

Intermediate seismic isolation ultra high —rise office building integrated with historical building

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Abstract

This project was a redevelopment of the Mitsubishi Logistics Corporation Edobashi Warehouse Building, which was constructed in 1930. The following is a description of the requirements, an outline of the design, and the response analysis results, from the detailed design of this project.

Keywords: Intermediate seismic isolation; Steel structure; high-rise buildings.

1 Outline of the Architectural Scheme

Name	:Nihonbashi Dia Building
Location	: 1-19 Nihonbashi, Chuo-ku Tokyo
Total floor area	: 30 012,31 m ²
No. floors	: B1 F18 P1
Building height	: Av. Ground level +89,281 m
Structural form	: Intermediate level seismic isolation
Structure type	: 7F to RF (upper structure) - CFT columns S beams B1 to 6F (lower structure) - SRC structure (in part RC)
Structural form	: 7F to RF(upper structure) - Braced moment resisting structure B1 to 6F (lower structure) -Moment resisting structure with seismic walls.



Figure 1. Perspective view

Of the existing building with 6 floors above ground and 1 basement level, 2 spans were preserved on the east side and the west side except for the 6th floor part. The rest (the center) of the existing building was demolished, and a new ultra high-rise part was constructed with 1 basement level, 18 floors above ground, and 1 penthouse level, integrating the design and function of the existing part and the new part. Therefore the new construction and the existing parts were structurally integrated, without providing an expansion joint between them.