Higashi-Murayama, Tokyo: Shoju-en, Shosei-kai

PHOTO

1. Characteristics of the fire

A fire broke out from the linen closet within Shoju-en, a special nursing home for the elderly. Within the facility were 76 residents, generally aged over 65 and many who were bedridden. The outbreak was discovered relatively rapidly with the sounding of an automatic fire alarm. Initial firefighting efforts, however, failed, and smoke filled rapidly. The result was a tragedy: 17 people, unable to escape, burned to death; 25 were injured.

2. Overview of the fire outbreak

(1) Date and time of outbreak

Approximately 23:20, Monday, June 6, 1987

(2) Detection

23:29, Monday, June 6, 1987 (emergency call to fire department)

(3) Under control

06:01, Monday, June 6 [[Tuesday, June 7?]] 1987

3. Overview of fire origin

(1) Location

2-25-2 Aoba-cho, Higashi-Murayama, Tokyo, Japan

(2) Building of fire origin

Shoju-en (special nursing home), Shoseikai (a social welfare foundation)

(3) Structure of building of fire origin, etc.

(1) Date of construction

March 15, 1979

(2) Additions/renovations

None

(3) Building utilization

Social service facility for the elderly (Category 6, 95 (ro))

(4) Building structure

Reinforced concrete, 3-story (fire resistant)

(5) Area

Building area: 698 m^2

Floor area: 2,014 m^2

(6) Building occupancy

a. Residents: 120

b. Employees: 27

(7) Occupants at the time of outbreak

a. Residents: 74

b. Employees: 2

(8) Area and utilization by floor

Floor	**Area**	**Utilization**
Tower	40 m^2	Machinery room
3	658 m^2	Resident rooms
2	658 m^2	Resident rooms
1	658 m^2	Medical room, Office, Cafeteria, Bathing room

Total	2,014 m^2	Rooms, Hall

(4) Firefighting equipment, etc.

(1) Firefighting equipment

Fire extinguishers, interior fire hydrant

(2) Alarm devices

Automatic fire alarm, emergency broadcast system

(3) Evacuation facilities

Exit lights, escape slides (2nd, 3rd floors)

(4) Other facilities necessary for firefighting

None

(5) Fire prevention system

(1) Fire prevention officer

Appointed

(2) Fire prevention plan

Presented June 1979

(3) Fire drills

Comprehensive drill conducted twice in 1986 and once in 1987. Furthermore, partial drills conducted 7 times in 1986 and 3 times in 1987.

4. Weather conditions

(1) Weather

Clear

(2) Wind direction, speed

Southerly, speed 3.0m/s

(3) Temperature, humidity

Temperature: 24.0ºC; humidity: 46.0%

(4) Weather warnings, bulletins, etc.

None

5. Cause of fire

(1) Ignition source

Unclear

(2) Route

Suspicion of arson

(3) Ignited substance

Unclear

6. Fire damage

(1) People

(1) Fatalities

17 people (3 males, 14 females)

(2) Injuries

25 people (7 males, 18 females)

(2) Property (1) Building where the fire emerged

a. Extent of fire loss

Half loss

b. Area of fire loss

450 m^2 of 658 m^2 of 2nd floor

c. Monetary loss

71,666,000 yen

(2) Other buildings

None

7. Fire route (progression)

(1) Overview of outbreak location

The fire broke out in a 2nd-floor linen closet. It was night at the time, and no one was in the area.

(2) Situation up to the outbreak

Unclear.

(3) Progression up to fire detection

Care Attendant A started her shift at 17:00. She went on an inspection round at around 23:30, stepping out into the hallway from the 2nd-floor care attendants' station. An automatic fire alarm (zone bell) sounded at just that time. She went back into the station to check the control panel, where she found that a warning lamp was lit. A look at the main control panel on the 1st floor showed that warning lamps for 5 or 6 locations were lit. Proceeding to the front of the linen closet to check, she saw smoke coming out of a high window in the door, confirming that there was indeed a fire.

(4) Notification of fire department

Care Attendant A and Care Attendant B confirmed, as above, that there was a fire in the linen closet, whereupon Care Attendant B went back to the 2nd-floor attendants' station and placed an emergency call to the far department.

(5) Initial firefighting attempts

After telling Care Attendant B to notify the fire department, Care Attendant A, who discovered the fire, picked up 2 powder fire extinguishers placed in the hallway and went back toward the linen closet. She sprayed the fire extinguishers toward the high window from which the smoke was coming,

but to no effect.

(6) Fire spread

Because of the ineffectiveness of initial firefighting efforts, the flame spread rapidly.

(7) Evacuation

Most of the residents were people that had trouble moving on their own. Those who were able to evacuate to the veranda by themselves were rescued by firefighters. Also, residents on the 1st and 3rd floors were evacuated to safety by firefighters.

(7) Activities of internal firefighting unit

As there were only 2 people on duty at the time of the outbreak, its discovery was delayed and evacuation, etc., could not be carried out effectively.

(8) Fatalities

The fire spread rapidly because of the failure of initial firefighting efforts. Almost all the residents of the 2nd floor were bedridden and thereby unable to walk on their own. Twelve died, unrescued, in their beds. Five more were rescued by firefighters but later died in hospital.

8. Activities of firefighting units

(1) Dispatched units, etc.

(1) Dispatched vehicles: 70 (on station), 13 (emergency assignment)

(2) Dispatched personnel: 315 (on station), 168 (emergency assignment)

(2) Firefighting and rescue activities

(1) Firefighting activities

The first firefighters to arrive on the scene observed smoke emerging from 2nd- and 3rd-floor windows together with people awaiting rescue. While spraying water to protect those people and themselves, the firefighters entered the building and attempted rescues. They succeeded in rescuing 35 people from the 3rd floor and 23 people from the 2nd floor, lowering some with triple-extension ladders and carrying out others by internal stairways from rooms and verandas.

9. Problems, lessons

(1) While there were escape slides that allow direct descent from balconies, they were not usable, as a considerable gap between the verandas (balconies) and living quarters prevented residents from going out onto them.

(2) After the failed attempt at initial firefighting with extinguishers, no attempt was made to fight the fire with interior hydrants.

(3) Only 2 employees were on duty that night. While other employees were contacted to come and help with the emergency, it generally took them about 30 minutes to arrive. No system had been established for initial nighttime reaction (firefighting, evacuation, etc.) for this facility, which housed many elderly people who were unable to evacuate on their own.

(4) Futons and other betting within the linen cabinet caught on fire, and this led to a large conflagration. This points to the necessity of using fire-resistant items.

(5) A failure for smooth response from fire discovery to initial firefighting, evacuation, and so on points to a need to reinforce nighttime firefighting systems.

10. Other

The following measures were taken as a result of lessons learned from this fire.

(1) To promote the safety of residents of hospitals, social service facilities, and the like, portions of the fire code were amended, with said revisions taking effect April 1, 1988. Also, with regards to hospitals/social service facilities, requirements for sprinkler system installations were tightened. Under this revision, the total floor area requirement was lowered from 6,000 m^2 or above to 1,000 m^2 or above.

(2) A manual was prepared in 1991 to provide guidance for nighttime fire control systems at hospitals and social service facilities and, by that, to strengthen the fire-prevention capabilities of such hospitals/facilities.

11. Documents

11. Materials

Figure 1: Site plot

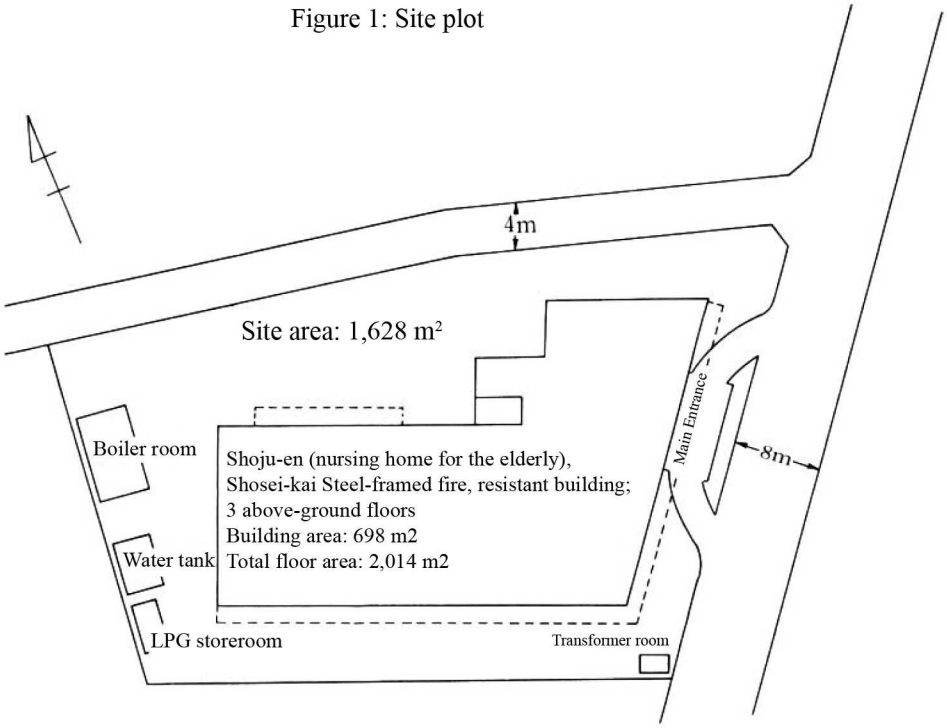


Figure 2: Floorplan (1st floor)

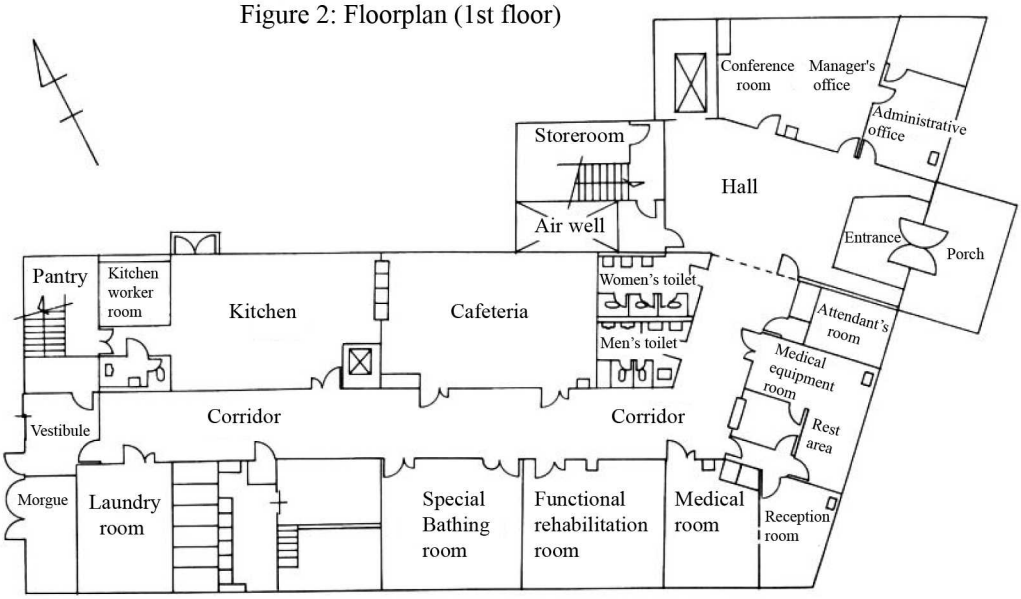
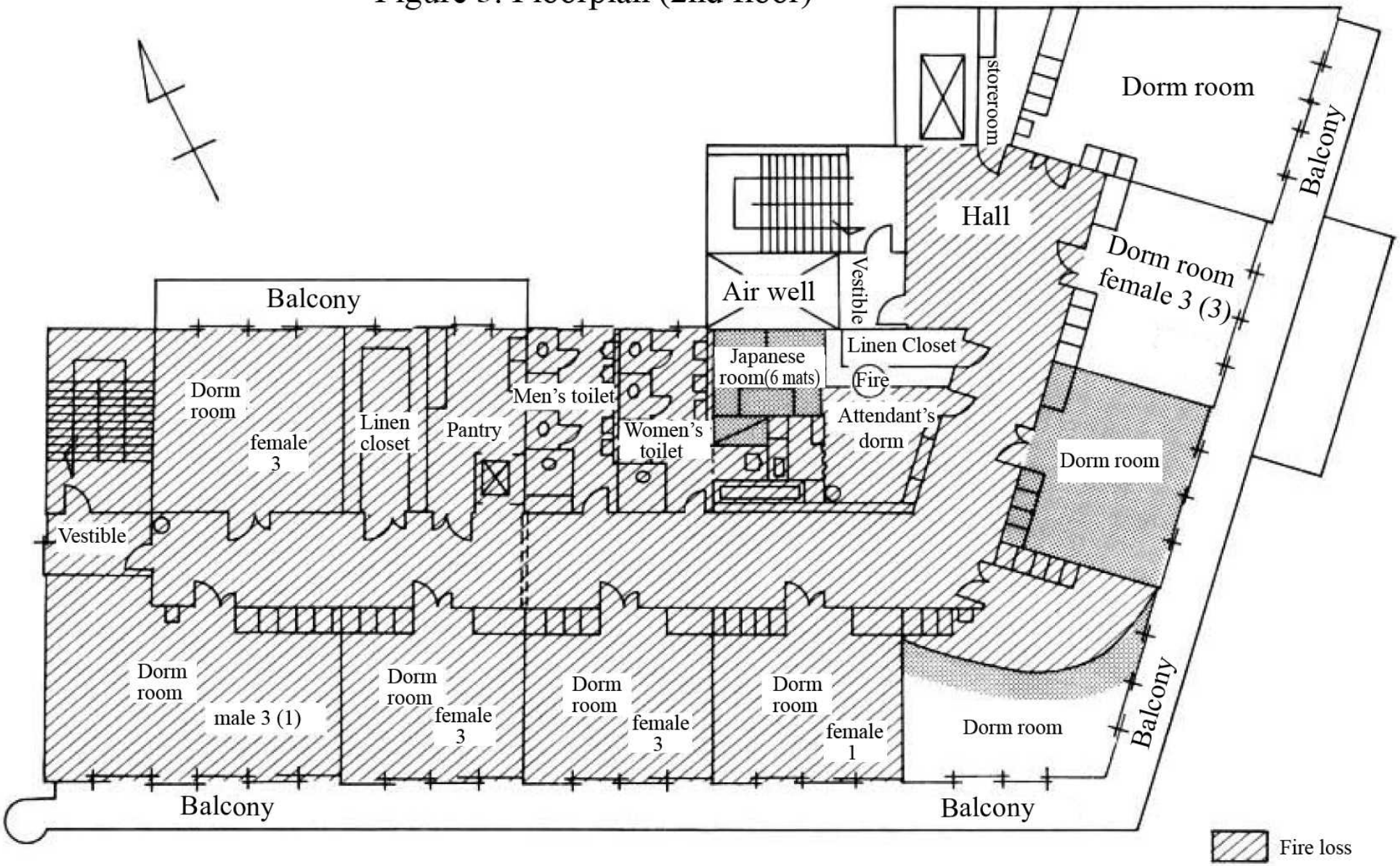
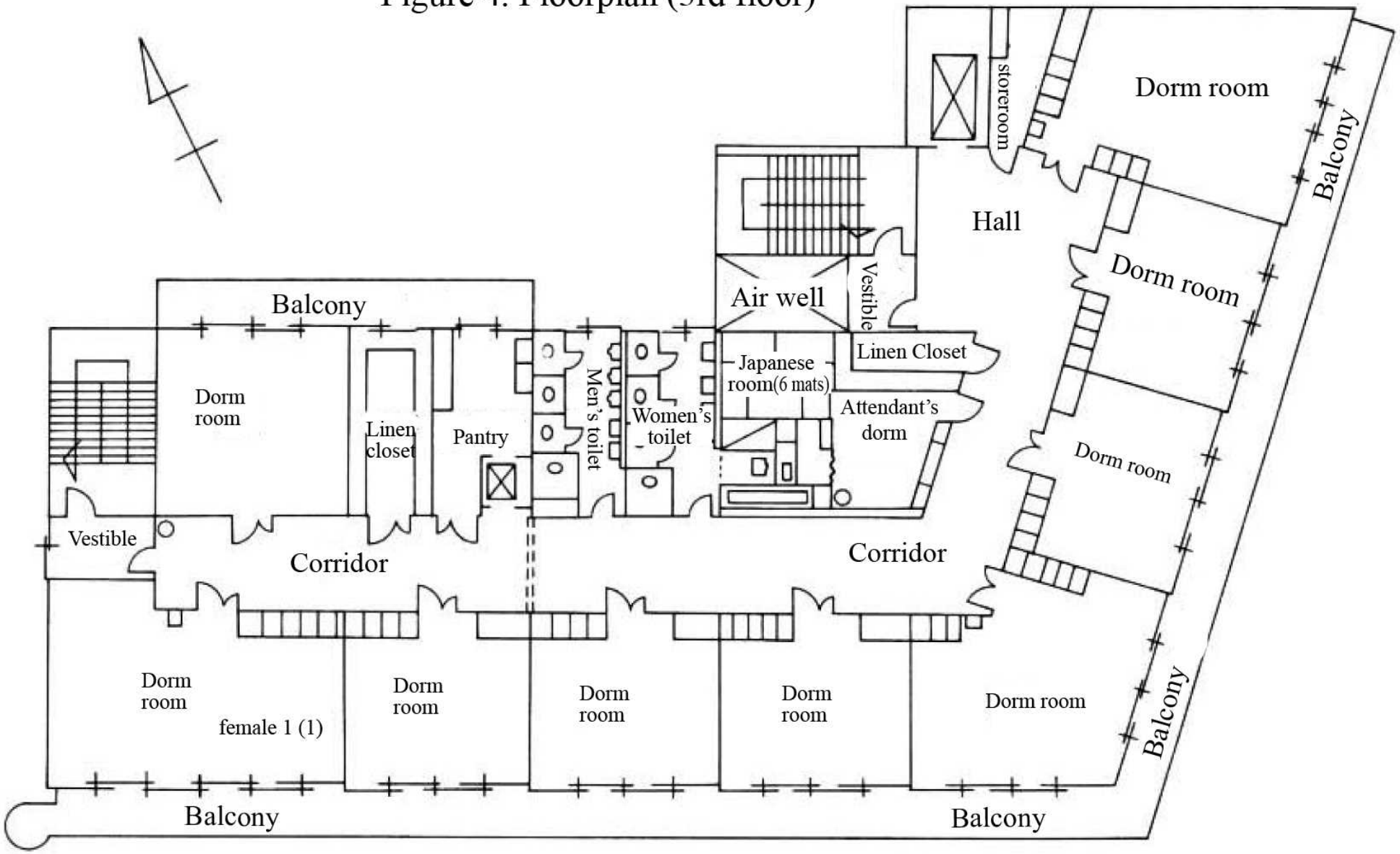


Figure 3: Floorplan (2nd floor)



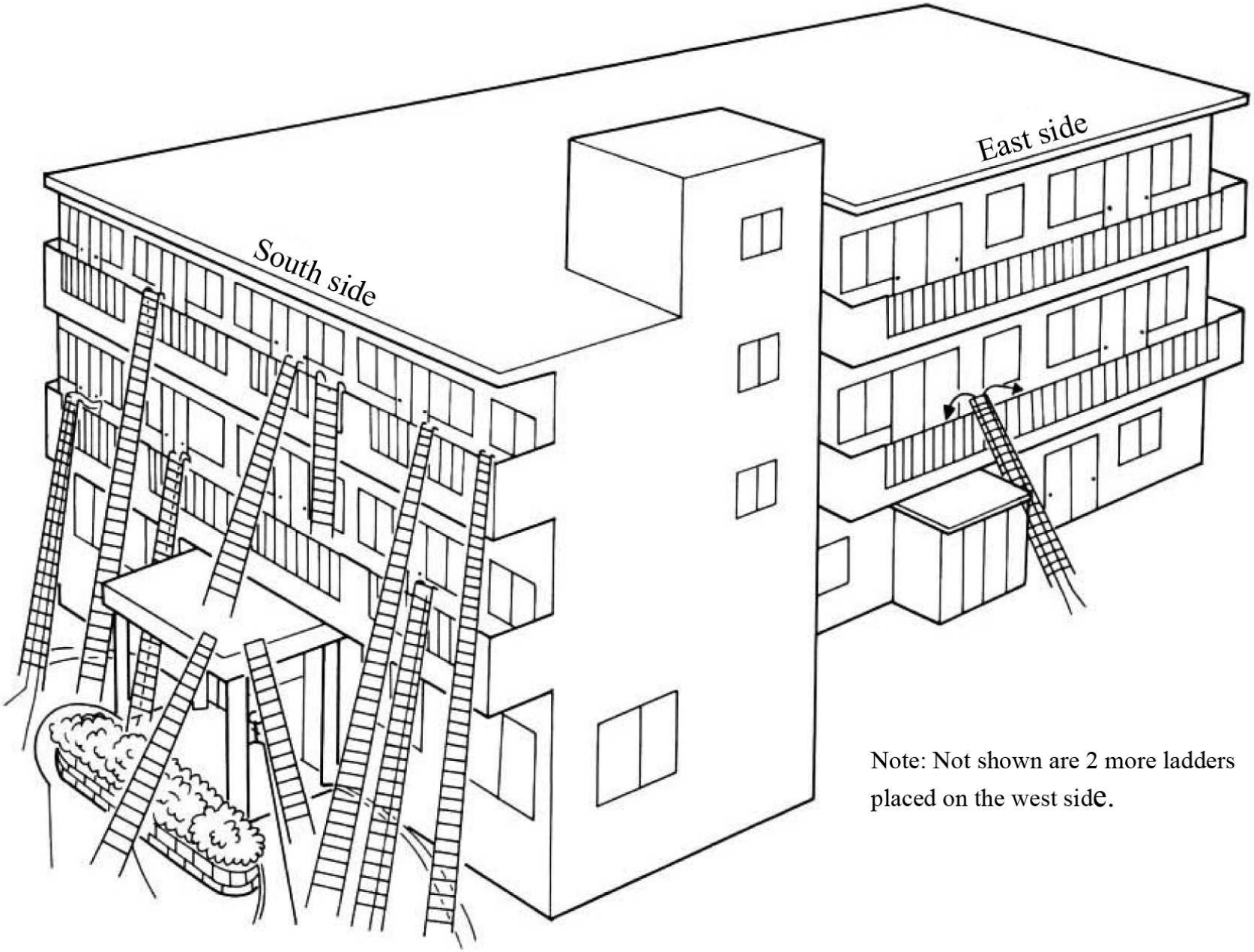
Note 1: "Male" or "Female" indicates a fatality. The number afterwards indicates the number of fatalities (this number includes those who later died at a hospital, with that number enclosed in parentheses)).

Figure 4: Floorplan (3rd floor)



Note 1: "Male" or "Female" indicates a fatality. The number afterwards indicates the number of fatalities (this number includes those who later died at a hospital, with that number enclosed in parentheses)).

Figure 5: Isometric drawing
(Placement of ladders from you from upper southeast corner)



Note: Not shown are 2 more ladders placed on the west side.