Building Name Address	Use (as per FSA Annexed Table 1)	Date and Time of Incident	Structure and Stories Area	Extent of Damage (Damaged Area/ Total Area)	No. of Casualties
Kietsu Building 3-21-9 Shinbashi, Minato-ku, TOKYO	Complex (16) a	Jan 10, 1976 Breakout at 00:10 (approx) Detected at 00:14 Notified by emergency call Extinguished by 02:01	Fire resistive 6 stories above ground and 2 below Building area 124.1 m² Total floor area 934.6 m²	All, **Partial**, Half, Small 811 m² (50%)	Fatalities 1 Injured 12 (0)

I. Summary of Fire Incident

(1) Summary

In the early morning, the fire that emerged from the 3rd floor burned 100 m² of that floor. The firefighters rescued 3 employees and 13 guests who were trapped on the 4th and 5th floors. The fire resulted in 1 fatality and 12 injuries. The cause of the fire was a faulty fire compartment in the pipe duct space from which smoke rapidly ascended to the upper floors. In addition to an inactive fire alarm and barred windows, this building had many issues with the fire prevention system.

(2) Conditions per Floor

Floor	Total area	Damaged area	Use (Purpose)	No. of persons	No. of fatalities	Fire escape equipment	Firefighting equipment
	m²	m²				Fire escape equipment (rope ladder)	Fire extinguishers 1 indoor fire hydrant per floor from the 1st to 6th floors Automatic fire detection system Guiding lights
6	88.07		Locker room				
5	101.04		Turkish bathhouse	11	1		
4	125.0		Turkish bathhouse	14			
③	124.1	100	Storage				
2	〃		Hostess bar				
1	〃		Hostess bar				
B1	〃		Office	6			
B2	〃		Machine room, Kitchen				
Total	934.61	100		31	1		

(3) Origin of Fire

(Floor, Room, Part, Combustibles, Habitable/Non-habitable rooms, Present/Absent)

Near the 3rd floor (storage) entrance.
Since May 1973, the 3rd floor was being used as storage for tables and chairs from previous business. The fire emerged near the unlocked entrance door to the escape stairs inside the storage area.

(4) Cause of Fire

Unknown
The investigator suspected arson based on the old tables that were deliberately set on fire near the entrance; however, there was no evidence to determine the exact cause of the fire.

(5) Fire Propagation Path

(Location of Fire Source)	(Propagation from Source)
Near the 3rd floor (storage) entrance	Old tables and chairs inside the storage area

The extent of the fire damage was contained within the 3rd floor but the smoke quickly filled the upper floors and blocked the escape route. The plywood ceiling of the 3rd floor collapsed because of the fire, and throughout that portion, the smoke traveled inside the pipe space to the upper floors and drifted into the space between the slab and ceiling of each floor. Then, the smoke that exited from the inspection windows of the HVAC duct and the faulty slab filled each room and hallway. In addition, smoke ascended through the clearances where the ducts were passing through the slabs on the 3rd and 4th floors. Then via the HVAC duct that was vacuuming up the air blown by the nearby fan, the smoke propagated inside bathrooms and the hallway on the 4th floor. The smoke also penetrated through the clearance around the fire door to the escape stairs and traveled inside the stairwell. A large amount of smoke ascended to the 5th and 6th floors via the inside stairs that were not protected by a fire compartment system.

- Main Reasons for Propagation of the Fire
  - Large amounts of combustibles (old chairs and tables)
  - Ineffective attempt to extinguish the fire in the early stage.
- Smoke Propagation Path
  - Pipe space with faulty fire compartment
  - Clearance around the exhaust air duct that was passing through the slab
  - Clearance around the fire door to the escape stairs
  - Local stairs that were not protected by a fire compartment system

II. Summary of the Building

(1) Built

Construction, Completion, and Major Renovations

Three alterations of use after the building was inspected for the first time upon completion.
(Construction agreement) June 11, 1962 (Inspection upon completion) July 8, 1964

Fire Prevention Management

(2) Vertical Shafts

Stairwells	[X]	Duct spaces	[X]
Elevators	[X]	Pipe shafts	[X]
Escalators	[ ]	Other ( )	[ ]

- Faulty fire compartment in the pipe space.
- Incomplete sealing treatment on the slab where the duct was passing through.

(3) Fire Prevention

- No fire-prevention manager.
- No fire defense plan after the alternation of use.
- Corporative fire management report was submitted.
- The fire door to the escape stairs had a faulty self-closing door.
- No fire escape equipment on the 4th and 5th floors.
- No fire-retardant treatment on the stairs or carpet.
- No inspection of the firefighting equipment.

(4) Fire Compartment

There was faulty clearance around the fire doors to the escape stairs on the 3rd and 4th floors.

(This clearance allowed the smoke to penetrate and propagate.)

(5) Firefighting Equipment

- The automatic fire detection system was in the fire room which no-one was using anymore and the audio alarm was inactive.
- Faulty magnetic switches on the indoor hydrant pumps (1st and 2nd floors).
- Somebody removed the fire escape equipment from the 4th floor and left it in front of the exit doors to the rooftop.

III. Actions Taken after the Fire was Detected

(1) First Detected

- **Detected by** (Employee U)
- **How and why** (Smoke)
- **Action taken** (Evacuated via the escape stairs)

According to testimony given, the accounting manager (age 51) and the assistant manager were at the front desk when they noticed smoke emerging from the escape stairs. At that time, there were 3 guests in the waiting room. In a few minutes, the electricity to the room lighting went down, but the elevator was still working and the 3 guests used the elevator to evacuate. The accounting manager testified that the sales manager of the hostess bar told him "The 3rd floor is on fire" when he came down the escape stairs to the 1st floor. Based on this testimony, the accounting manager who was on the 4th floor was the first person that noticed the smoke and knew that something was wrong, but he did not do anything specific about the smoke coming from the fire floor.

(2) Emergency Call

Emergency Call Yes [ ] ( ) Time elapsed since the discovery (4) minutes

No [X]

The owner (age 31) of the coffee shop, which was located on the 1st floor of the building across from the south side of the fire building, noticed smoke drifting into his shop from outside. He sent a waiter outside to find out where the smoke was coming from. The waiter came back and told him that there was smoke coming out of the Kietsu Building, so the owner made a 119 call from his phone in the shop.

(3) Initial Firefighting Activities

Initiated	Successful [ ] Failed [X] ° Extinguished timing [ ] ° Firefighting difficulties [ ] ° Firefighting method [ ]	**(Reasons or Conditions)** Two police officers who were in a nearby police box noticed the fire because of the sound of disturbance that came from outside. They ran up the escape stairs of the fire building and tried to open the door to the burning 3rd floor. They rushed back to the 1st floor and extended the hose from the indoor fire hydrant to the 3rd floor, but could not control the fire because the water pressure was low. So they extended another hose from the 2nd floor, but this hydrant did not have sufficient water pressure. These attempts by the police officers were the only efforts made to extinguish the incipient-stage fire.
Not Initiated	° Extinguished timing [ ] ° Firefighting difficulties [ ] ° Firefighting method [ ] ° Other [ ]	

(4) Summary of Firefighting Activities

(Obstacles or Difficulties in Fire Control)

° The fire building was surrounded by a decorative steel fence, which significantly affected firefighting activities.

° The narrow inside stairs was the only passage that the firefighters could use for the rescue operation in which they needed to rescue many evacuees, which made the rescue operation difficult.

(5) Evacuation

Means of Escape (No. of Persons)	Obstacles to Evacuation
° Stairs [X] (15) ° Elevators/Escalators [X] (3) ° Escape equipment [ ] ( ) ° Directly to ground from windows or openings [ ] ( ) ° Rescued [X] (13) ° Other ( ) [ ] ( )	° No windows [ ] ° Barred openings [ ] ° Locked emergency doors (Exits) [ ] ° Alarm system [ ] (Poorly controlled, Malfunctioned, Not installed) ° Power outage [ ] ° Other [ ]

On the 4th floor, 4 private rooms were all occupied by 1 attendant and 1 guest each. In addition, there were 2 employees, 3 guests, and 1 attendant on the floor. Thus, there were 14 persons present in total. They escaped in various ways: (1) via the escape stairs (1 employee, 3 attendants, and 1 guest), (2) via the elevator (3 guests), (3) escaped to the rooftop and were rescued (1 employee), (4) waited for rescue inside a private room (1 guest), (5) dazed from smoke but rescued (1 attendants and 2 guests), and (6) ran back to her room on the 5th floor but waited for help in somebody else's room and was rescued (1 attendant). On the 5th floor, 5 private rooms were all occupied by 1 attendant and 1 guest each and 1 guest was wandering around. Thus, there were 11 people on the floor in total. They also escaped in various ways: (1) via the escape stairs (2 attendants and 2 guests), (2) escaped to the rooftop and was rescued (2 attendants), (3) dazed from smoke but rescued (2 attendants), (4) rescued from the balcony (2 guests), and (5) waited for help in a private room and was rescued (1 attendant).

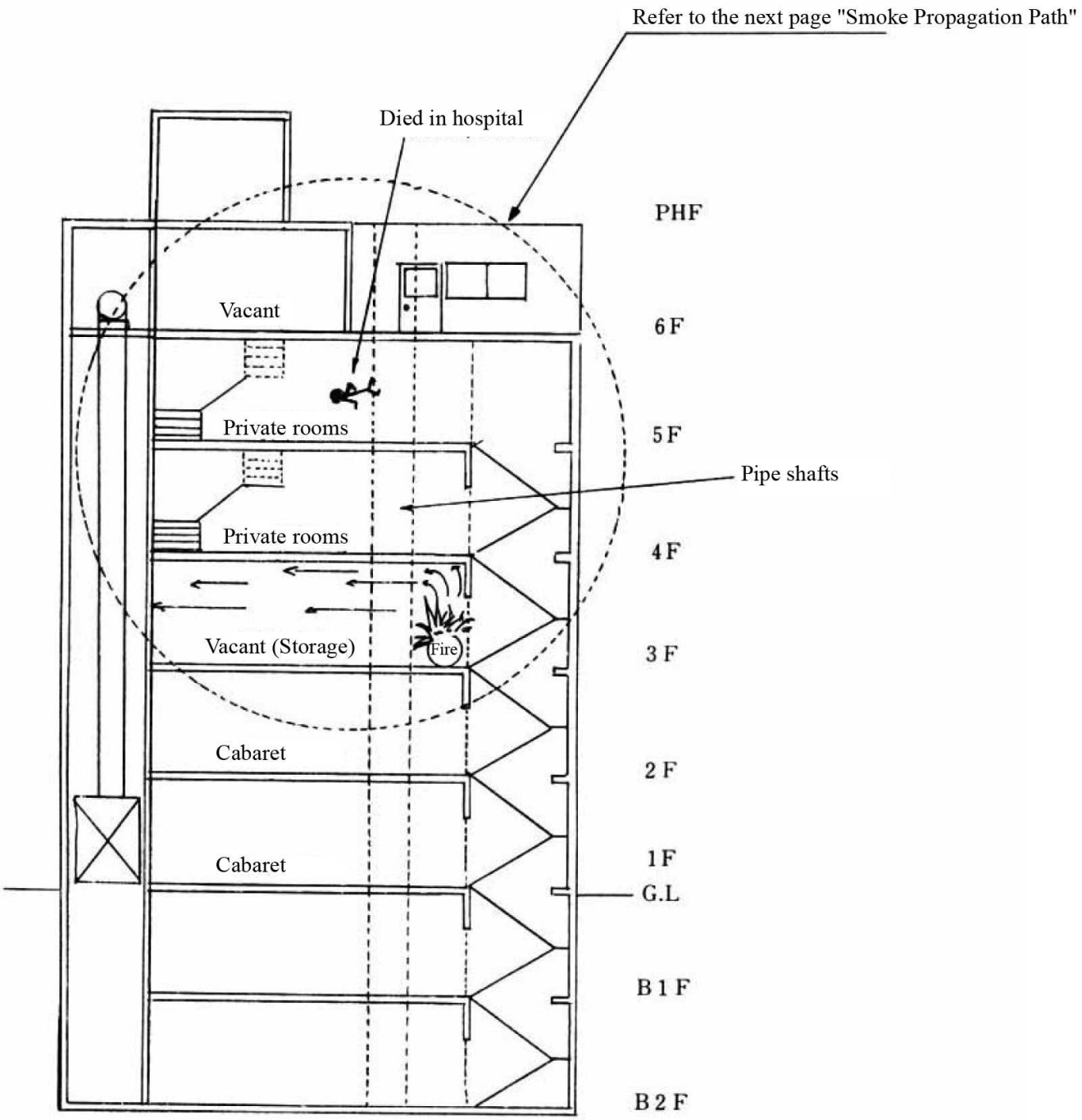
(6) Causalities

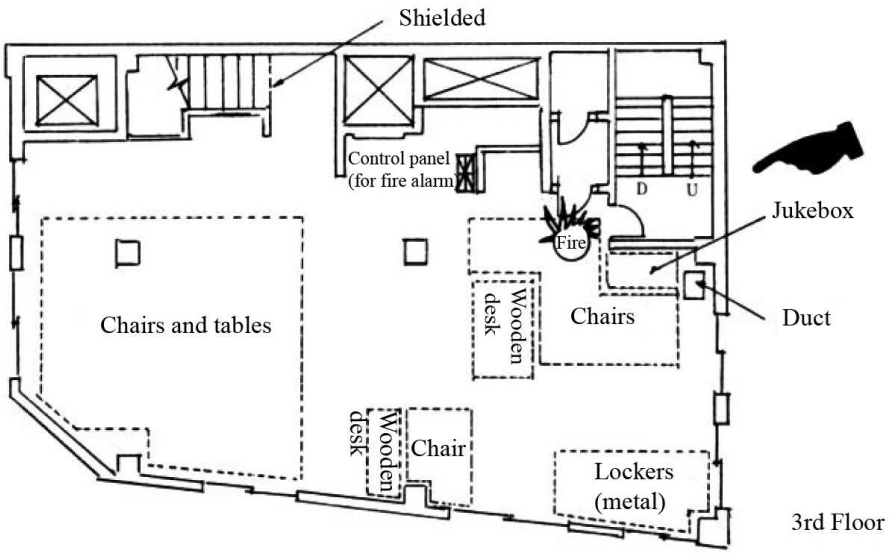
	Obstacles to Evacuation
Healthy individuals 1 (Drunk persons) Individuals in need of assistance Infants Elderly Handicapped Patients/ill persons	° No windows [ ] ° Barred openings [ ] ° Locked emergency doors (Exits) [ ] ° Alarm system [ ] (Poorly controlled, Malfunctioned, Not installed) ° Power outage [ ] ° Other [X] (Power outage)

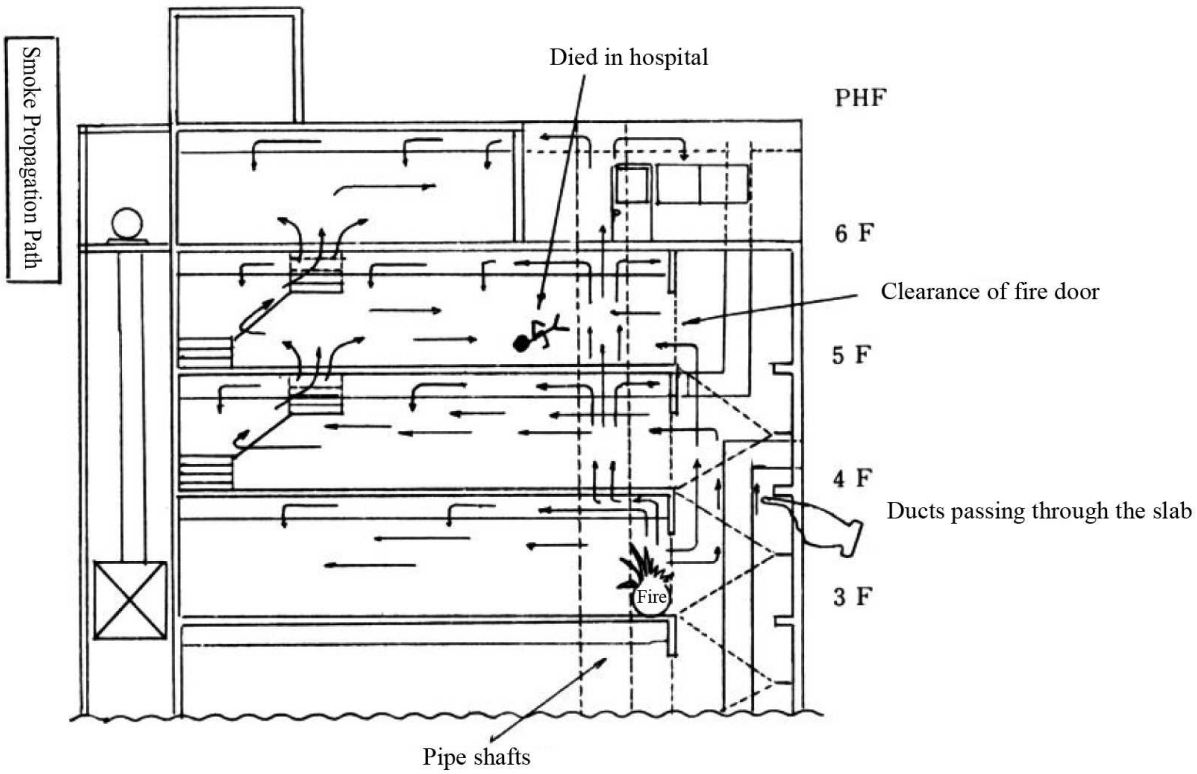
An attendant (age 25) was smoking in her private room and noticed smoke on the ceiling that was coming from somewhere and heard somebody screaming in the hallway. When she opened her door, the hallway was dark and filled with smoke. With her drunk guest (age 38), she walked toward the escape stairs, but they became separated at some point. It appeared she went back to her room and became unconscious there. She died in hospital after being rescued by firefighters.

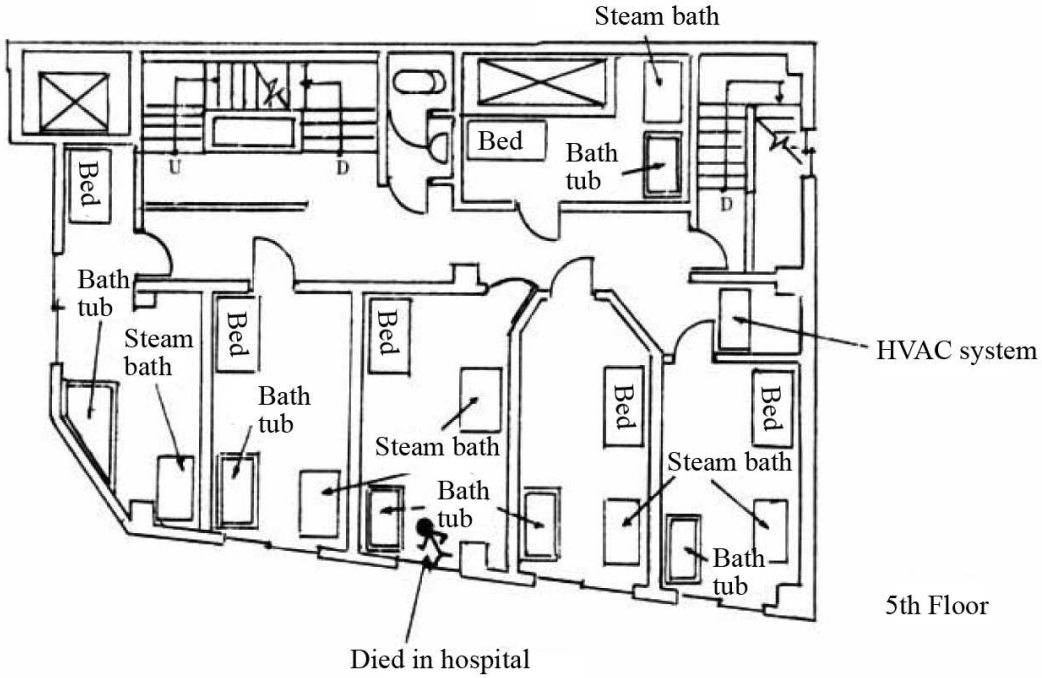
IV. Issues and Lessons Learned

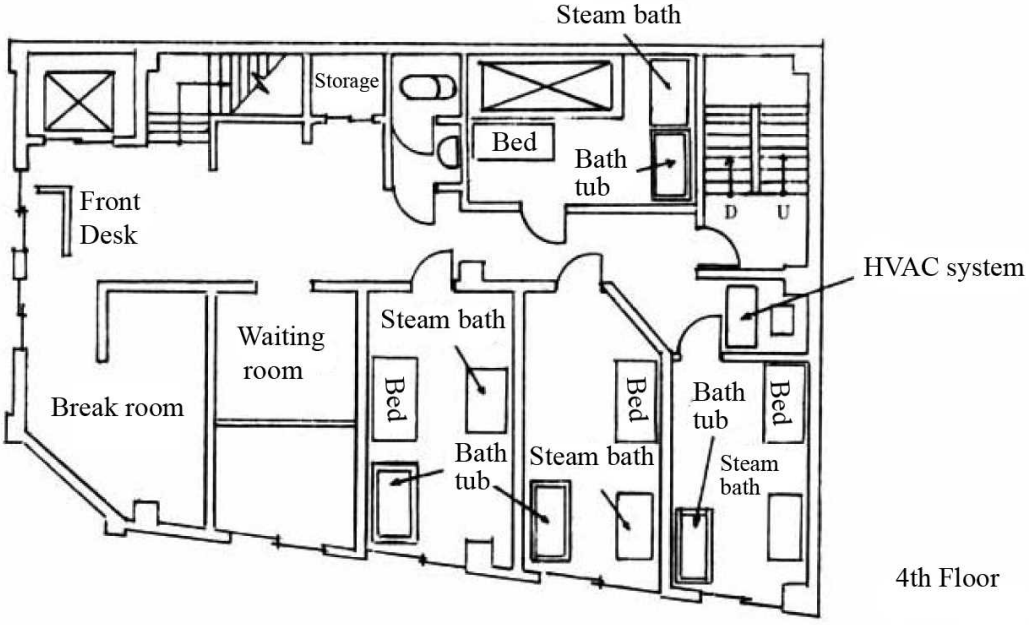
1. The automatic fire detection system was inactive (turned off) and the first person that noticed the fire selfishly evacuated without alerting anyone. In addition, people in the private rooms did not become aware of the fire until much later, which resulted in many casualties.
2. The only escape stairs became the smoke propagation path.
3. The private room attendants were unfamiliar with the floor layout (they did not even know where the exit door was to the rooftop).
4. Most of the guests were drunk and therefore their evacuation was slow.
5. The fire building was surrounded by a decorative steel fence, which significantly affected the firefighting operation.
6. The fire-preventive measures were defective. The unsealed clearances where the HVAC ducts and the water pipe shafts passed through became the smoke propagation path, which adversely affected the evacuation.

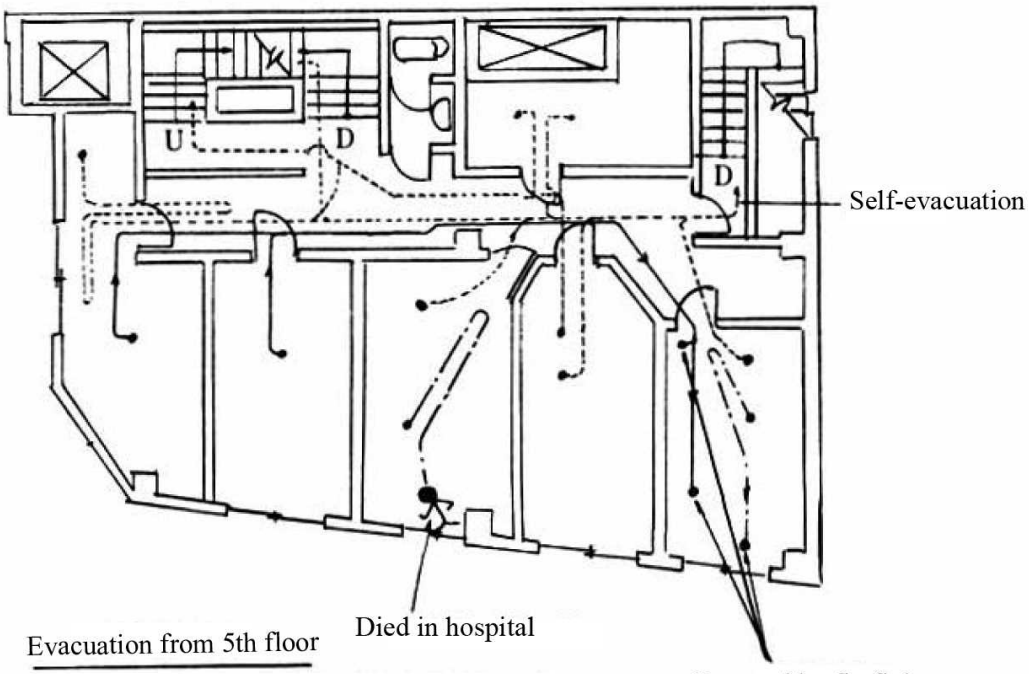

Refer to the next page "Smoke Propagation Path"
Died in hospital
PHF
Vacant
6 F
Private rooms
5 F
Pipe shafts
Private rooms
4 F
Vacant (Storage)
Fire
3 F
Cabaret
2 F
Cabaret
1 F
G.L
B 1 F
B 2 F


Shielded
Control panel
(for fire alarm)
D
U
Jukebox
Fire
Chairs and tables
Wooden
desk
Chairs
Duct
Wooden
desk
Chair
Lockers
(metal)
3rd Floor


Smoke Propagation Path
Died in hospital
PHF
6 F
Clearance of fire door
5 F
4 F
Ducts passing through the slab
Fire
3 F
Pipe shafts

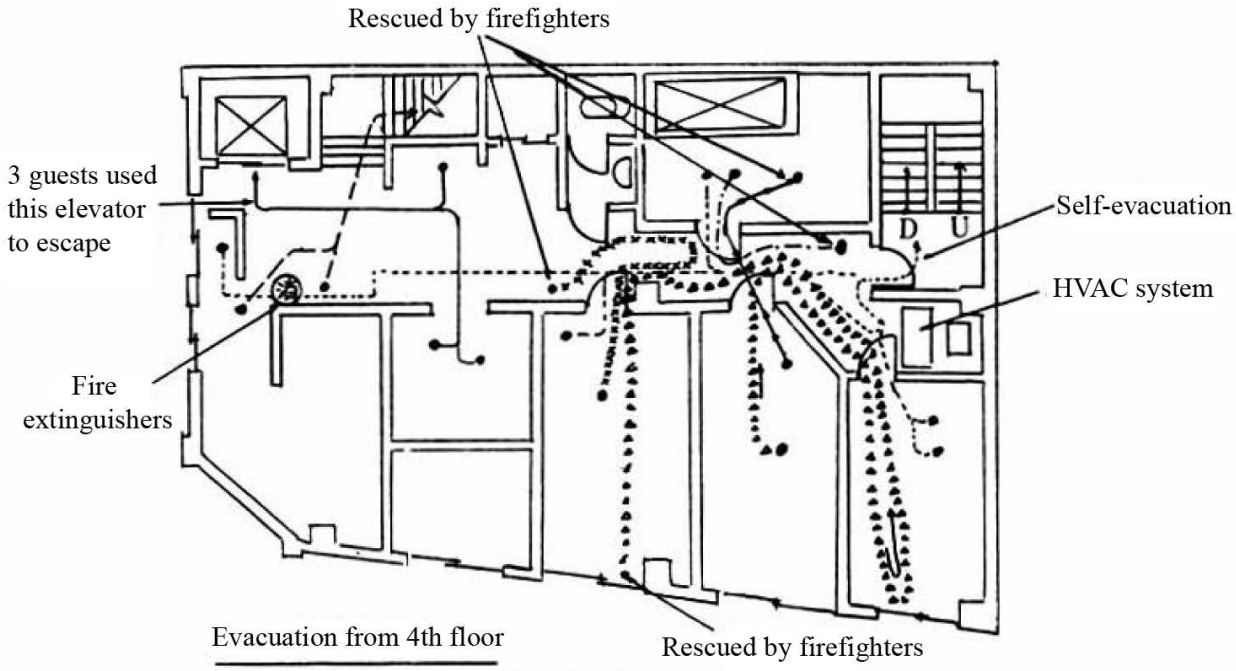

Steam bath
Bed
Bath tub
U
D
D
Bed
Bath tub
Steam bath
Bed
Bed
Bath tub
Steam bath
HVAC system
Bed
Bed
Steam bath
Bath tub
Bath tub
Died in hospital
5th Floor


Steam bath
Storage
Bed
Bath tub
Front Desk
D
U
HVAC system
Waiting room
Steam bath
Bed
Bed
Bath tub
Bed
Break room
Bath tub
Steam bath
Steam bath
4th Floor



Evacuation from 5th floor

Note: Refer to previous page for the room conditions



Evacuation from 4th floor

Note: Refer to previous page for the room conditions