

NARA CENTENNIAL HALL

NARA, JAPAN
1999

NAGATA
ACOUSTICS

Acoustics Consultant:	NAGATA ACOUSTIC, Inc.
Architect:	Arata Isozaki & Associates
Owners:	City of Nara
Theatre Consultant:	Professor Shozo Motosugi
	Stage Lighting : Yasunori Ito
Sound & Communications:	NAGATA ACOUSTIC, Inc.
Construction Cost:	¥ 16,000 Million JPY (approx.)

Nara was the first capitol in ancient Japan and well known for its famous historical and cultural treasures. The building of Nara Centennial Hall was one of the major projects planned to celebrate the 100th anniversary of the city's incorporation as a municipality. The hall opened in February 1999.

Nara Centennial Hall has a large hall of 1180 ~ 1720 seats for multiple use, a small concert hall of 446 seats, and a multi-purpose gallery.

The concert hall looks like a glass case that has been quietly set down inside the precast concrete shell of the facility's building. It is designed in the shoebox style as a concert hall for chamber music. Glass panels form the upper portions of the hall's walls on all four sides, so that this hall is literally a glass concert hall.

ACOUSTICAL DESIGN

- (1) The large and concert halls was planned to have dramatically different characteristics.
- (2) The rear walls of their stages are allocated "back-to-back" in order to achieve effective degree of sound isolation between the adjacent two halls. Beside this, we installed anti-vibration supports on the steel framework of the glass walls of the concert hall.
- (3) The acoustical design of the small hall was a big challenge because of its glass construction. To compensate the reflective nature of the glass panels surrounding the audience seating area, we selected their size, thickness and slant angles of each glass panels and used carpeting on the hall's flooring to adjust the reverberation characteristics of the space. Additionally, we selected audience seats of highly absorptive cushions, backs, and spines. Finally, we mounted the porous panels and glass wool mats in the back of the mesh portions of the ceiling to achieve the design goal of the reverberation times as a concert hall.

BUILDING DETAILS AND ACOUSTICS DATA

Location 7-1 Sanjoumiyamae nara city,
630-8121, Japan

Tel 0742-34-0100

Seating Capacity 446

Room Volume 6500CM

Surface Area 2400SM

Stage Area 102SM

Reverberation Time (Mid-Frequency)

Unoccupied 2.1sec

Occupied 2.0sec

Finishing Materials

Ceiling : glassfiber reinforced cement , perforated
board + glass wool board (50mm) + air-space

Upper Wall : reinforced/float glass (8-12-15mm)

Lower Wall : wooden

Floor : carpets and wooden on concrete

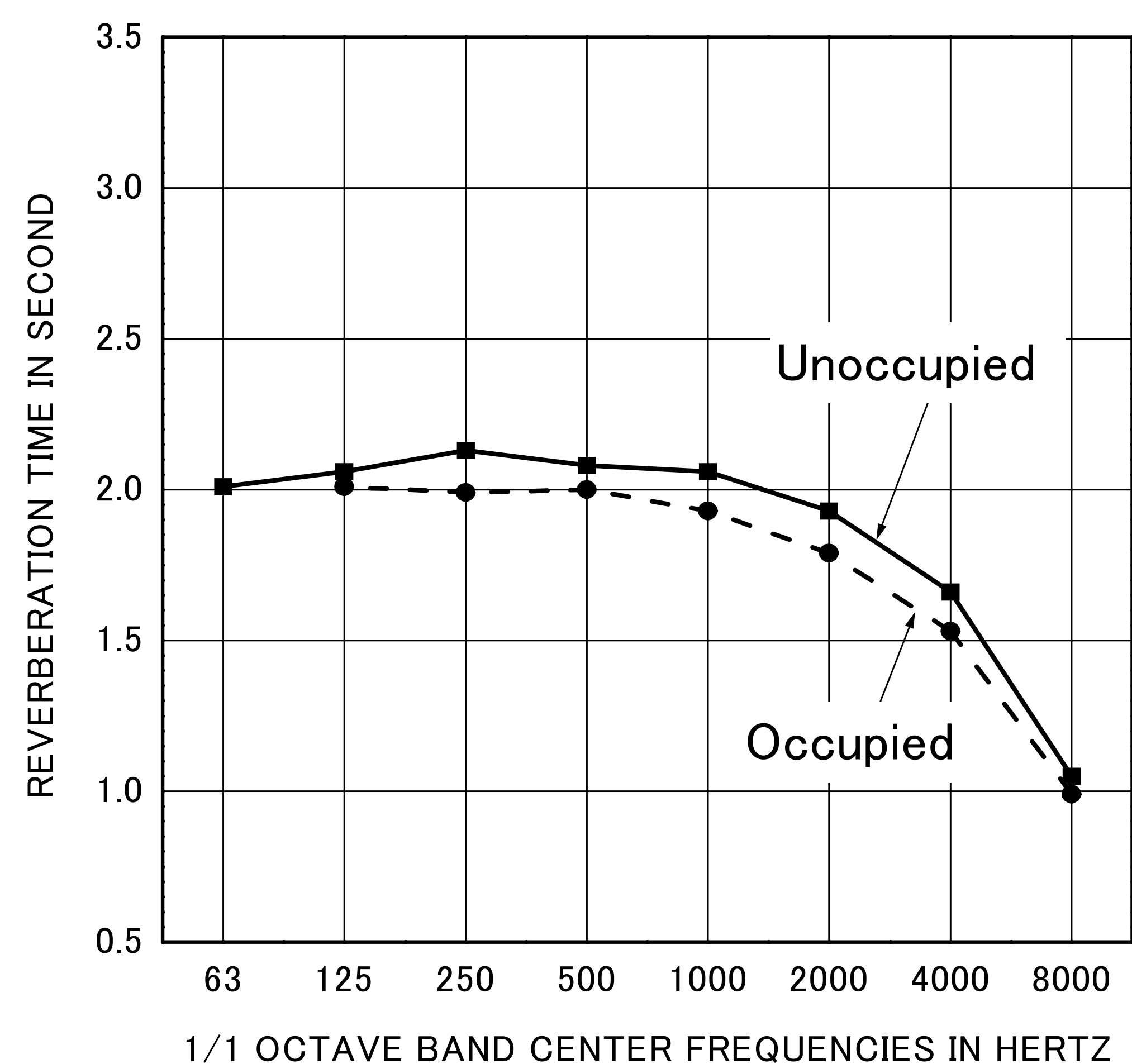
Seat : Upholstered

Noise Level : NC-15 below

Other Facilities : Main Hall (1180-1720 seats),
Meeting Hall (132SM)

Total Cost : ¥ 16,000 Million JPY (approx.)

Total Floor Area : 22,682SM

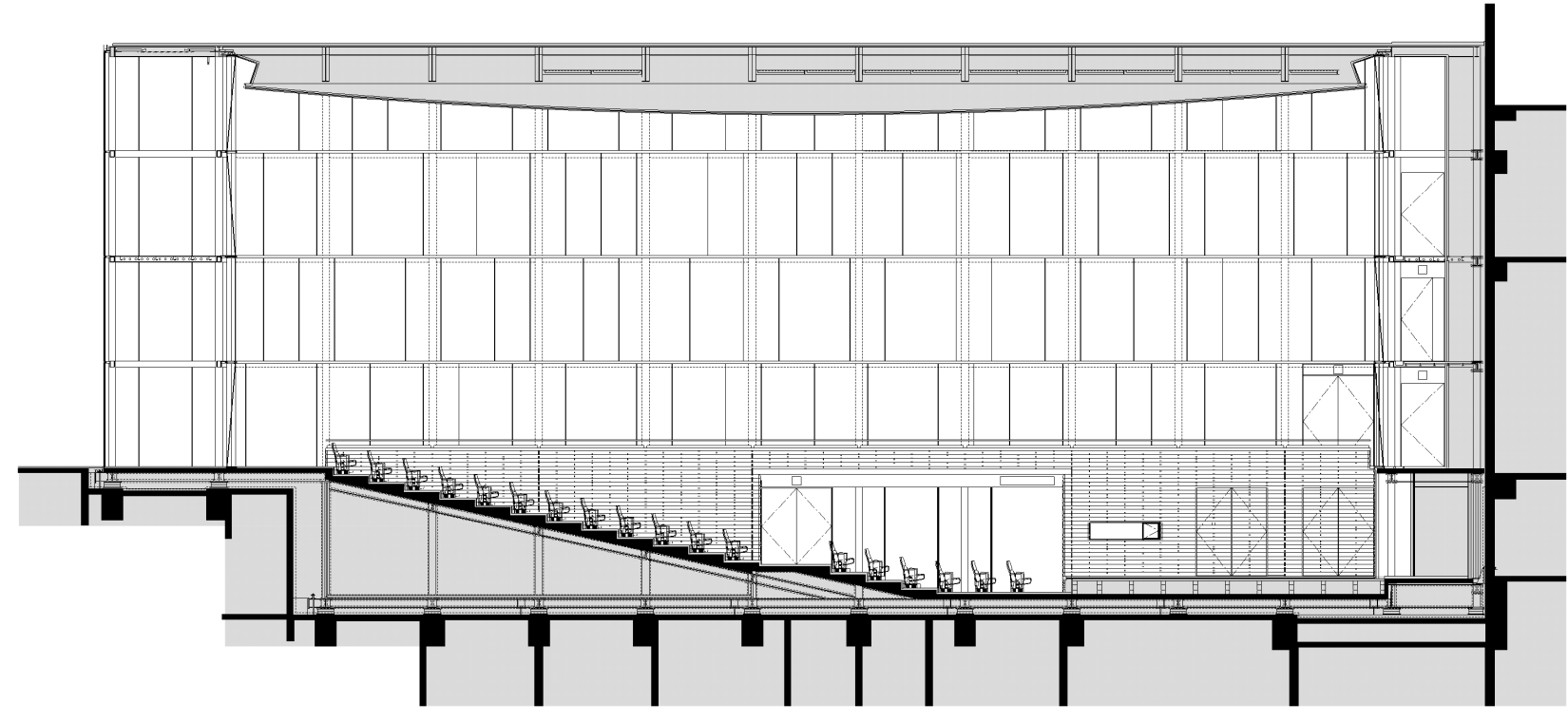


REVERBERATION TIME

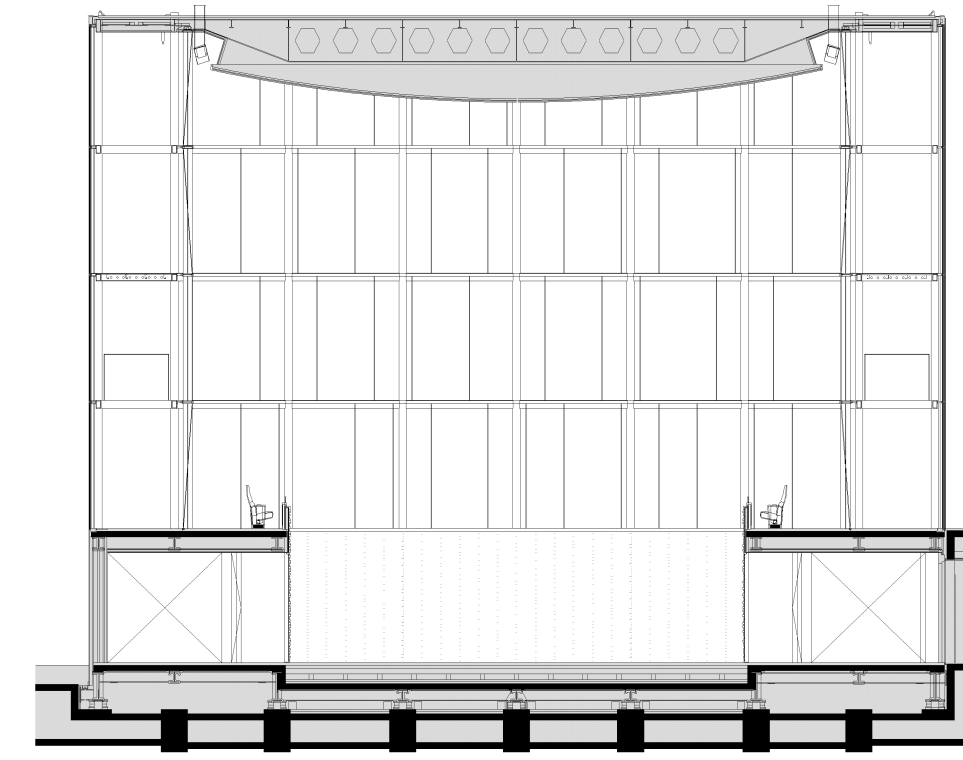
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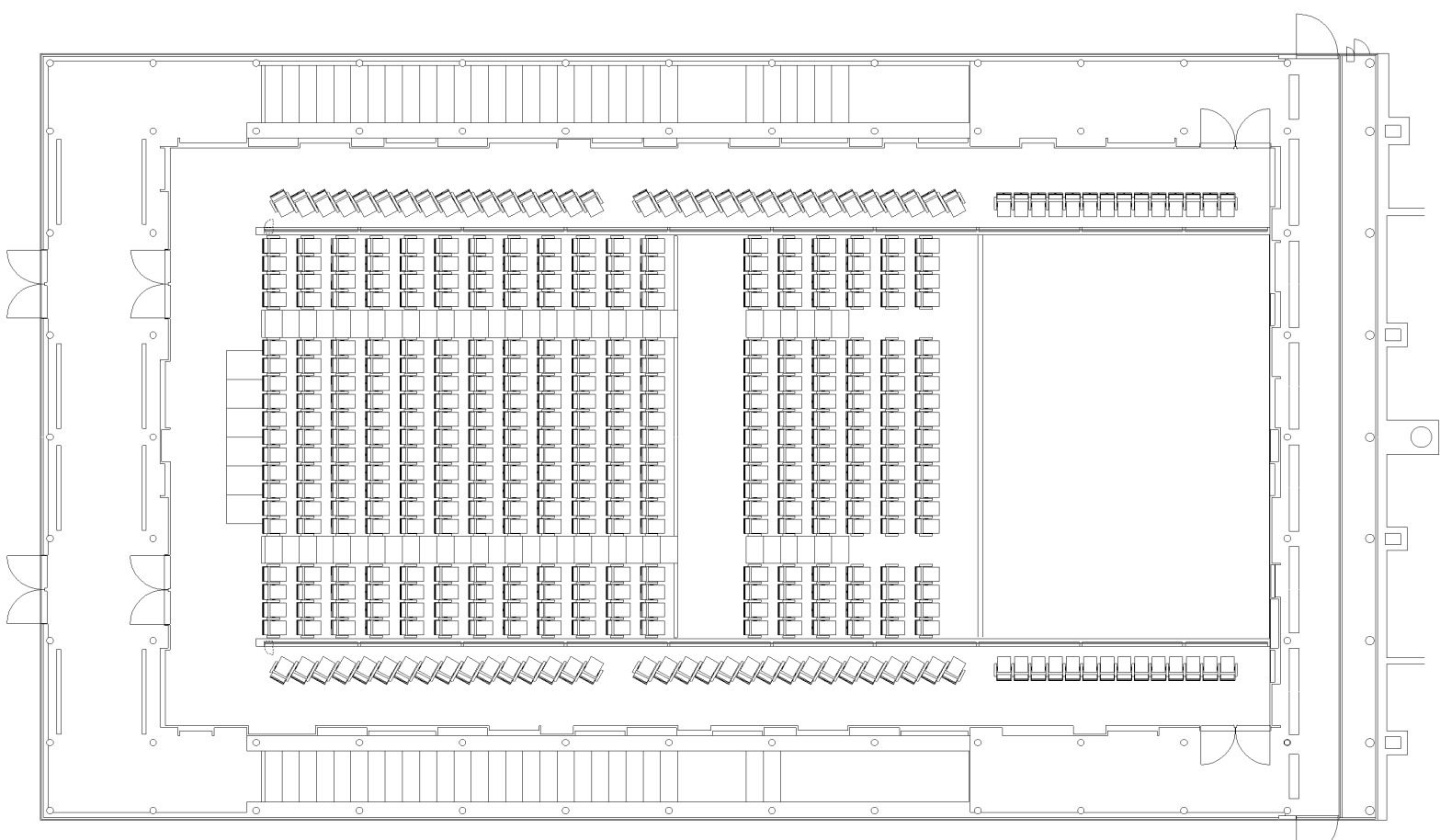
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LONGITUDINAL SECTION

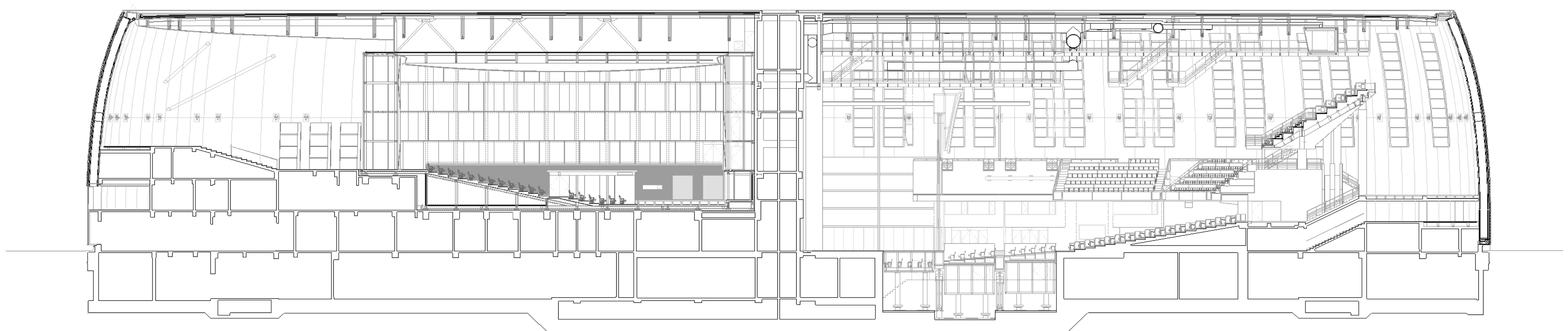
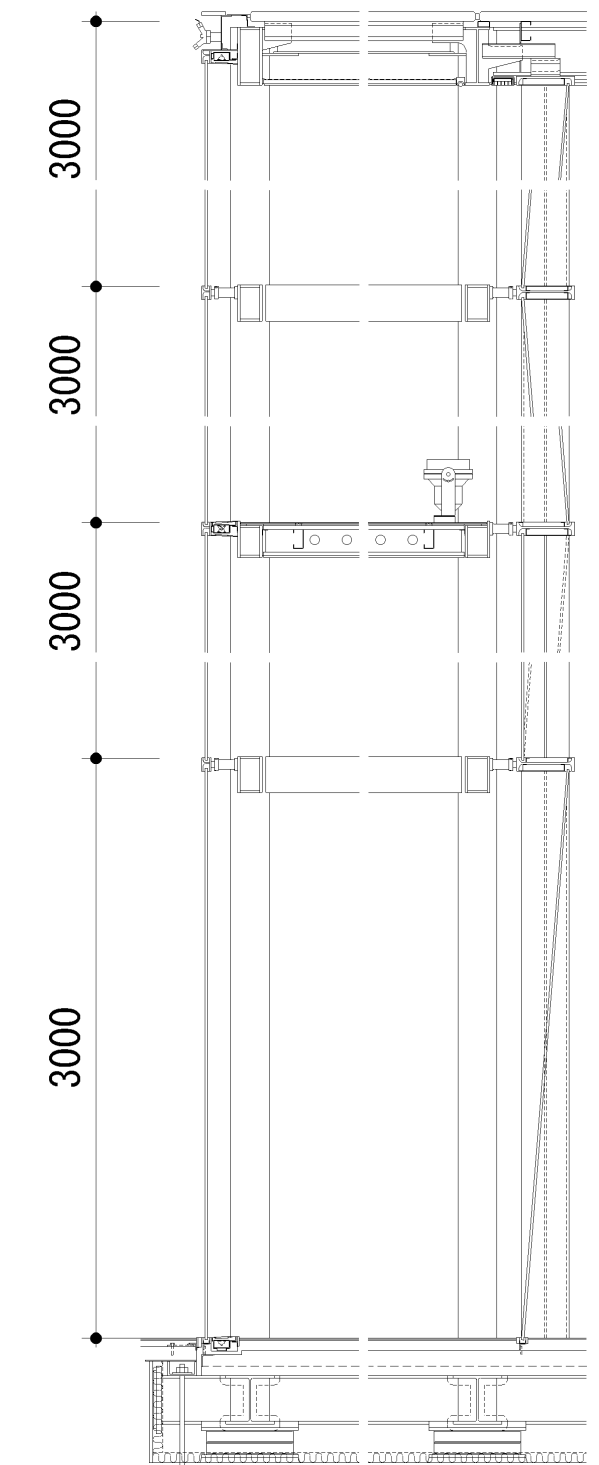


TRANSVERS SECTION



0 5 10 15 20 METERS

PLAN



0 5 10 15 20 METERS

LONGITUDINAL SECTION OF BUILDING