

Building Name Address	Use (as per FSA Annexed Table 1)	Date and Time of Incident	Structure and Stories and Area	Extent of Damage (Damaged Area/ Total Area)	No. of Casualties
Mito Central Building 2-3-2 Izumi-cho Mito, IBARAKI	Complex (16) a	Dec. 26, 1970	Fire resistive 8 stories above ground and 2 below	All, Half, Partial, Small 10,476 m ² (86%)	Fatalities 2 Injured 18 ()
		Breakout at 14:30 (approx) Notified at 14:46 Noticed by fire watchtower Extinguished by 22:00	Building area 1,372 m ² Total floor area 12,112 m ²		

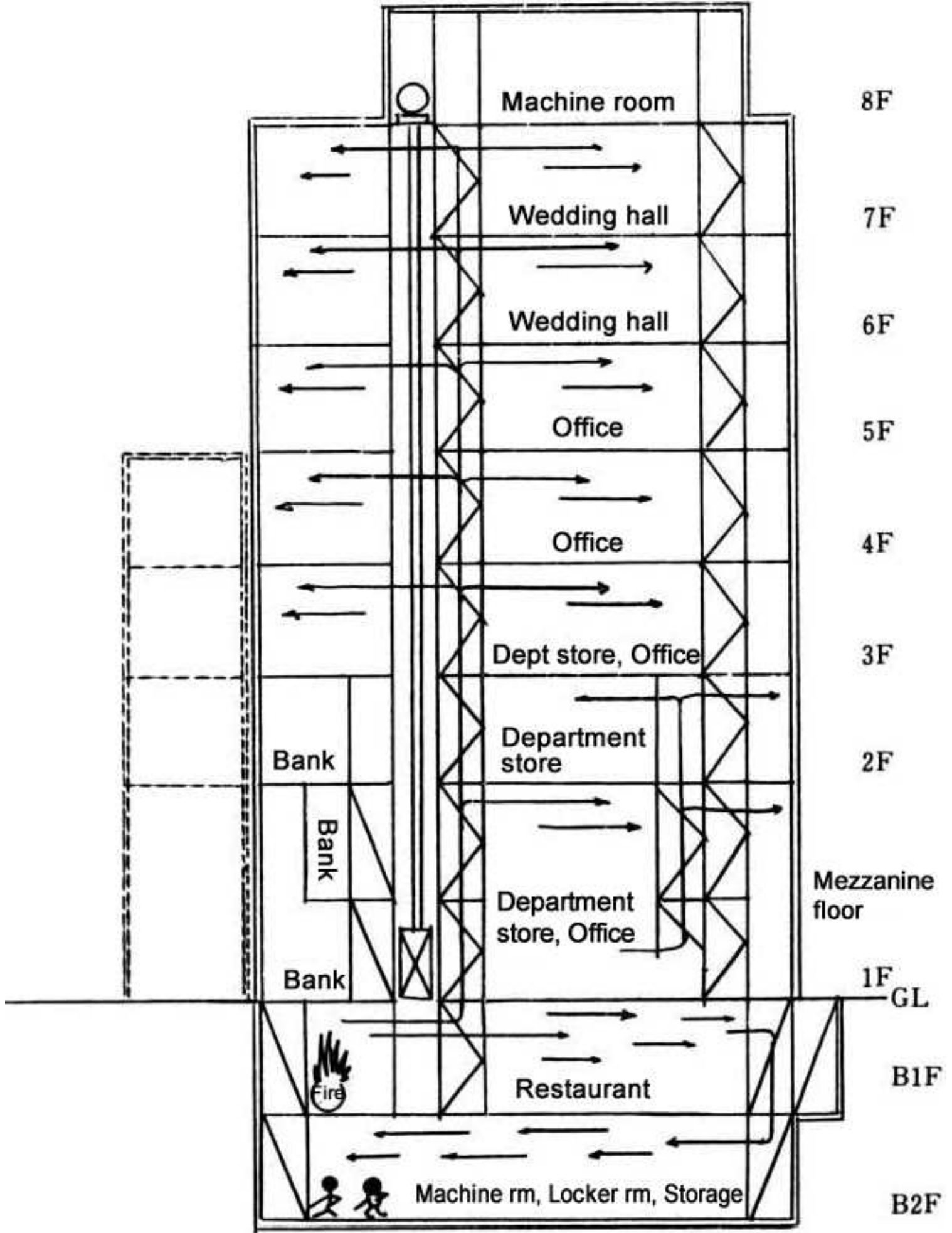
I. Summary of Fire Incident

(1) Summary	This fatal fire originated from the exhaust air duct of the kitchen on the 1st basement floor of a multi-tenant building that was located in a busy street that was crowded due to the end of year sales. Because of poor fire-safety management, the building was completely destroyed in the daytime and 2 employees died.							
(2) Conditions per Floor	Floor	Total area	Damaged area	Use (Purpose)	No. of persons	Fatalities	Fire escape equipment	Firefighting equipment
		m ²	m ²				Inside stairs (3 sets on B2 floor to 1st, 1 on 1st to 3rd, 1 on 1st to 7th, 1 on 1st to PH1st) 1 escape chute on 7th 1 slow descending machine on 5th 2 sets of metal ladders on 5 th	48 sets of indoor fire hydrants Automatic fire detection system Fire extinguishers
8	251.6		Machine room					
7	1,372.2	1,372.2	Wedding hall	155				
6	1,372.2	1,372.2						
5	1,372.2	1,372.2	Offices	53				
4	1,372.2	1,372.2		48				
3	1,372.2	1,372.2	Offices, Department store	61	Department Store Portion			
2	1,372.2	1,372.2	Department store			254		
1	1,313.1	914.7	Department store, Bank, Office	38				
(B1)	1,328.1	1,328.1	Restaurant	499				
B2	986.1		Machine room, Locker room, Electrical room		2 (1 male, 1 female)			
Total	12,112.1	10,476		1,110	2			
(3) Origin of Fire	(Floor, Room, Part, Combustibles, Habitable/Non-habitable Rooms, Present/Absent) <u>From the exhaust air duct of the restaurant kitchen on the 1st basement floor</u>					(4) Cause of Fire	Unknown	

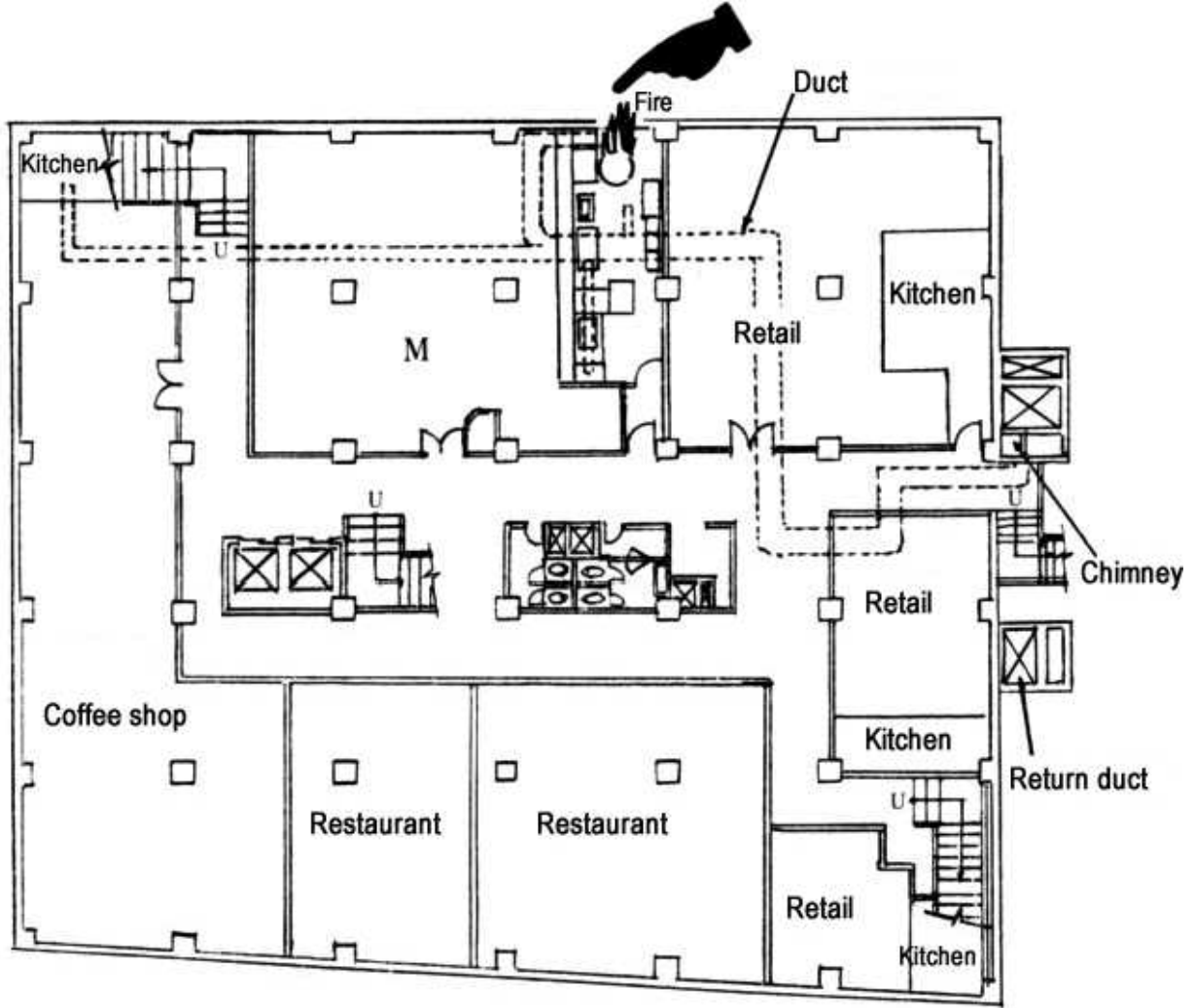
(5) Fire Propagation Path	(Location of Fire Source)	(Propagation from Source)	(Propagation to Other Floors)	(Propagation to Adjacent Bldg)											
	The exhaust air duct of the restaurant kitchen on the 1st basement floor	From the duct to the ceiling	Spread to the 1st floor through the stairwell with no fire compartment, and to the upper floors from the open ceiling, stairwell and vertical shaft	From the windows of the fire building to the adjacent building through a ventilation fan											
<p>The fire emerged from the exhaust air duct of the restaurant kitchen on the 1st basement floor and spread to the ceiling. The nearby stairs leading to the 1st floor were not fireproofed and the fire spread via these stairs to the sales floor of the 1st floor, before spreading higher to the 3rd floor through the open ceiling area. In addition, via the stairwells and clearances around the duct and pipe shafts, which were not properly fireproofed, the fire spread to the top floor. Notably, the bank on the 1st floor was perfectly fireproofed and therefore, the fire did not penetrate into the bank.</p>															
<p>○ Main Reasons for Propagation of the Fire</p> <ul style="list-style-type: none"> ○ The employees tried to extinguish the fire but the fire was beyond their control because it had reached the backside of the ceiling and therefore the fire propagated further. ○ There was no fire compartment (horizontally and vertically) and fire doors were left open for the evacuation. <p>○ Smoke Propagation Path</p> <p>The smoke that was produced in the kitchen spread in all directions and rapidly ascended the stairwells and elevator shaft that acted as a chimney. In addition, the smoke traveled continuously to each floor through the duct and clearances of the electrical/bathroom piping systems.</p>															
II. Summary of the Building															
(1) Built	Construction, Completion, and Major Renovations (Completion) September 1964														
	(2) Vertical Shafts		(3) Fire Prevention												
Fire Prevention Management	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Stairs</td> <td style="width: 10%; text-align: center;">[X]</td> <td style="width: 30%;">Duct Spaces</td> <td style="width: 10%; text-align: center;">[X]</td> </tr> <tr> <td>Elevators</td> <td style="text-align: center;">[X]</td> <td>Pipe Shafts</td> <td style="text-align: center;">[X]</td> </tr> <tr> <td>Escalators</td> <td style="text-align: center;">[]</td> <td>Other (garbage chute)</td> <td style="text-align: center;">[]</td> </tr> </table>	Stairs	[X]	Duct Spaces	[X]	Elevators	[X]	Pipe Shafts	[X]	Escalators	[]	Other (garbage chute)	[]	<ul style="list-style-type: none"> ○ No fire-prevention manager. ○ No fire defense plan. ○ No cooperative fire safety management. ○ No fire drill. ○ No voluntary inspection. ○ Security patrol by 2 guards in the daytime and 4 guards at nighttime. 	
	Stairs	[X]	Duct Spaces	[X]											
Elevators	[X]	Pipe Shafts	[X]												
Escalators	[]	Other (garbage chute)	[]												
<ul style="list-style-type: none"> ○ The clearances of the electrical wires and the ducts that were running directly from the 2nd basement to the 7th floor were not sealed off. ○ On the stairwell, the fire doors were left open (for evacuation), and above the fire doors, the backside of the ceiling was not compartmentalized. 															
(4) Fire Compartments		(5) Firefighting Equipment													
<ul style="list-style-type: none"> ○ The open ceiling running from the 1st to 3rd floors on the department store floor had no fire compartment for the 1,500 m² area. 		<ul style="list-style-type: none"> ○ The alarm sound was turned off on the control panel of the automatic fire detection system; therefore, no one heard any alarm when the fire broke out. ○ The guiding lights and the emergency alarm system were not installed in their proper places. ○ During the fire, the fire escape equipment on the 5th and 7th floors was not utilized. 													

III. Actions Taken after the Fire was Detected									
(1) First Detected	<ul style="list-style-type: none"> ◦ Detected by (A staff member of the restaurant kitchen where the fire broke out) ◦ How and why (He found flames after being alerted by an unusual sound) ◦ Action taken (He shouted "Fire!" and tried to extinguish the fire) 								
	<p>Around 14:30, when the kitchen staff member was washing dishes at the restaurant in the 1st floor basement, he heard a crackling sound coming from near the rice cooker behind him. He saw a growing flame, 50 cm in diameter, on the rice cooker chimney and the ceiling around the chimney, and shouted "Fire!" to alert people nearby.</p>								
(2) Emergency Call	<p>Emergency Call Yes <input checked="" type="checkbox"/> (Receptionist on the 1st floor) Time elapsed since the discovery (17) minutes No <input type="checkbox"/>]</p>								
	<ul style="list-style-type: none"> ◦ Around 14:46, a watchtower guard saw black smoke arising from the rooftop of the Shimazu Department Store that was located next to the Central Building, and he notified a watchtower operator. The operator called the Department Store; however, the Department Store answered that everything was fine. In the meantime, the watchtower guard reported again "The black smoke is getting worse". Shortly after, a female called them and said, "The restaurant M in the basement of the Central Building is on fire". ◦ The repairman of the Central Building noticed the fire and told the receptionist on the 1st floor to make a direct emergency call, which she did. 								
(3) Initial Firefighting Activities	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td style="width: 30%;"> Successful <input type="checkbox"/> Failed <input checked="" type="checkbox"/> </td> <td rowspan="2" style="width: 50%; vertical-align: top;"> (Reasons or Conditions) The restaurant staff immediately tried to extinguish the fire with water and fire extinguishers. At first it seemed that this had succeeded, but the flames emerged again from the ceiling of the hallway. They fought the fire with a hose that extended from the indoor fire hydrant, but they had to evacuate because of the intense flames, heavy smoke, and power outage. </td> </tr> <tr> <td style="text-align: center;">Initiated</td> <td> <ul style="list-style-type: none"> ◦ Extinguished timing [] ◦ Firefighting difficulties <input checked="" type="checkbox"/> ◦ Firefighting method [] </td> </tr> <tr> <td style="text-align: center;">Not Initiated</td> <td> <ul style="list-style-type: none"> ◦ Extinguished timing [] ◦ Firefighting difficulties [] ◦ Firefighting method [] ◦ Other [] </td> <td></td> </tr> </table>		Successful <input type="checkbox"/> Failed <input checked="" type="checkbox"/>	(Reasons or Conditions) The restaurant staff immediately tried to extinguish the fire with water and fire extinguishers. At first it seemed that this had succeeded, but the flames emerged again from the ceiling of the hallway. They fought the fire with a hose that extended from the indoor fire hydrant, but they had to evacuate because of the intense flames, heavy smoke, and power outage.	Initiated	<ul style="list-style-type: none"> ◦ Extinguished timing [] ◦ Firefighting difficulties <input checked="" type="checkbox"/> ◦ Firefighting method [] 	Not Initiated	<ul style="list-style-type: none"> ◦ Extinguished timing [] ◦ Firefighting difficulties [] ◦ Firefighting method [] ◦ Other [] 	
		Successful <input type="checkbox"/> Failed <input checked="" type="checkbox"/>	(Reasons or Conditions) The restaurant staff immediately tried to extinguish the fire with water and fire extinguishers. At first it seemed that this had succeeded, but the flames emerged again from the ceiling of the hallway. They fought the fire with a hose that extended from the indoor fire hydrant, but they had to evacuate because of the intense flames, heavy smoke, and power outage.						
Initiated	<ul style="list-style-type: none"> ◦ Extinguished timing [] ◦ Firefighting difficulties <input checked="" type="checkbox"/> ◦ Firefighting method [] 								
Not Initiated	<ul style="list-style-type: none"> ◦ Extinguished timing [] ◦ Firefighting difficulties [] ◦ Firefighting method [] ◦ Other [] 								
(4) Summary of Firefighting Activities	<p>(Obstacles or Difficulties in Fire Control)</p> <p>By the time firefighters arrived, black smoke was pouring out of each floor above the 3rd floor and many people were trapped inside the building. Most of the firefighters entered the building for the search and rescue activities rather than firefighting activities.</p>								

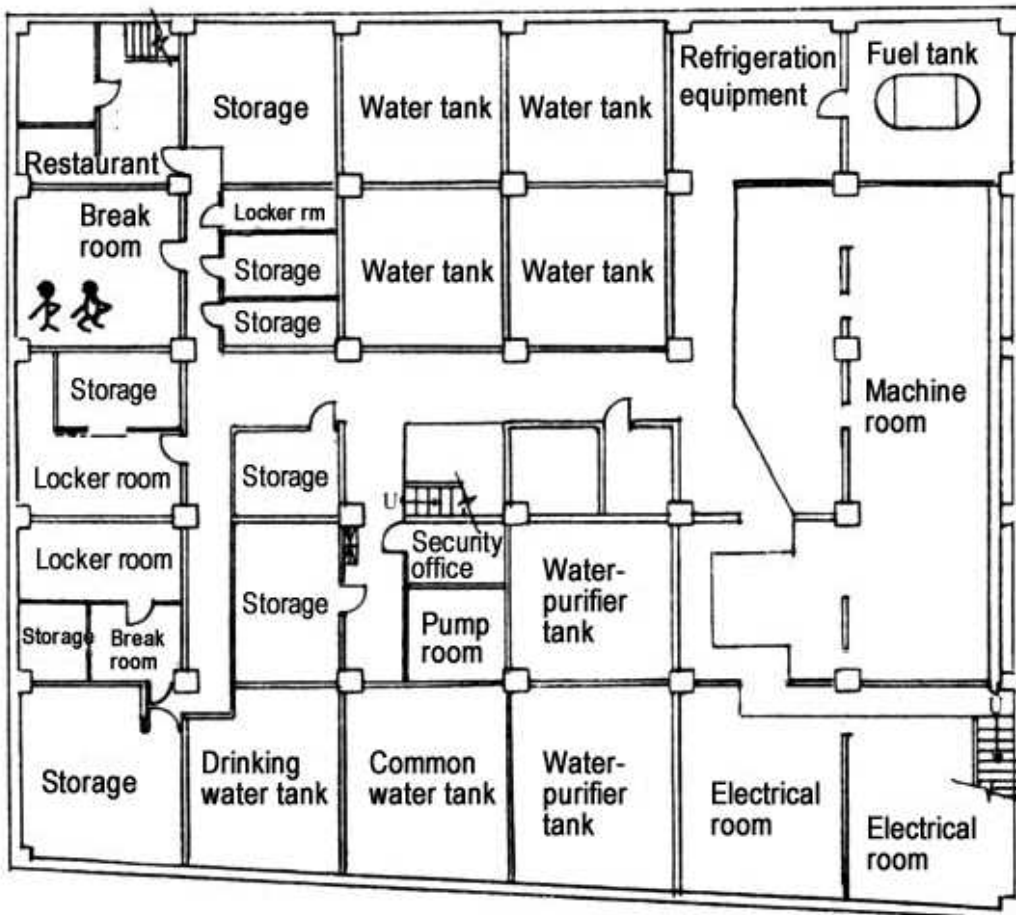
(5) Evacuation	Means of Escape (No. of Persons)	Obstacles to Evacuation
	<ul style="list-style-type: none"> ◦ Stairs [X] () ◦ Elevators/Escalators [] () ◦ Escape equipment [] () ◦ Directly to ground from windows or openings [X] (4) ◦ Rescued [] () ◦ Other (Rescued, Guided, Helped) [X] (133) 	<ul style="list-style-type: none"> ◦ No windows [] ◦ Barred openings [] ◦ Locked emergency doors (Exits) [] ◦ Alarm system [X] (Poorly controlled, Malfunctioned, Not installed) ◦ Power outage [] ◦ Other [X]
<ul style="list-style-type: none"> ◦ At the early stage of the fire, people (employees and visitors) who were in the 1st basement to 3rd floors were able to get out soon after they became aware of the fire. ◦ The office workers who were on the 3rd to 5th floors slowly noticed the fire and most of them escaped through the central stairs filled with smoke. A few people were trapped, but they used ropes to climb down from the window or were rescued by a ladder truck and the firefighters' escape chutes. ◦ On the 6th and 7th floors, there were 2 groups of wedding-party guests and hall staff. One group noticed the fire relatively early and was able to descend via the stairs. The other group noticed it later and became trapped on the 4th floor, where they were rescued by firefighters. A few people were trapped in a kitchen on the 7th floor and in a break room on the 6th floor, but they used a rope to descend to the rooftop of an adjacent building. 		
(6) Causalties	Healthy individuals 2 (Drunk persons) Individuals in need of assistance Infants Elderly Handicapped Patients/ill persons	Obstacles to Evacuation
		<ul style="list-style-type: none"> ◦ No windows [] ◦ Barred openings [] ◦ Locked emergency doors (Exits) [] ◦ Alarm system [X] (Poorly controlled, Malfunctioned, Not installed) ◦ Power outage [] ◦ Other [X]
<p>The 2 fatalities in this fire were a male employee Y and a female employee S. Y (age 32) went to the 2nd basement floor to turn off the power in the electrical room and at the door, somebody told him that the power was already turned off, but he went inside to confirm. On the way back to the 1st floor, he met S (age 18) in the dark and they tried to escape together. However, they were trapped because the upper floor was already in flames. Y helped S to go to the break room and called for help through the internal telephone. The firefighters went to look for them according to the information given to them in the telephone call, but they could not find them. S was a student and part-time worker who just started working there that day. How she ended up in the basement before meeting Y is unknown.</p>		
IV. Issues and Lessons Learned		
<ol style="list-style-type: none"> 1. Building management had not instituted any fire safety management system. There was no chief fire-prevention manager because not even individual tenants had a fire prevention manager. 2. The alarm sound system was turned off on the control panel and this resulted in late detection of the fire and delay in subsequent responses such as evacuation and incipient-stage fire control. 3. There were many building code violations. The open ceiling running from the 1st to 3rd floors in the department store floor had no fire compartments for an area of 1,500 m². The clearances of electrical wires and duct spaces that ran directly from the 2nd basement to the 8th floors were not sealed off. The fire shutters for each stairwell remained open. The backside of the ceiling above the fire doors had defective openings. 4. Until the firefighters arrived, construction workers from a nearby construction site and neighbors helped many people to escape by using ropes and metal ladders, and they continued to help even after the firefighters arrived. 		



Elevator
 Central stairs



1st basement floor



2nd basement floor