

Acoustics Consultant:	NAGATA ACOUSTICS, Inc.
Architect:	Yoshinobu Ashihara & Associates
Owners:	Ishikawa Prefecture
Sound & Communications:	NAGATA ACOUSTICS, Inc.
Construction Cost:	19,019 Million JPY

Ishikawa Concert Hall has two performance spaces, Concert hall with 1,560 seats as the home of Orchestra Ensemble Kanazawa (OEK), the artistic director Hiroyuki IWAKI, and Theater with 720 seats for Japanese traditional performances. The hall's open is scheduled for September 2001.

The shape of "shoe-box" for the concert hall was initially requested by the client. The room acoustical design focused on following matters;

**Dimensions** : Basic room dimensions were carefully examined through ray-tracing computer simulation studies, and settled 20m in width, 20m in height and 53m in length. Two steps of balconies surrounding the main audience floor.

**Reflectors on stage** : Three pieces of large ensemble reflector, which area in total is nearly same as the stage, are hung over the stage to supply early reflections on players and audience. The height of the reflectors are adjustable separately according to the scale and the style of musical performances. Middle part of stage side walls are inclined inward also to provide reflections on stage and frontal area of audience.

**Scattering elements** : Sound scattering elements are designed on the sidewalls and the ceiling. Micro zigzag ribs on lower sidewalls are intended to provide reflections uniformly on stage and audience. Triangular pyramids on upper sidewalls of the stage supply scattering sound energy on stage. Dent pyramids on the ceiling are effective for preventing sound focusing due to the gently concaved ceiling. The effectiveness of the elements are confirmed through the 1/10 scale model study.

**Reflecting walls** : Walls around the audience and stage sidewalls are constructed with Multi-layered gypsum boards, which has a surface density of 50 kg per square meters. The back wall of the organ is constructed with pre-cast concrete, a surface density of 100 kg per square meters. The walls are laminated wooden sheet and finished URUSHI, Japanese lacquer, painting.

### BUILDING DETAILS AND ACOUSTICS DATA

Location 620, Showa-cho, Kanazawa, Ishikawa  
920-0856, Japan

Seating Capacity 1,560

Room Volume 18,700 CM

Surface Area 5,850 SM

Stage Area 225 SM

Reverberation Time (Mid-Frequency)

Unoccupied 2.2 sec

Occupied 2.0 sec

Finishing Materials

Ceiling : 3 layers of fiber reinforced gypsum board  
(8 mm x 3)

Wall : wooden surfaced 3 layers of fiber reinforced  
gypsum board (8 mm x 3)

Floor : 12 mm flooring on concrete

Seat : upholstered

Miscellaneous : ensemble reflector (same as ceiling)

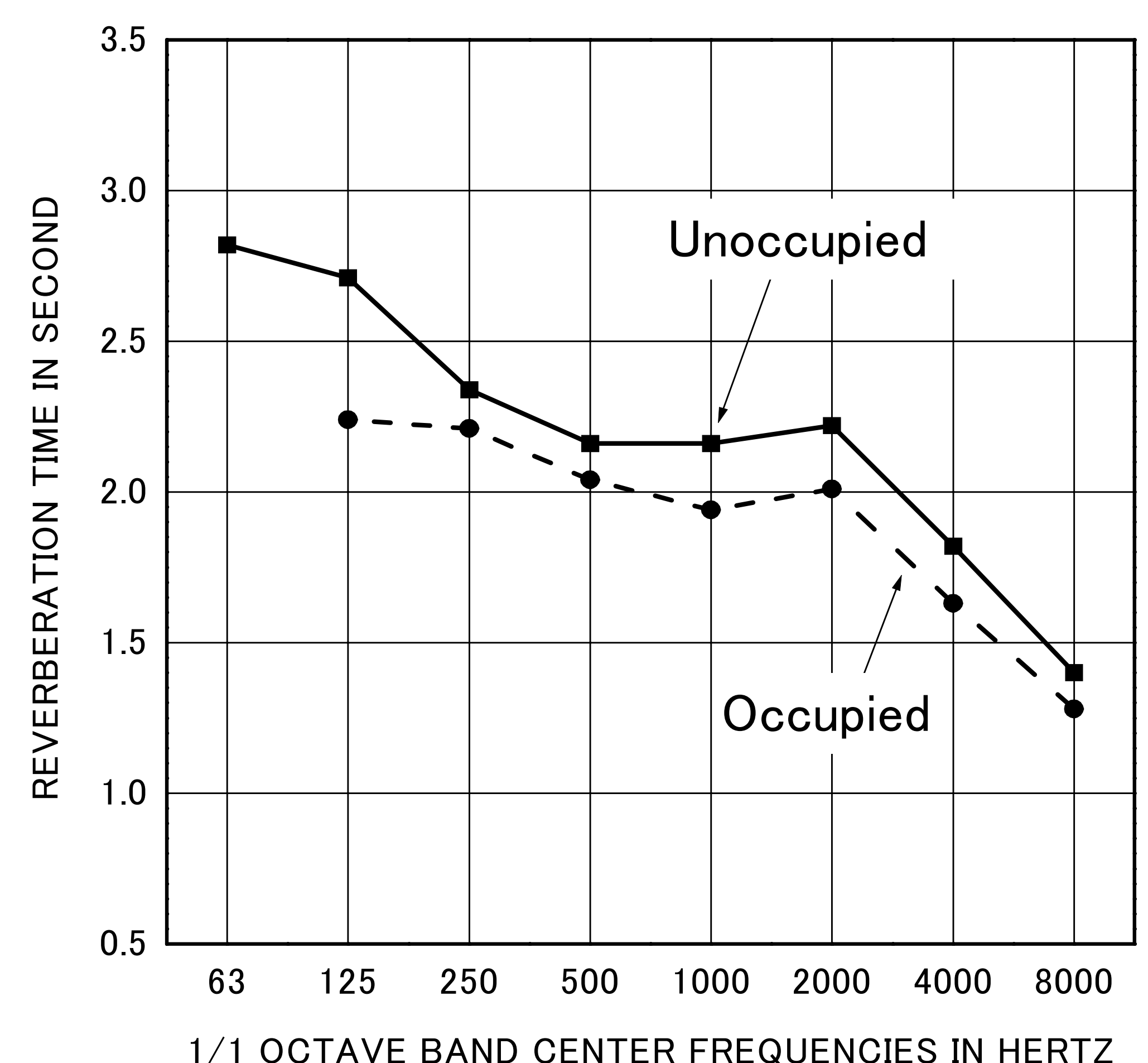
Organ : 69 stops (Karl Schuke, Germany)

Noise Level : NC - 15

Other Facilities : Theater (720 seats)

Total Cost : 19,019 Million JPY

Total Floor Area : 29,754 SM



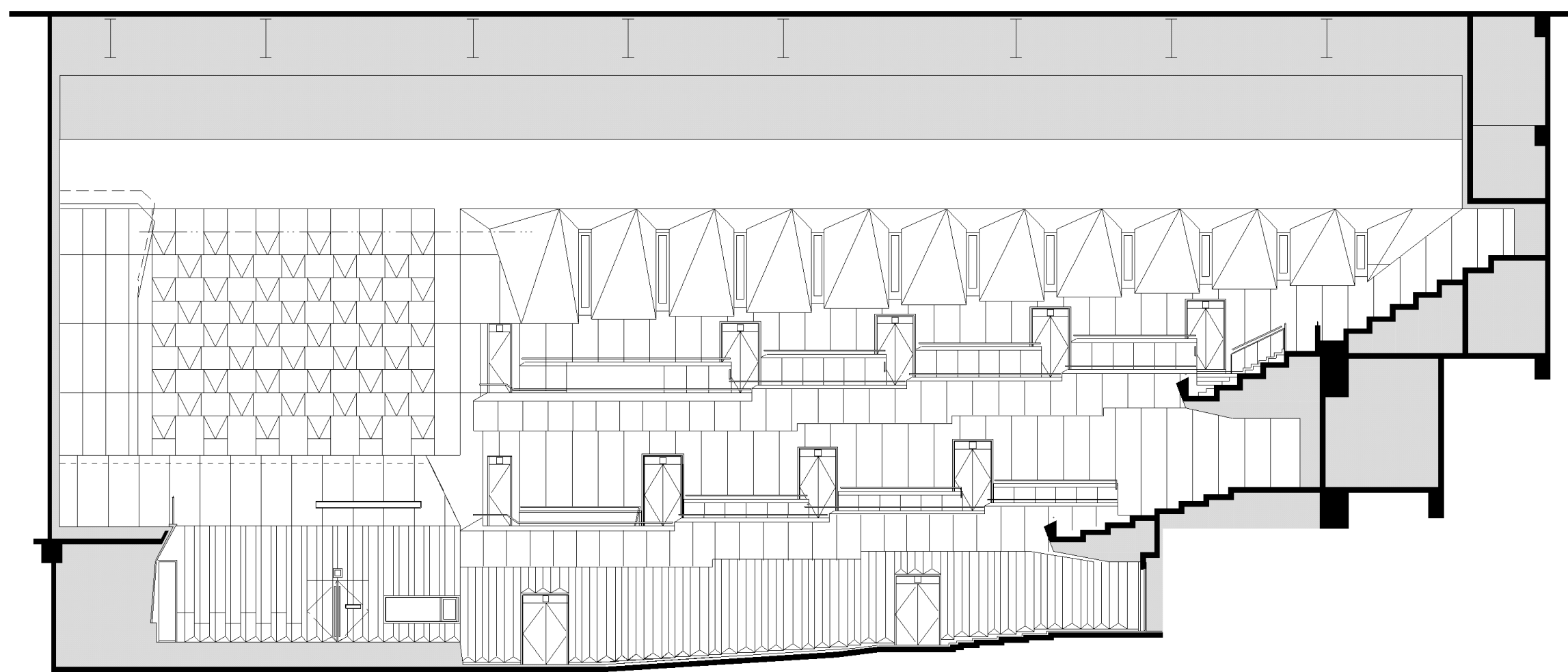
REVERBERATION TIME

# ISHIKAWA ONGAKUDO CONCERT HALL

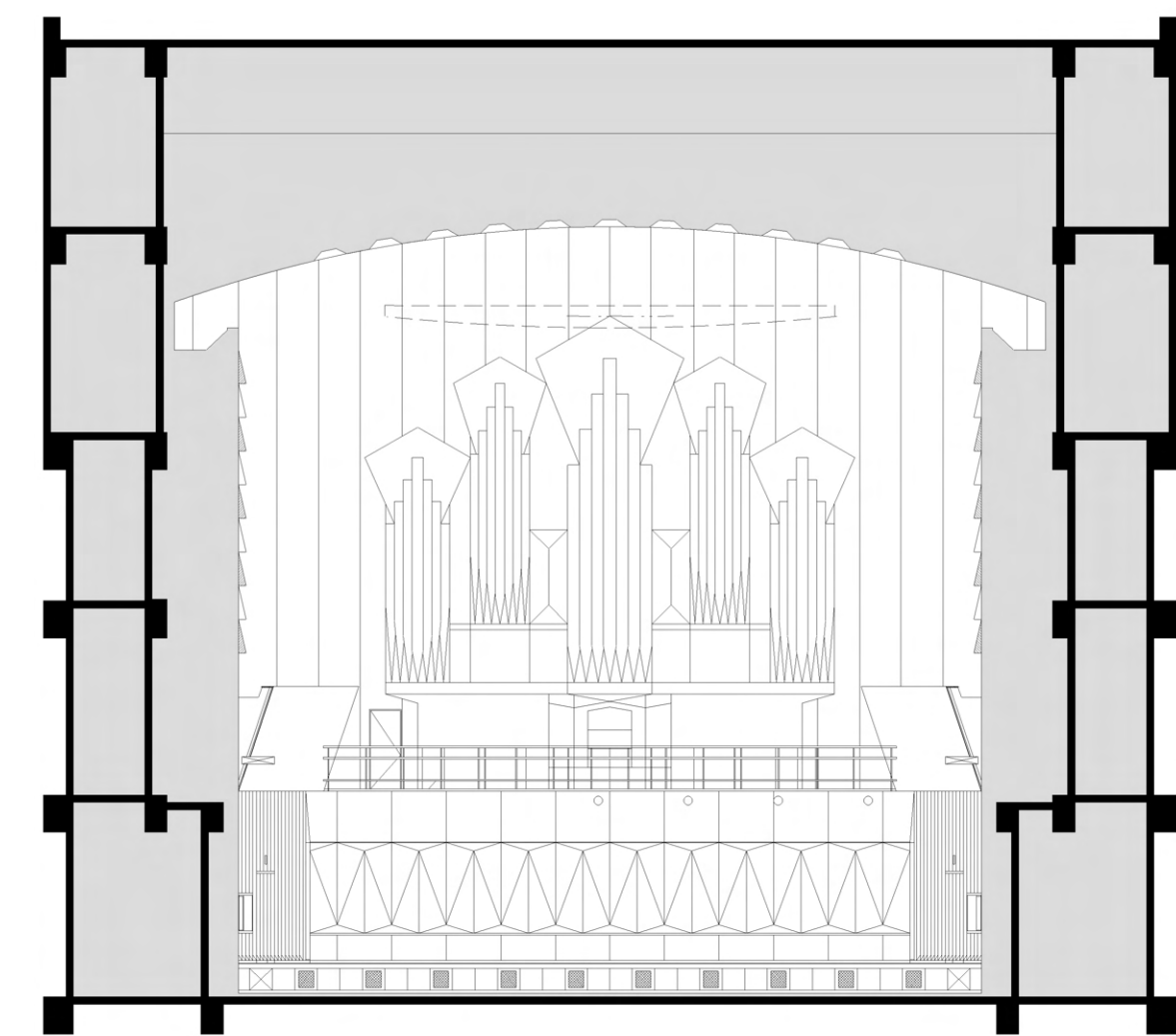
KANAZAWA, JAPAN

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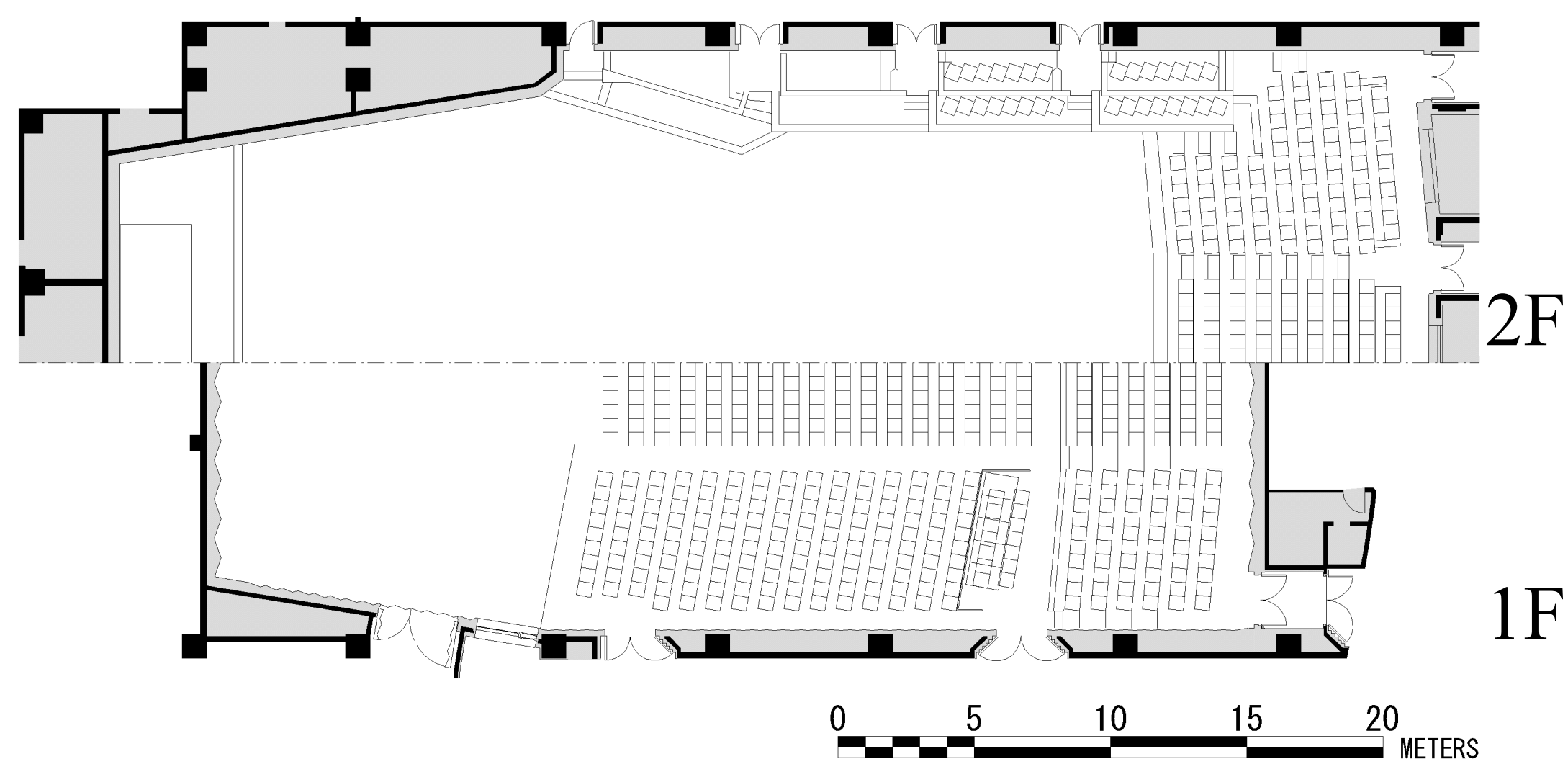
NAGATA  
ACOUSTICS



LONGITUDINAL SECTION



TRANSVERS SECTION



PLAN



Theater for Japanese traditional performance

