cause an oppressive feeling, a terra-cotta louver (a grid-type exterior terra-cotta part), which renders a thicket, and an outer wall covered with greenery would fit in with the surrounding streetscape.

Development of an open facility

— The route for visitors is available during service hours. The layout was designed so that the route for visitors would make a circuit of the second floor, and visitors could view plant equipment as it is through broad glass windows.
— We hold events, workshops, etc. for disseminating the information on waste and the environment.
— On the rooftop, we placed solar panels, and produced a vegetable garden using garbage compost and a meadow using wastes, such as plastic bottle caps, and buried seeds, where it is possible to learn wastes and the environment.

5 Steam turbine generator

This equipment generates electric power from high-temperature, high-pressure steam produced through waste combustion. Inside the turbine, there is a 6-blade impeller, which rotates about 8,000 times per minute and generates up to 2,650 kW of electric power (for about 6,000 general households) per hour by harnessing steam power.

4 Incinerator room

The incinerator room houses an incinerator, a boiler, an economizer, and filter-type dust collection equipment, for combusting waste, generating high-temperature, high-pressure steam, and treating exhaust gas. The incinerator is equipment for combusting waste while moving it slowly on a stepped fire grate spending 2 to 3 hours, and producing ash.

3 Gas co-generation

This equipment produces high-temperature gas by compressing and burning city gas, supplying it to a gas turbine to rotate it and generate electric power, and producing steam from waste heat. This will be used as auxiliary power generation at normal times, and as starting power generation at the time of disaster.

2 Platform and combustible waste pit

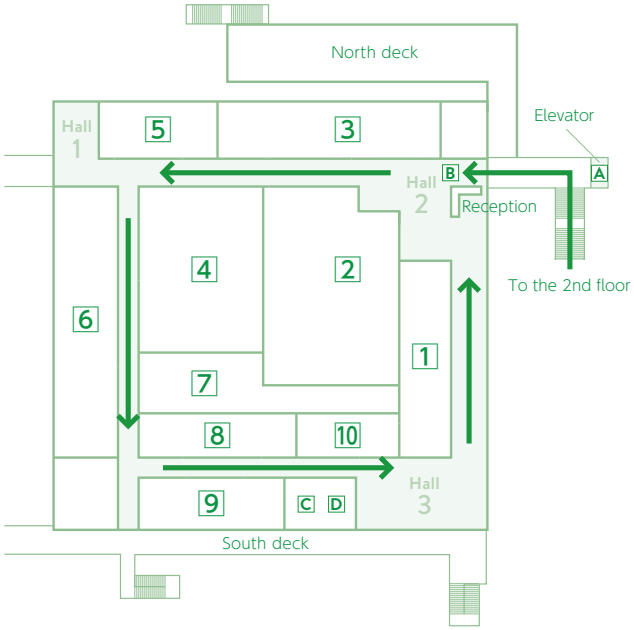
The platform conveys the waste collected by garbage trucks to the pit. The maximum amount of waste that can be stored by the combustible waste pit takes about 6 days to be incinerated. Waste is scrambled with a waste crane so that it will be combusted homogeneously, and then put into an incinerator.

6 Steam condenser

This equipment cools the low-pressure steam used for power generation with a large propeller with a diameter of about 4.5 m that rotates about 200 times per minute, to convert it into water, and feeds it to a boiler. There is a cycle converting water into steam and then converting steam into water.

7 Ash sorting facility

This facility removes metal from the ash produced through waste combustion by using a magnetic sorter, an ash crusher, and a particle size sorter, to satisfy the criteria for converting it into eco-cement.



1 Central control room

The operation of equipment inside the Clean Center is monitored and controlled 24 hours a day. When you touch the button on the glass in front of the central control room, you can check the waste combustion amount, the temperature of the incinerator, the exhaust gas limit, and power generation output.

8 Ash pit and ash crane operation room

After metal is removed with the ash sorting facility, ash is immersed in water and extruded by the ash extruder, and accumulates here. The ash is loaded onto a vehicle with a crane, and transported to the facility for producing eco-cement at the final disposal site in Futatsuzuka, Hinodemachi.

9 Non-combustible and bulky waste sorter

This equipment pulverizes non-combustible and bulky wastes with a crusher, and then collects recyclable materials, such as iron and aluminum, with a magnetic sorter. Remaining wood offcuts, waste plastic, etc. are conveyed to the combustible waste pit.

10 Non-combustible and bulky waste pit

Here, non-combustible and bulky wastes are accumulated. From here, wastes are placed by a crane on a conveyor and conveyed to a crusher.

Visitors Route guide

Universal design

We care for universal design, so that visitors can tour our facility without worry.

A Elevator
B Tools for communicating by means of writing and Braille pamphlets (from July)
C Restrooms for everyone (wheelchairs and baby chairs)
D Lactation room (baby seats)

* Displayed items are described in Japanese and English.
* Flashlights for evacuation, audio guide lights