



# Kanazawa Seibu Environmental Energy Center



1 Kenroku-en



2 Kanazawa Castle Park



3 Kanazawa Station



4 Higashi Chayagai



5 21st Century Museum of Contemporary Art, Kanazawa



6 D.T. Suzuki Museum



## Environmental City Declaration

Our town Kanazawa benefits from a culture nurtured in rich natural surroundings on streets alive with history, all embellished with several rivers and lush greenery decorating the terraces. We aim to become an environmental city that conveys the beauty and atmosphere of Japan.

For this reason, we, the citizens of Kanazawa, declare that we shall continue to hand down to subsequent generations peaceful and healthier urban surroundings by protecting the global environment that nurtures all life. We shall do so by working to minimize the threat of global warming along with the following commitments:

- To hand down a climate in which humans live in harmony with nature.
- To provide training in caring for the environment with a gentle spirit
- To engage in business and community activities with a commitment to recycling resources

(Confirmed by a vote of the Kanazawa City Council on March 26, 1998)

## Kanazawa Seibu Environmental Energy Center

Facility Administration Section, Environmental Affairs Department City of Kanazawa

3-1 Toriki-machi, Kanazawa 921-8016

Tel: 076-291-6641 Fax: 076-291-9417

e-mail: seibukanene@city.kanazawa.lg.jp

Website: [www4.city.kanazawa.lg.jp/25021/kankyoushi/index.html](http://www4.city.kanazawa.lg.jp/25021/kankyoushi/index.html)



# Protecting the views of Kanazawa that reveal the beautiful changes of all four seasons

Committed to forever protecting the beautiful city of Kanazawa, with its vibrant natural surroundings and traditional culture.

We are proud of Kenrokuen Park, where one can enjoy the changing of the seasons, the pure water that flows in the Saigawa and Asanogawa Rivers, the lush green mountains, and the traditional culture of the town. In order to protect this important city, we established the Kanazawa Seibu Environmental Energy Center, which enables all to enjoy our environment with greater peace of mind.

This facility has implemented comprehensive pollution controls that remove even greater amounts of hazardous dioxins and other gases. Moreover, by utilizing the heat generated through waste incineration for highly efficient power generation, this facility has contributed to the emergence of a society committed to recycling.

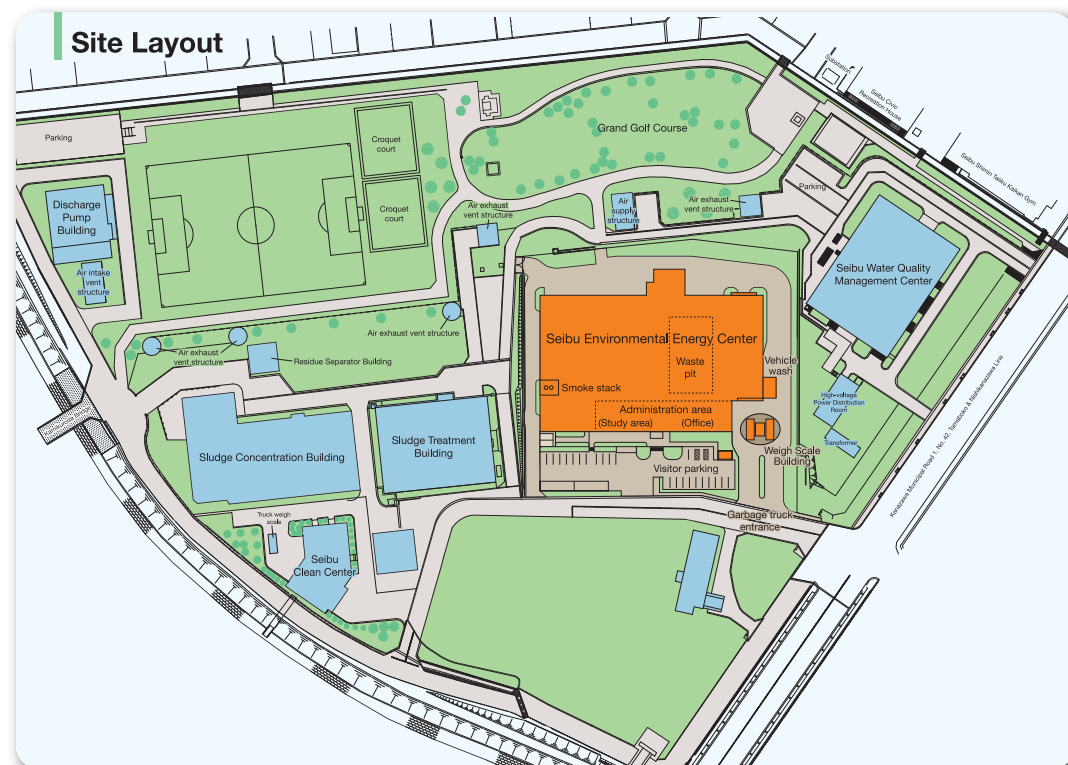
## Facility Overview

Name	Kanazawa Seibu Environmental Energy Center
Address	3-1 Torikimachi, Kanazawa
Site area	10,000 square meters
Floor area	14779.10 square meters
Facility capacity	340 tonnes per day (170 tonnes per day per incinerator x 2)
Start of construction	March 2009
Completion date	March 2012
Designed and executed by	Takuma Co., Ltd.

## Main Equipment

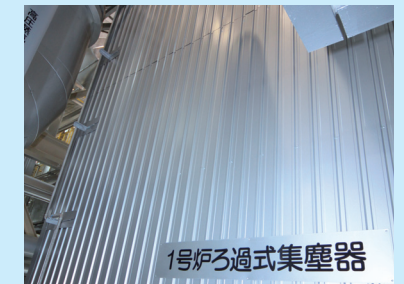
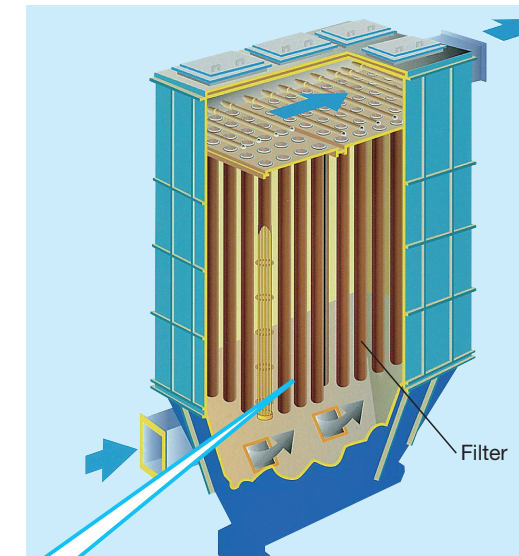
Receiving & feed equipment	Pit & crane method
Combustion equipment	Automatic incineration type (stoker)
Combustion gas cooling equipment	Boiler & quenching chamber
Combustion gas treatment equipment	Bag filters, DeNOx reactor (Dry process toxic gas removal equipment)
Wastewater removal equipment	Wastewater: After processing, the water is reused in plant facilities or discharged into the public sewer system. Waste leachate: This is sprayed into the interior of the incinerator (high-temperature oxidation process).
Waste heat utilization equipment	Steam turbine generator, internal hot water supply, heat source for sludge drying External supply of high temperature water (to Seibu Shimin Taiiku Kaikan Gym and Seibu Civic Recreation House)
Ash feed facility	Pit & crane

## Site Layout



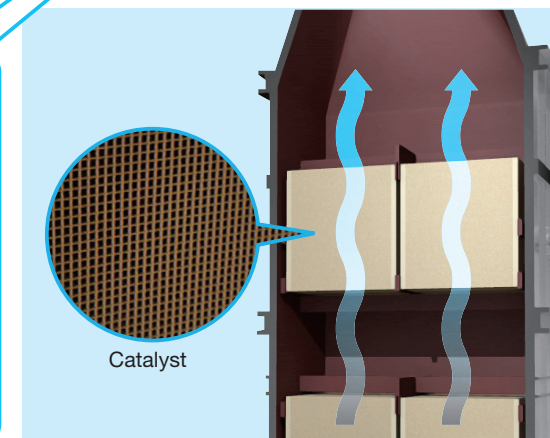
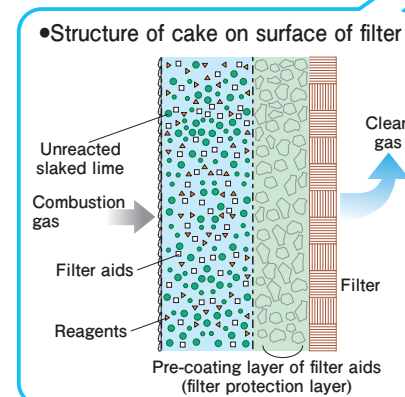
# nology and outstanding equipment

## Combustion Gas Treatment Equipment



### ● Bag Filters

The bag filters remove soot and dust (fly ash) present in the combustion gas. Slaked lime and activated carbon are injected into the combustion gas at the filter entrance to also remove dioxins and hazardous gasses (HCL, SOx).



### ● DeNOx Reactor

Ammonia gas is injected into the combustion gasses as a catalyst for the reductive decomposition and removal of nitrogen oxides.

## Waste Heat Utilization



### ● Boiler

The boiler recovers the heat generated by waste incineration and generates 400°C steam at a pressure of 4 MPa.



### ● Steam Turbine Generator

This turbine, powered by the steam generated in the boiler, can generate up to 7,000 kW of power.

## Waste Heat Utilization

The energy produced from waste incineration is used to generate electricity as well as hot water.



Seibu Shimin Taiiku Kaikan Gym



Seibu Civic Recreation House



Spring



Summer



Autumn



Winter

**Facilities & Equipment**

**A facility that fully applies advanced tech for thorough waste processing**

**Receiving & Feed Equipment**



**Waste Weigh Bridge**

Garbage trucks transporting waste are first weighed on the waste weigh bridge.



**Waste pit & Waste Crane**

The waste crane mixes the waste stored in the waste pit and feeds it to the incinerator.



**Platform**

After being weighed, garbage trucks enter the platform and feed their loads into the waste pit through the loading doors.

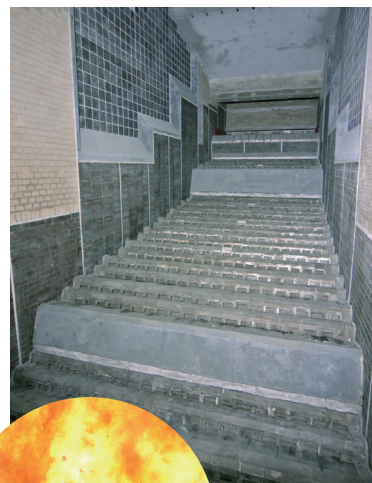
**Automated Equipment**



**Central Control Room**

As the "brain" of the Seibu Environmental Energy Center, the Central Control Room is where the staff operate the wide range of equipment in the facility.

**Incinerator & Ash Extruder**



**Incinerator**

Waste that enters the furnace is incinerated at a minimum temperature of 850°C. The heat of incineration also breaks down substances that generate odors.



▲ Interior of incinerator

**Ash Pit**

Incineration ash generated at the incinerator, as well as dust collected by the dust collection system is stored here.

Implementing thermal recycling to promote the emergence of a society committed to recycling

**Superior processing ensures complete waste combustion.**

An automated combustion control system contributes to high-temperature combustion inside the incinerator. To ensure safe and secure operation, dioxins and other substances with an environmental impact are controlled to minimize their effect.

**Protecting the landscape with a focus on environmental harmony.**

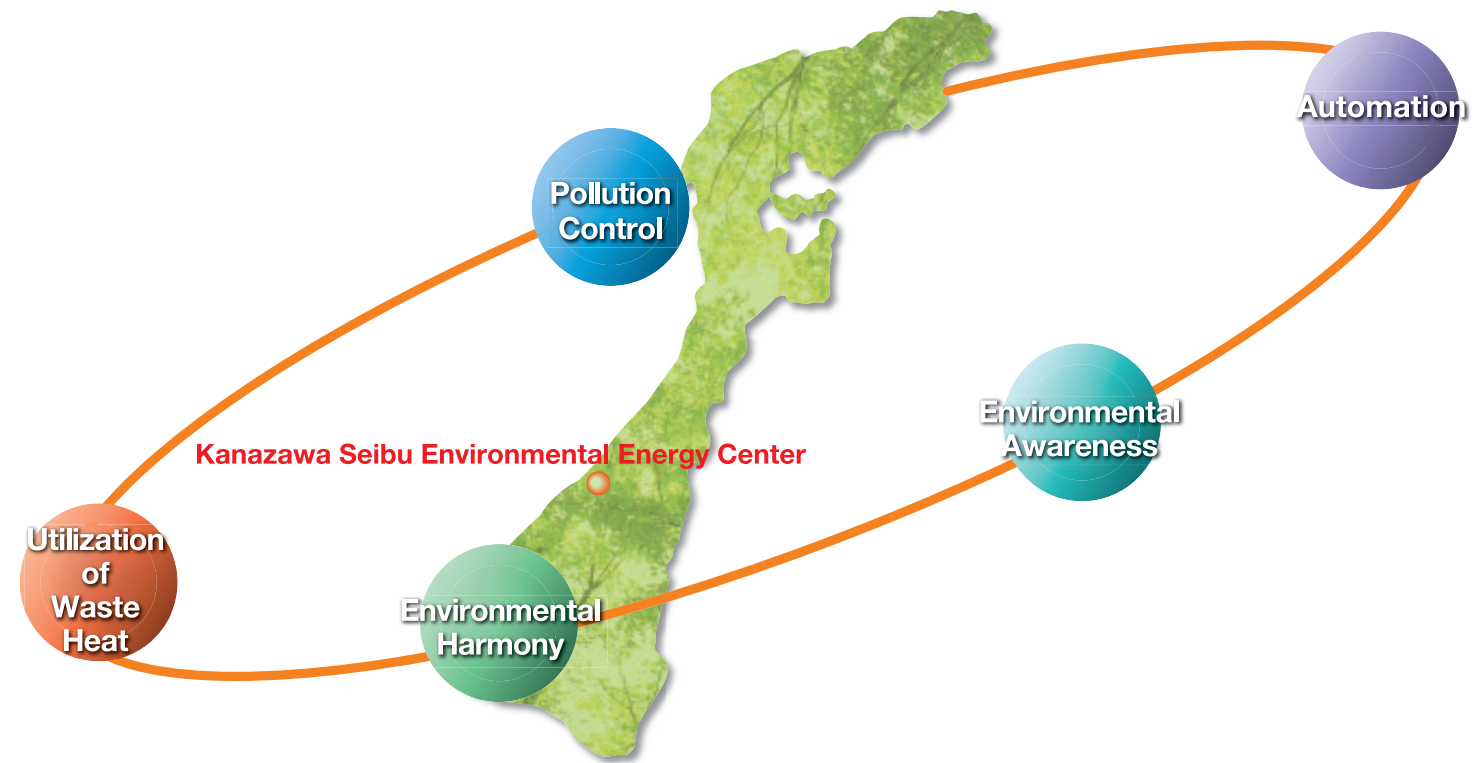
We have given full consideration to the design and color of the buildings, greenery on the grounds, and other aspects in an effort to harmonize the facilities with the surrounding environment.

**Combustion gas from incineration is cleaned before release.**

As part of our commitment to comprehensive pollution control, we address ash, sewage, and combustion gas as well as odor, noise, and vibration. To treat combustion gas, we have adopted high-performance combustion gas processing facilities to further increase the rate of removal of harmful gases such as dioxins.

**Standard Values for Combustion Gas Emissions**

Item	Standard Value
Particulate matter concentration	0.008 g/m <sup>3</sup> N max.
Hydrogen chloride concentration	25 ppm max.
Sulfur dioxide concentration	25 ppm max.
Nitrogen oxide concentration	50 ppm max.
Dioxin concentration	0.05 ng-TEQ/m <sup>3</sup> N max.



**Recovery and utilization of thermal energy generated by incineration**

In an effort to utilize waste heat from incineration effectively, the steam generated in the boiler is used to drive a 7,000-kW steam turbine generator. It is also used as a heat source to provide hot water both within and outside the facility. The power thus generated is used within the facility, and any excess power is provided to the electric power company.

**Look, listen, and learn about our environment.**

At this environmental education facility, visitors can see and learn about equipment such as solar power systems, hybrid lighting, and LED lighting. Also provided are explanatory devices that clearly reveal the mechanism of waste disposal as well as a networked computer that provides environmental training.

**Thermal Recycle**

