

Intermediate-layer seismic isolation systems

Different functions and structural systems are placed in layers above and below a seismic isolation layer to produce a high earthquake-resistant performance.



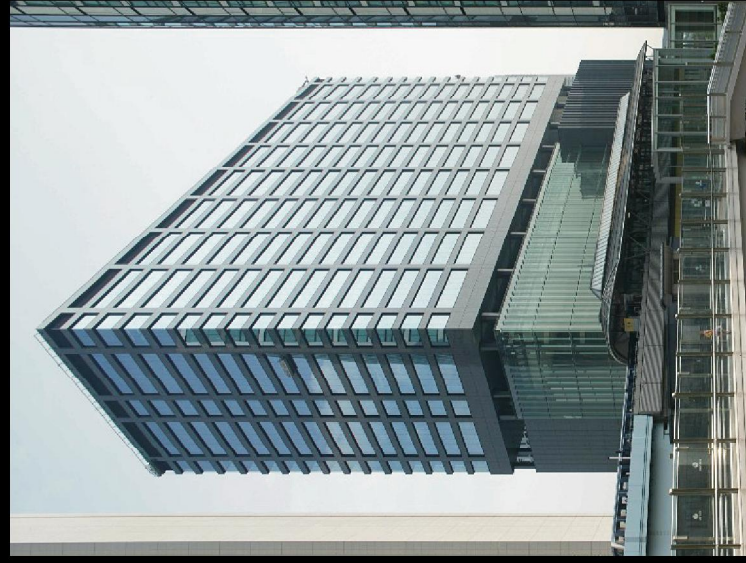
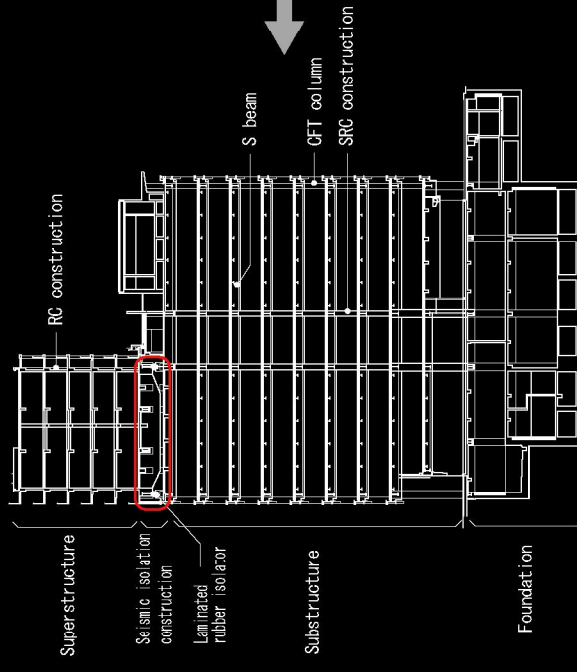
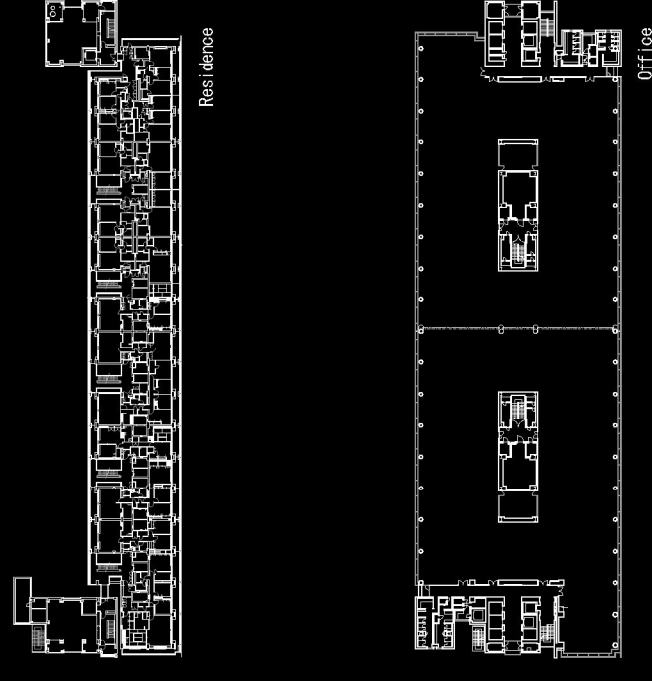
Lidabashi First Building/First Hills Lidabashi

This is a redevelopment project with the residences of landowners and leaseholders laid out in layers on the office section.

Although ordinary seismic isolation system lays out a seismic isolation layer on building foundations, this system installs seismic isolators on the intermediate-layer of the building.

A highly flexible structural planning is made possible by laying out different structural systems (steel and reinforced concrete constructions) and lateral-force resisting systems (moment-resisting and wall constructions), above and below the intermediate seismic isolation layer of the building. The residences above the intermediate seismic isolation layer have a high degree of flexibility in a floor planning free of columns and beams. Responses during earthquakes are reduced by the seismic isolation effect.

The low-rise section below the intermediate seismic isolation layer is a flexible office space having a floor area of 4,350 m² per story. The low-rise section is of vibration control construction that utilizes the mass-damper effect of the residences above as a weight.



Shiodome Sumitomo Building

An intermediate-layer seismic isolation system is adopted for this building that has just been completed among adjacent high-rise buildings in Shiodome, Tokyo.

The building consists of a large-span office in the high-rise section above the intermediate-layer seismic isolation layer and a hotel, including an atrium, on an irregular plane in the low-rise section below the seismic isolation layer.

A high earthquake-resistant performance of the building is achieved by the office of seismic isolation construction and the hotel of vibration control construction using the mass damper effect. As regards glass covered atrium for complete sense of transparency, our structural engineers make positive proposals to create lively and safe structural frames, centering on the slender columns for the end pins.

