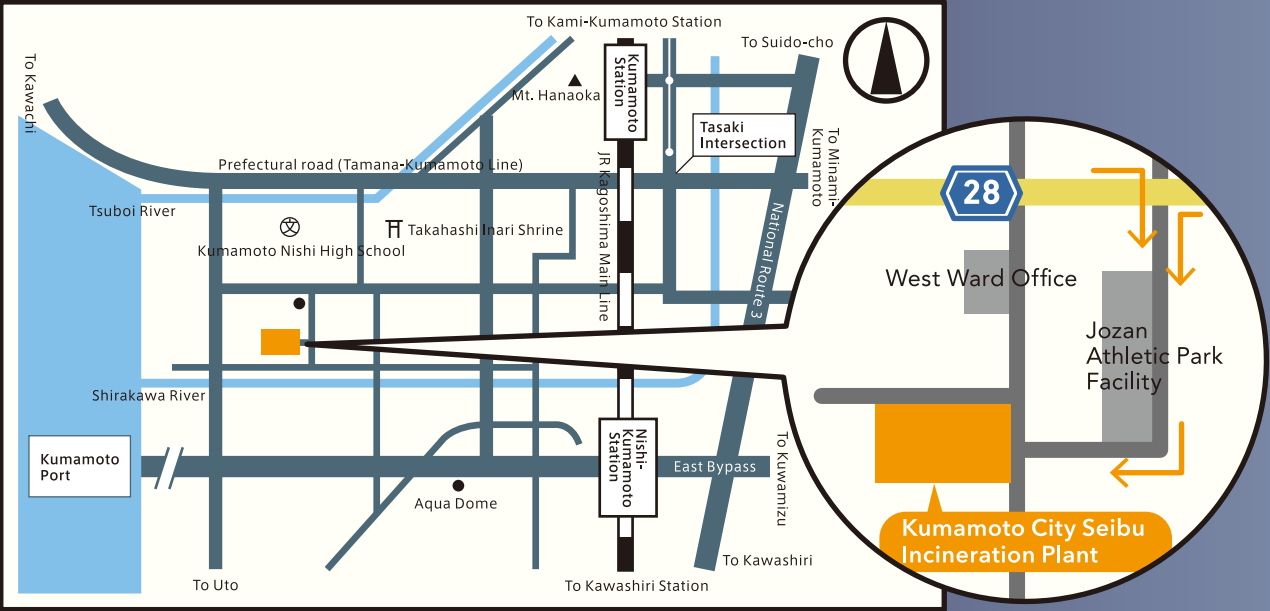


Map of Surrounding Area



Kumamoto City
Seibu
Incineration Plant

Facility Outline

Facility name	Kumamoto City Seibu Incineration Plant	
Location	2-12-1 Jozanyakushi, Nishi-ku, Kumamoto City, Kumamoto Prefecture	
Facility type	Fully continuous combustion stoker type incinerator	
Incineration capacity	280 t/day (140 t/day x 2 incinerators)	
Site area	Around 70,158m ²	
Start of use	March 2016	
Facility building	Number of stories : 5 above ground and 1 below	Structure : Steel-reinforced concrete and steel frame
Administrative building	Number of stories : 2 above ground	Structure : Steel-reinforced concrete and steel frame
Stack	Steel internal cylinders Two set	Height : 59 m

Facility Overview

Receiving and feeding equipment	Waste truck scales : 3 units
	Waste cranes : 2 units
Combustion equipment	Combustible bulky waste crusher : 50 t/5 h x 1 unit
	Incinerator : 140 t/day x 2 incinerators
Combustion gas cooling equipment	Boiler : 4.0 MPa×400° C
Exhaust gas treatment equipment	Dust collector : Filter-type dust collector
	Denitrification equipment : Non-catalytic denitration method
Generator equipment	Steam turbine generator : 5,980kW
Control value of exhaust gas	D i o x i n s Less than 0.05 ng-TEQ/m ³ N
	Sulfur oxide Less than 49 ppm
	D u s t Less than 0.01 g/m ³ N
	Hydrogen chloride Less than 49 ppm
	Nitrogen oxides Less than 50 ppm
	M e r c u r y 0.05 mg/m ³ N * (*The main monitoring reference value)

Kumamoto City Seibu Incineration Plant

2-12-1 Jozanyakushi, Nishi-ku, Kumamoto City,
Kumamoto Prefecture, 860-0065, Japan
TEL:096-329-0900/FAX:096-329-6613



Aiming to Realize a Sustainable Resource-Recycling Society



Kazufumi Onishi
Mayor of Kumamoto City

Greetings

Our city is a very comfortable city, with a long history and culture steeped in tradition, combined with a wealth of nature and highly convenient urban functions, all coexisting in harmony.

To make sure all citizens are able to continue enjoying the benefits of this environment into the future, and to respond to worsening global environmental problems, the city is implementing a variety of initiatives, such as protecting the groundwater, promoting the planting of vegetation, reducing waste and promoting its recycling and appropriate treatment.

Meanwhile, Seibu Incineration Plant was opened in March 2016 with the aim of propping up a recycling society to further mitigate the burden on the environment. The biggest feature of this plant is its ability to make optimal use of the incineration heat to generate electricity through state-of-the-art incineration technology, and thereby massively reduce CO₂ emissions. In other words, it is an environmentally friendly power plant fueled by waste that plays a vital role in realizing our goal of becoming a low-carbon city.

The plant also functions as a facility where people can experience advanced environmental, and energy technologies, and learn extensively about the environment. By utilizing this facility, we hope to turn it into a popular place of environmental education and enlightenment among citizens.

With the understanding and cooperation of citizens, we will further promote the thorough sorting of waste and new initiatives in recycling. We will also strive to ensure the appropriate treatment of waste to realize a sustainable, recycling society, with the aim of creating “Kumamoto, a city offering quality of life,” and a city of everyone’s dreams.

March 2016

● Making Optimal Use of Energy and Water Resources

An environmentally friendly facility that uses state-of-the-art incineration technology enabling the optimal use of incineration heat to generate electricity. The facility also strives to conserve water by implementing a water recycling system.

● Contributing to the Realization of a Low-Carbon Society

Optimizing the generation of electricity massively reduces emissions of the greenhouse gas, CO₂, and emissions of the gas are also cut by supplying heat to greenhouses and other facilities near the plant.

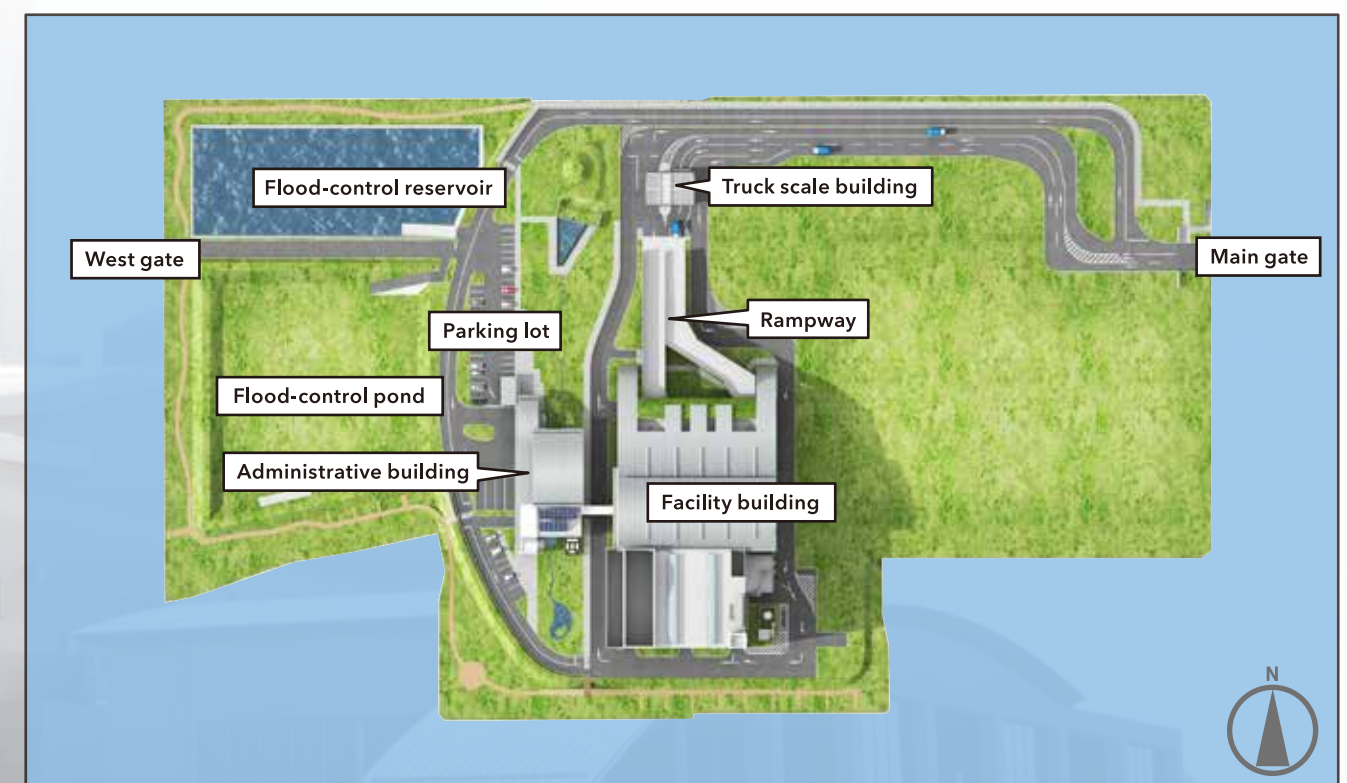
● Learning through Workshops at the Environment Museum to Inspire Action

The facility building has been likened to a big theater, and the administrative building a small theater, where the visitors can enjoy numerous, memorable “zones.” A passageway offers a realistic look inside the incinerator, and there is a 3D theater offering education on the environment, as well as comprehensive workshops on environmental, and energy technologies.

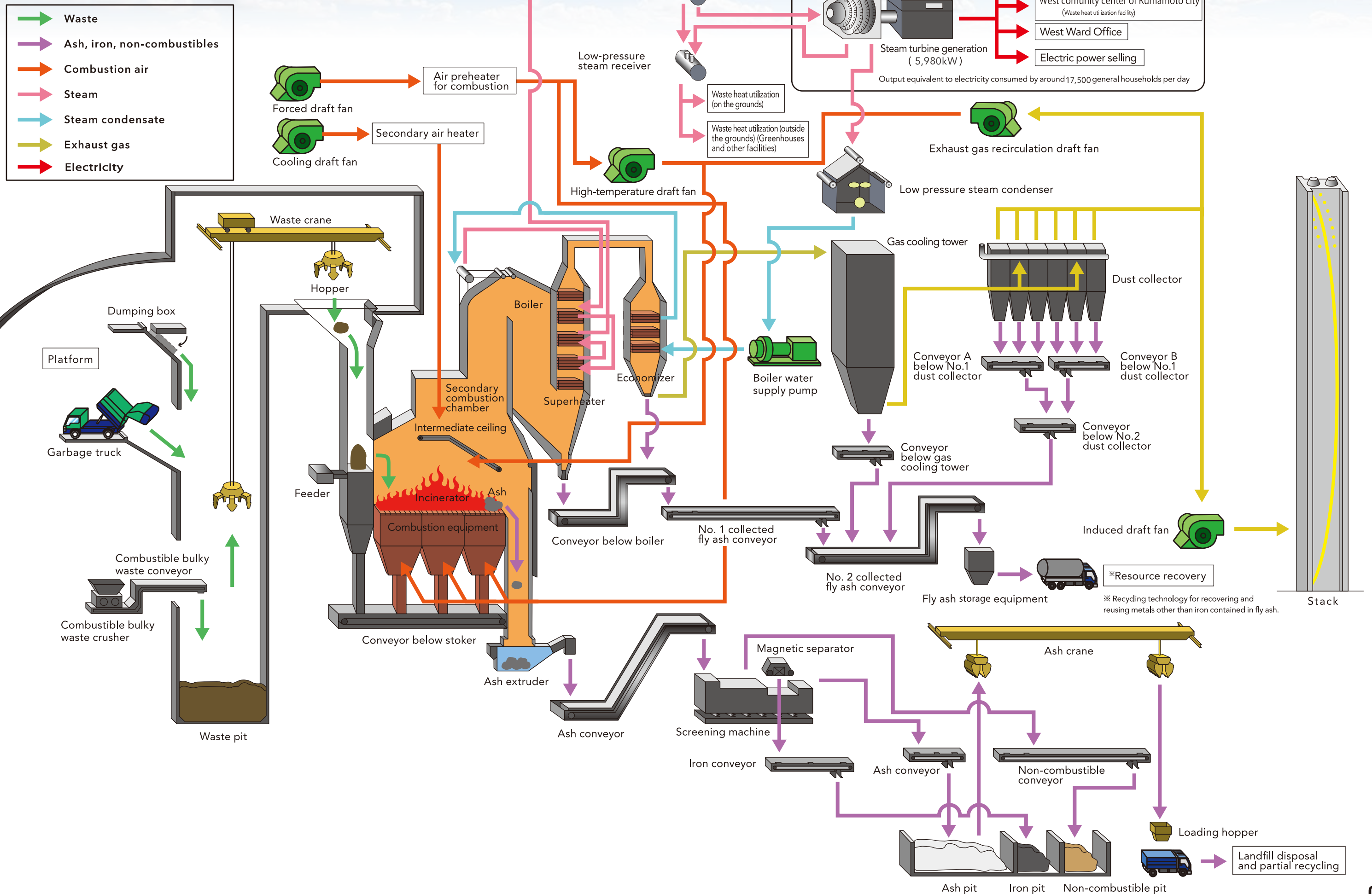
● Realizing Security, Safety and Stability

The facility equipped security and safety in operation, and stability in the appropriate treatment of waste through proper operation and maintenance, as well as the measures against the disasters.

The Entire Facility Layout



Flow of Refuse Processing



Equipment Description

Receiving and Feeding Equipment



Truck Scale Building

The waste brought to the facility is weighed here and the data is entered into computer.



Platform

The waste is dumped from garbage truck into the waste pit. Garbage truck are controlled by a computer for operational safety and efficiency of work.

Combustion Equipment



Inside the Incinerator

The waste moves slowly along the stoker as it burns. It is burned at high temperature of over 850°C to suppress the generation of dioxins.

Incinerator

State of Combustion

Combustion Gas Cooling Equipment



Boiler

Heat generated by the burning of waste is absorbed by the boiler to cool it, and make high-temperature, high-pressure steam.

Waste Heat Utilization Facility



Steam Turbine Generator

The steam generated by the boiler is used to turn the turbine, generating a maximum electricity of 5,980 kW. Excess electricity is sold to the electric company for use in general households.



West community center of Kumamoto city

Waste heat energy is effectively used by circulating hot water and transmitting electricity to hot bath facilities and floor heating.



Greenhouses

Hot water from the facility is used to heat greenhouses near the facility for the cultivation of flowers and vegetables.

Exhaust Gas Treatment Equipment



Gas Cooling Tower

Exhaust gas is sprayed with recycled water to rapidly lower its temperature. This suppresses the generation of dioxins.



Dust Collector

The dust collector sets up 504 filters like the filter of the vacuum cleaner inside and removes fine particles of ash.

Ash Removal Equipment



Ash Crane and Ash Pit

Ash, left over after burning waste, is extinguished and transported to the ash pit. A part of it is recycled as raw material.

Monitoring and Control Equipment



Central Control Room

The operating status of all equipment inside the facility is monitored and controlled from the Central Control Room. Each equipment is operated automatically by the computer system.



Waste Crane Operating Room

The crane is operated remotely from the waste crane operating room. It is normally operated automatically.

Environmental Museum



Incinerator Simulation Road

Realistic images and sounds allow visitors to experience what it is like inside the incinerator. (3rd floor facility building tour route)



3D Theater

3D movies offer an immersive experience, while learning about how waste is incinerated at the facility. (2nd floor administrative building conference hall)



Power Generating Floor System

Stepping on the panels on the floor will allow you to experience generate electricity. (2nd floor facility building tour route)