



*Innovator  
in Electronics*

Murata  
Manufacturing Co., Ltd.

## Introducing Murata Headoffice



# Towards Strategic Business Admi

## Headoffice Background

Murata Manufacturing Company, Ltd. was established at Kita-Takoyakushi, Sijou-Omiya Kyoto Prefecture in 1944. We established Murata Technological Research Laboratory Co., Ltd. at current Nagaoka Plant site (which was also the location of the old Headoffice) in 1956. We conducted research and development of raw materials and ceramic processing as well as manufacturing of disc type ceramic capacitors and piezoelectric products. In 1961, we decided to merge with Murata Technological Research Laboratory Co., Ltd. and moved Murata Headoffice from Hinooka, Yamashina to the location of the Murata Technological Research Laboratory. We later ran out of space at our old Headoffice (current Nagaoka Plant) as our businesses grew and moved manufacturing operations to Yokaichi Plant and the subsidiary companies, and R&D as well as a portion of the central management operations to Yasu Plant. Only the central management function and some R&D divisions remain in old Headoffice building.

However, as we look into the future, we felt the need to concentrate the Headoffice functions such as central management and business division planning in one location again to accumulate and share all the information as well as to deploy aggressive sales activities so that we can make rapid business decisions. Consequently, we have decided to build a new Headoffice at the most convenient location in the immediate vicinity of JR Nagaokakyo Station.

We have considered the three following key issues in making our decision.

1. Concentrating and sharing information to promote rapid business by having central management staff members and division management staff all in one place.
2. Having convenient access to business partners and government offices, as well as fortifying collaboration with various Murata divisions by building the Headoffice close to JR Nagaokakyo Station.
3. Making the third fully-fledged R&D center comparable with Yasu Plant and Yokohama Technical Center.

Construction of the new Headoffice falls on the 60th anniversary of the foundation of Murata Manufacturing. Although the business environment for the electronics industry is quite severe, we vow to go back to our founding spirit and deploy strategic business administration.

## Location

The new Headoffice building is located in the urban renewal site at Higashi-Kotari, Nagaokakyo-shi, Kyoto Prefecture directly adjacent to the east entrance of JR Nagaokakyo Station. This is the first Kyoto Prefecture urban renewal plan for the advanced land utilization, to promote leading edge industries.

Upon Kyoto Prefecture's request to expand the arterial road on the east side of this lot, we submitted 448m<sup>2</sup> (4,822ft<sup>2</sup>) of our lot. In exchange, Kyoto Prefecture has increased the floor-area ratio of the Headoffice building from 200% to 400%. We also receded the wall by 4m (13.1ft) to allow for the roadside greenery.

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## Building Overview

The Headoffice complex is built of twin construction (A1 complex and A2 complex) with each floor connected together above the 5th floor with corridors over an open space.

The guest reception zone and a hall accommodating 500 seats are located at the lower level, a lounge zone and R&D floor are located at the middle level, offices are located at the upper level, and a garden is located on the rooftop.

We have positioned the building to as far south as possible in the lot, and made the north complex (A2) lower than the south complex (A1) to ensure minimal disruption to the neighboring community. East and west exterior walls of the Headoffice are lined with large ceramic tiles created with the traditional craft of Kyoto. In order to reduce the energy consumption of the air-conditioning system, we located core facilities such as elevator shafts and utility rooms so that we can enclose the east and west sides of the building having exposure to strong sunlight with walls.

In addition, north and south aspects are covered with double-layered glass sandwicheing blinds absorbing the heat from the blocked sunlight to be vented out along with the indoor air to control the external thermal load. (For detail, see the description of the Air Flow Window on page 8.)

## Building Specification

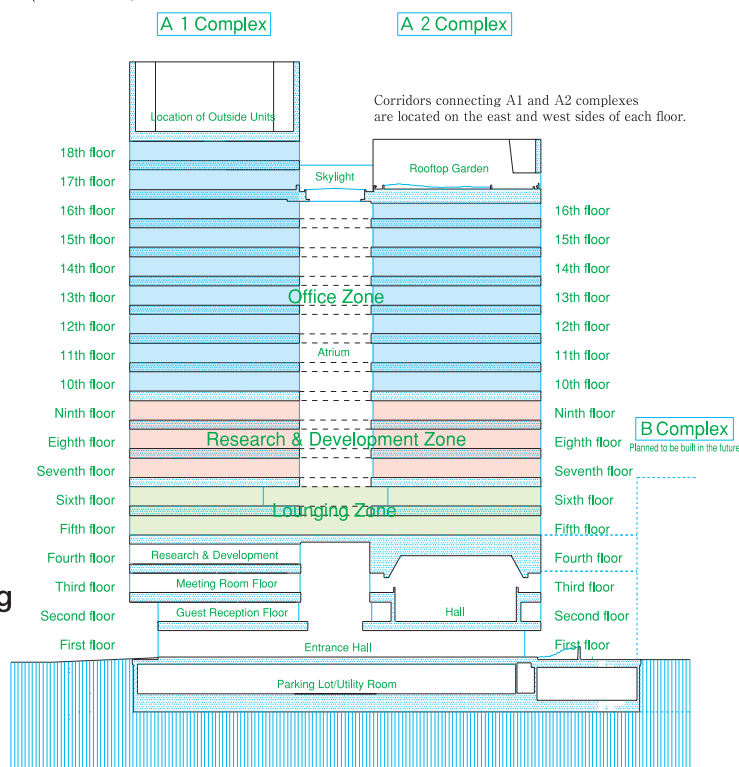
Building Name: Murata Manufacturing Company, Ltd. Headoffice  
 Building  
 Location: 1-10-1 Higasi Kotari, Nagaokakyo-shi, Kyoto Prefecture  
 Lot Area: 12,348.75m<sup>2</sup> (132,900ft<sup>2</sup>)  
 Building Area: 3,217.20m<sup>2</sup> (34,630ft<sup>2</sup>)  
 Total Floor Space: 43,410.45m<sup>2</sup> (467,300ft<sup>2</sup>)  
 Number of Floors: A1 Complex B1 through 18  
 A2 Complex B2 through 16  
 Maximum Height: 83.0m (272.3ft)  
 Construction: steel frame (partially reinforced concrete)  
 Parking Spaces: 99  
 Construction Period: April 2003 to September 2004

## Owner and Manager of the Lot and Building

Murata Land & Building Co., Ltd.

## Facilities Overview

Electricity Reception/Transformation: 3 Phase 3 Line 6.6kv (one main line and two auxiliary lines)  
 Power Generator: Gas Turbine Generator (for disaster prevention) 500KVA  
 Diesel Generator (for Disaster Measures Headoffice use) 50KVA  
 Air-Conditioning Sources: Gas Powered Absorption Water Cooler/Heater 3 units  
 Turbo Freezer (for ice storage) 1 unit  
 Ice Storage Unit 1 unit  
 Air-Conditioning Method: Floor Duct Air-Conditioning (on office floors)  
 Water Supply: Drinking Water System and Utility Water System  
 Lighting: Adjusted with light intensity/human presence sensor  
 Security Monitoring System: BACnet (Open Network System)  
 Elevators: 24-passenger elevators 8 units, emergency 17-passenger elevator 1 unit  
 cargo elevator: emergency 26 passenger cargo elevator 1 unit  
 Escalators: 2 units



## Plans for the Complex B

Planned to be built in the future as a development and prototyping complex  
 Construction: steel frame B1 through 3  
 Building Area: 2,000m<sup>2</sup> (21,530ft<sup>2</sup>)  
 Total Floor Space: 8,800m<sup>2</sup> (94,720ft<sup>2</sup>)  
 Height: 19m (62ft)



## Entrance Zone

The floor is lined with granite panels in the image of traditional Japanese slate-lined ground. Interior walls are lined with large ceramic tiles and sash-free glass screens to emphasize openness and continuity with the outside space. The receptionist's counter also is designed with a soft and natural feeling consistent with the stone-lined floor, to welcome all visitors.



Entrance Lobby



### Entrance

The center of the entrance floor has an open space above to offer spatial unity with the guest reception zone on the second floor and at the same time allows natural light to flood in.



### PR Corner

Murata Manufacturing's history and background as well as main products are introduced here. Publications concerning Murata Manufacturing are also on display.



### Business Conference Zone

There are open space business conference areas with low partitions, as well as more private business conference rooms.

### Japanese Garden Landscaping

Karesansui, or Japanese garden can be viewed from the business conference zone. The garden is partitioned into seven sections by standing pillars to model a folding screen painting depicting rich and natural scenes consisting of rocks, plants and sand.



## Hall

This nine-meter high (three-story tall) hall designed mainly for conferences and lectures has acoustics good enough for small concerts. Two sidewalls are made of sound dispersing wooden ribs designed to resemble bamboo forests.



### Multi-Purpose Utilization

An availability of two 200-inch high-resolution screens and a high-resolution projector makes versatile presentation possible. In addition to the conventional acoustic system, Murata's own spherical speaker system is placed next to the stage to offer intricate, clear, and dynamic sound quality.



### Stage and Seats

The stages and front rows of seats are movable to allow for expansion of the stage space. The range of space can accommodate from lectures to concerts. Chairs with retractable memo tables are positioned on rising steps to allow for functional conferences.



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Hall, Meeting Rooms



### Foyer

The three-story tall foyer that can also be used as a waiting room for conferences and events, is finished with natural materials such as wood and diatom earth. An indoor spot garden can be viewed through the low-hanging glass screen.

## Conference Space

By fully opening the sliding walls, the space can accommodate up to 220 people for conferences and lectures. Wireless Internet connection is available in this area as well.





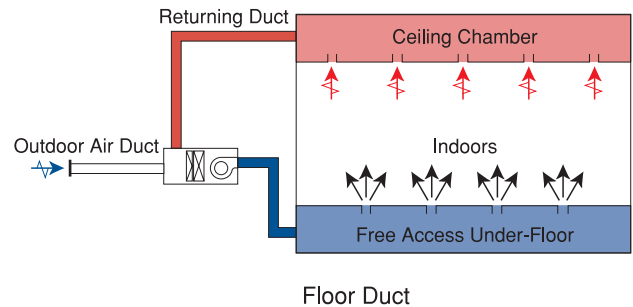
## Office Zone

Two office buildings stand next to each other across the 12 story tall 32.4m (106.3ft) x 12.0m (39.4ft) atrium with a glass ceiling above. It not only permits steady natural lighting, but also gives clear views across the floor as well as the outside to create open, stress-free office space. The office floors (32.4m (106.3ft) x 21.6m (70.9ft): approx. 700m<sup>2</sup> (753.5ft<sup>2</sup>)) have no pillars or walls to obstruct workers' communication.



### Atrium

We conserve electricity by incorporating natural light through the atrium. The corridors connecting A1 and A2 complexes on the east and west sides not only promotes communication between two buildings, but also works as a safety measure in the event of fire. Because of this construction, we were not required to provide for hovering space for rescue helicopters although A1 and A2 complexes are considered to be high-rise buildings.



### Office Floor

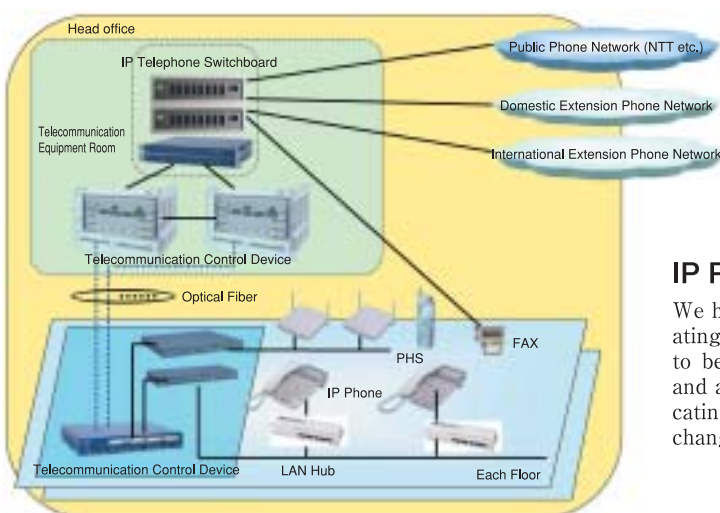
Office floor is laid out with 3.6m (11.8ft) x 3.6m (11.8ft) modular spaces, easily adjustable with removable partitions. The ceiling height is 3.1m (10.2ft) giving the feeling of openness. We have adopted the following equipments for safty, hygiene and energy conservation measures.

#### •Lighting Fixtures

We have selected bi-directional lighting fixtures to light the entire ceiling. Highly energy efficient Hf fluorescent lamps are automatically controlled by light intensity and human presence sensors.

#### •Air-Conditioning with Floor Ducts

Air-conditioning with floor ducts are used to finely control the air flow. Human presence sensors automatically stop air-conditioning in the areas absent of workers.



### IP Phone System

We have fortified our communications environment by incorporating fiber optics, IP phones and PHS terminals. We were able to better serve our customers through this new environment, and at the same time have the freedom of rearranging and relocating telephones resulting in more flexible room arrangement changes.

## Lounging Zone

A staircase connecting the fifth and sixth floors is designed to be integrated into the open space in the middle of A1 and A2 complexes. Fifth floor cafeteria is positioned at the base of 12 story-tall atrium illuminated brightly with natural light through the skylight and open space. Coffee house, infirmary, and library are located on the sixth floor to accommodate employee benefits.

### Employee Cafeteria

Employee cafeteria, offering inexpensive and tasty meals, can seat 600 people.



A 12-floor-tall atrium (Starting at the 5th through the top light of the 16th floor.)



### Automatic Cash Register System

Payment to the cafeteria is made through a cashless system with a non-contact type IC card to ease the congestion at the cash register upon payment. Dishes have IC tags attached to register them automatically.



### Coffee House

A coffee house is located at the area facing the atrium on the sixth floor for relaxation. As with all other locations in the complexes, smoking is not allowed.

# Environmental Considerations

The Headoffice building is designed as a leading-edge ecology building. Resource and energy conservation measures are worked into design through the entire life cycle of the building. It conserves approximately 30% of the energy consumed by an average office building. Smoking is prohibited in all locations except for the designated areas.



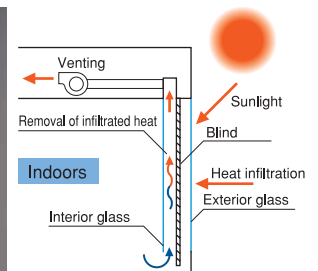
## Rooftop Greenery

We attempt to lower the rooftop temperature during the summer in order to reduce the air-conditioning load by incorporating rooftop greenery. It also prevents heat island effect by reducing heat reflection to the surrounding environment.



## Lot Greenery

We are trying to lower the surrounding atmospheric temperature through the transpiration effect of the plants, by planting as many plants in the lot as possible. We have used plant-ready cement blocks to line the parking lot realizing a 30% overall greenery ratio (46% if the greenery in the B complex building site is included).



## Air Flow Windows

We have adopted air flow windows that ease the effect of outside heat while maintaining the view and sense of openness. A blind is installed between two layers of glass to vent out the heat generated from the reflected sunlight along with the indoor air (approximately 15% of the room air flow) to provide efficient protection from the heat.



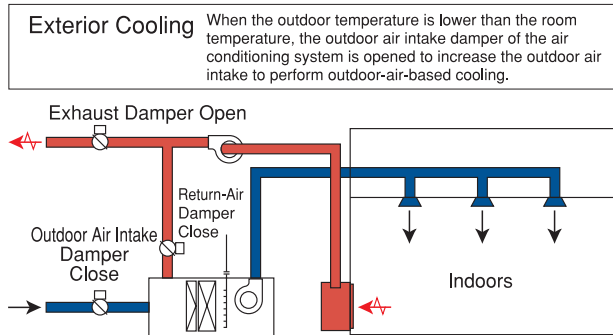
## Permeable Pavement

We have adopted permeable pavement to allow rainwater to return underground.



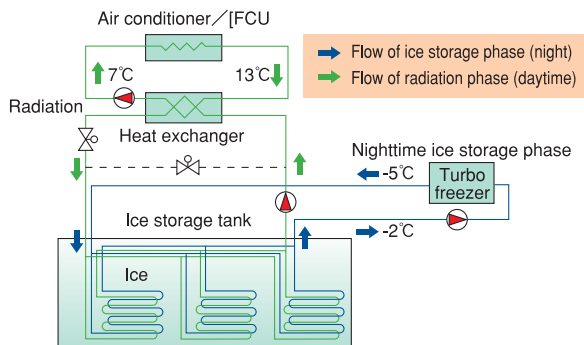
## Exterior Cooling System

We can take in cool outside air during the spring and autumn, to reduce air-conditioning energy consumption by incorporating the exterior cooling system.



## Ice Storage System

We reduce energy consumption by combining a high-efficiency gas powered absorption water cooler/heater and ice storage system for the heat source. Also the use of the ice storage system averages out the electric load.



## Billboard

We used LED to light the billboard on the outer wall, conserving 93% electricity over the conventional neon light.

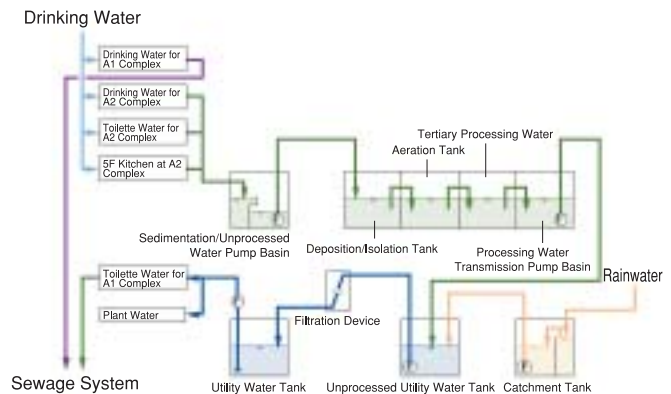
## Zero Emission Construction

We have achieved zero emission in the construction work of the Headoffice building by totally eliminating landfill waste. We thoroughly promoted separation of 9 recyclable waste types (\*) to reach 100% recycle ratio. This is considered to be a leading-edge attempt for construction works in the Kansai region.

\* Nine Recyclable Waste Type: concrete rubble, wood pieces, plastic waste, plastic compound, dust, metal shaving, vinyl chloride pipes, wires, cardboard

## Rainwater/Wastewater Recycling Facility

We have installed rainwater and wastewater recycling facility to collect and filter indoor wastewater and rainwater from the rooftop to flush the toilettes. This results in 33% reduction of drinking water consumption.



# Disaster Measures

We prepared disaster measures to prevent or reduce the effect of disasters happening inside the Headoffice building as well as preventing any damages to the surrounding regions.



## Emergency Staircase

We could secure four-way escape route by having twin construction and corridors connecting them at each level. We allowed natural light to come into the emergency staircase to aid descent. We also installed smoke ejection system to keep the smoke out of the staircase. Having those emergency measures made the emergency hovering space above the rooftop unnecessary.



Steel Damper



Unbonded Braces

## Steel Damper and Unbonded Braces

The Headoffice building is structured to withstand the scale of Great Hanshin Earthquake. It is also repairable with minor repairs even if it suffers some earthquake damage. Steel dampers and unbonded braces are built into key locations of the steel frame to absorb the earthquake energy.



## Emergency Closure Gate

To prevent the generator fuel leakage accident, we have installed emergency closure gate in the rain gutters.

## Kitchen Heat Source

Kitchen equipments are all electric. All gas-operated devices are placed in the basement utility room.



## Consideration for the neighboring communities

We have taken various measures to minimize the affect from our building to the living condition of the surrounding communities to ensure a safe and comfortable environment



### Consideration for Communities on the North Side of the Lot

We located the building as far south as possible, made the north side of the building (A2 complex) lower than the south side (A1 complex), and placed a greenery mound, consisting mainly of indigenous trees, approximately 1,200m<sup>2</sup> (12,920ft<sup>2</sup>) on the north end. We minimized the shadowing and closed-in feeling from the Headoffice building.



### Consideration for the Arterial Road on the East Side

We submitted a part of our lot for the arterial road expansion project. We also set the eastern fence back by 4m (13.1ft) to place a greenery area next to the sidewalk to make a comfortable walkway. We have also installed greenery illumination to aid crime prevention. We used less imposing louver fence.

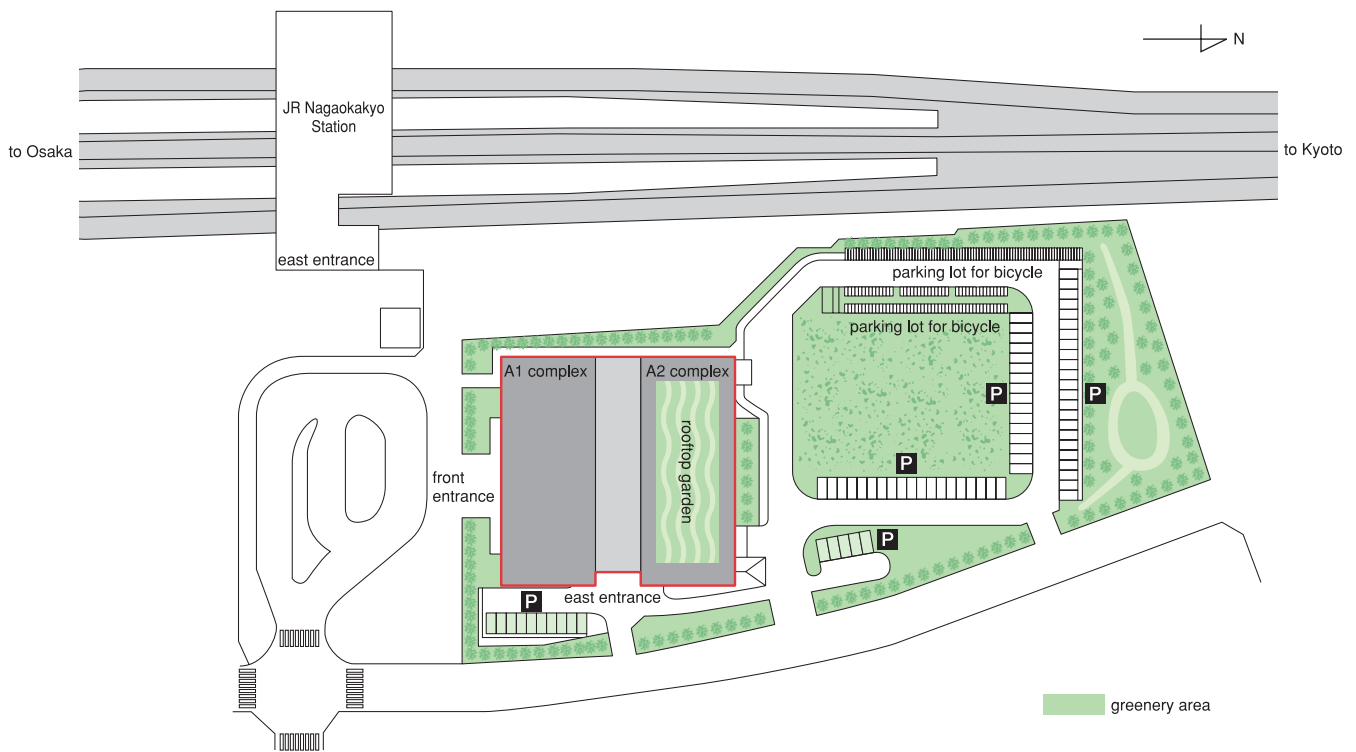


### Transparent Glass

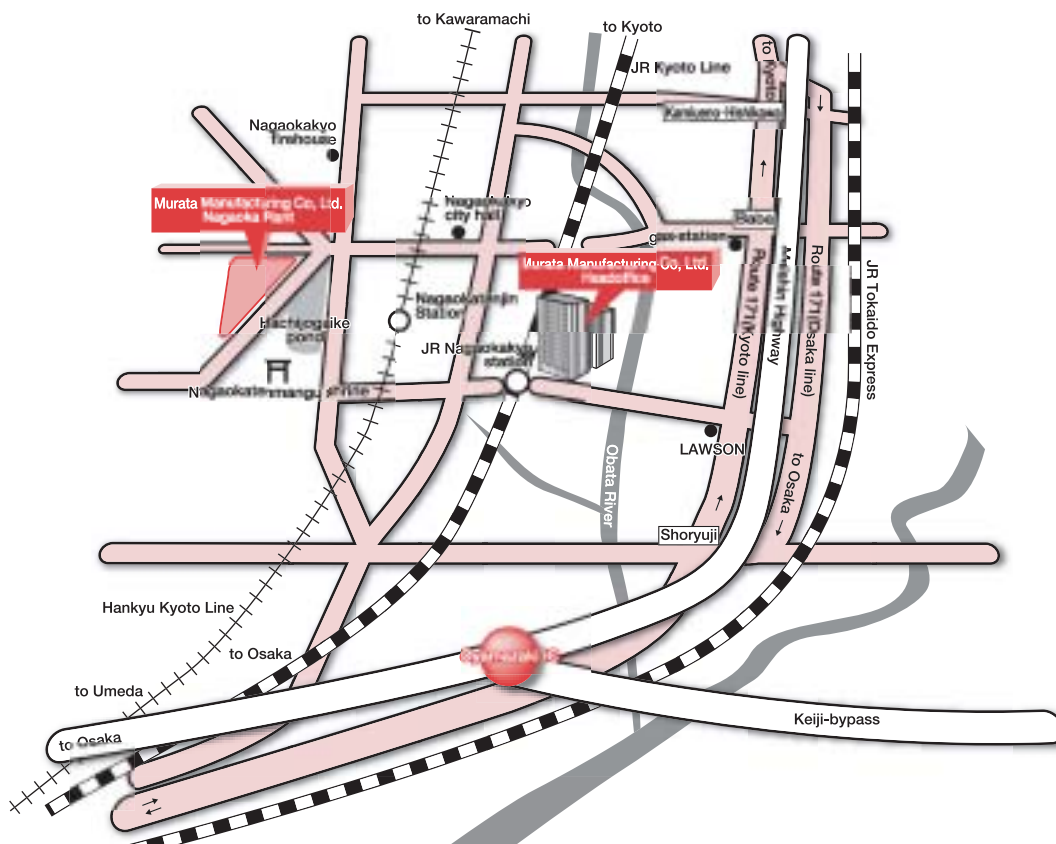
We have used transparent glass, instead of reflective glass on the outside wall to reduce reflection of sunlight and minimize TV reception interference. We also selected radio-wave transmitting blinds.



## Layout



## Access



## Transportation

One minute on foot from JR Kyoto Line Nagaokakyo Station

Twelve minutes on foot from Hankyu Kyoto Line Nagaokatenjin Station

## Location

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