**FIRE SAFETY PROVISION IN BANK OF INDUSTRY (BOI) BUILDING, BAUCHI**

Esan, Olusegun Akintomide, Ogwu Williams Alhassan, Shuaibu, Nuru Mamman

1 Building Department, 2 Architecture Department The Federal Polytechnic, Idah.

Building Department, The Federal Polytechnic, Bauchi 3.

**ABSTRACT**

Over the years, there have been reports of fire out breaks in high-rise public buildings in the country. When these occur, many lives are lost and property worth millions of Naira destroyed. The need for safety of lives and property in the event of any fire outbreak in high-rise buildings is of paramount importance. The Planner, Architects, Mechanical Engineer, Builders and Owners, should ensure that safety of both visitors to the building and workers in high-rise buildings are adequately provided for, when using such facilities. This paper appraises the level of adequacy, functionality and maintenance of fire fighting installations in the building. The fire safety installations in the building ranges from fixed fire fighting equipment, portable fire extinguishers, fire alarm system, smoke detectors, etc. It was observed that the operators of the Building have made some attempts, but there are still some shortcomings, which the operators are expected to remedy. Recommendations were then made for the professional involved in the development of building property for future reference.

**Keywords:** Fire, Safety, BOI, Building, Bauchi

**INTRODUCTION**

Safety is the state an individual gets into which gives him the assurance that he is away from danger or harm. Safety means being secured, protected, un-injured, out of danger, and protection from risk (Hornby, 2001). It is freedom from danger: protection from, or not being exposed to, the risk of harm or injury (Microsoft, 2009.). Safety is a situation where potential hazards (all factors that can cause injury, loss, or death) have been taken care of.

Safety is very important and paramount to the comfortable continuous existence of lives and property. As the population grows rapidly, the need to take care of this growing population arises. The growth in the housing needs and the complexity as well as the sophistication of the needs has brought about the construction of high rise buildings to maximize scarce lands and to take care of the increase in population. This gives rise to the design of high-rise buildings, which are primarily a response to the above demands. Unfortunately, these buildings have their attendant problems of becoming dead traps to their occupants in the event of fire outbreaks. The need to take some precautions against fire, outbreaks therefore becomes inevitable. The principal aims of fire precautions are simply to safeguard life and property, this is achieved by:

1. Reducing fire incidences
2. Controlling fire propagation and spread
3. Providing means of escape for occupants of such buildings.

The industrial revolution between late 18th and early 19th century prompted consciousness about Safety in America (Bot, 2000). This may be due to the high level of potential risks involved in industrial production processes. Safety should be an integral and important part of building operation. Safe practices and behaviours to avert injuries or losses must be inculcated in its operations (Ronald and Caserand, 1978).
High-rise buildings accommodate a good number of people at any given time but also made escape from danger in the upper floors difficult. Emphasis on safety in such properties becomes eminent and inevitable because of the height and high volume of traffic that can be involved in case of fire outbreak as well as the tendency of negligence or ignorance by the operators of such high-rise public buildings and the failures of the public utility boards to give continuous and steady service. A high-rise building usually offer accommodation to various occupants engaging in services that can be as diverse as the number of organizations occupying the building. Each of the diverse services of the various users has wide range of fire risks. Buildings must therefore be designed, constructed and managed to present a functional accommodation to users and also take adequate care of them in terms of safety. It is rather unfortunate that many building owners have failed to provide for adequate safety, the managers of such properties do not strictly observe safety rules and precautions because of their negative attitude towards safety Bot(2000). He further stated that they are more preoccupied with the returns from the operation to the detriment of safety of occupants and property (the investment) that brings the income, the proverbial hen that lay the golden egg.

The way fire had raised down buildings completely without control in the country suggested that many of the buildings in Nigeria still lack adequate functional provision of fire fighting equipment, poor maintenance of those that have been provided. On the other hand, where the provision is adequate, the water Board does not adequately pump water into the existing water mains, thereby making fire fighting a very difficult task. These have led to cases of fire outbreaks during which staff and users become victims of burns and death in some instances.

This study aims at assessing the adequacy of both portable and fixed fire fighting equipment as well as exit facilities safety provided within the BOI building. It also recommends ways of achieving maximum safety in high-rise buildings.

**Bank of Industry Building, Bauchi**

BOI building is located along Maiduguri road in Bauchi town. The building, was commissioned for use more than two decades ago, It has a number of tenants with various areas of business and service provision, the various services rendered by these organizations necessitate the use of various materials, equipment and tools which made the risk of fire varies.

**Classification**

Fire is generally classified into six, Class A fires involve organic solids such as paper and wood; Class B fires involve flammable or combustible liquids, Gasoline, grease and oil fires; Class C fires involve flammable gases; Class D fires involve combustible metals; Class E fires involving electrical appliances (no longer used as when the power supply is turned off an electrical fire can fall into any category), Class F fires involve cooking fat and oil (Shield and Silcock, 1987; firesafe.org.uk).

As fire is classified, there are several internationally accepted classification methods for hand-held fire extinguishers. Each classification is useful in fighting fires with a particular group of fuel. The entire body of the fire extinguisher was color coded according to the type of extinguishing agent.

<table>
<thead>
<tr>
<th>Type</th>
<th>Colour code</th>
<th>Suitable for use on fire classes (brackets denote sometimes applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Signal red</td>
<td>A</td>
</tr>
<tr>
<td>Foam</td>
<td>Red with a cream panel above the operating instructions</td>
<td>A B</td>
</tr>
<tr>
<td>Dry powder</td>
<td>Red with a blue panel above the operating instructions</td>
<td>(A) B C E</td>
</tr>
<tr>
<td>Carbon dioxide CO₂</td>
<td>Red with a black panel above the operating instructions</td>
<td>B E</td>
</tr>
<tr>
<td>Vaporising liquid</td>
<td>Red with a yellow band</td>
<td>A B C E</td>
</tr>
</tbody>
</table>

(not halon)
Wet chemical Red with a canary yellow panel above the operating instructions A (B) F
Class D powder Red with a blue panel above the operating instructions D
Halon gas Now prohibited except under certain situations.


United States
There is no official standard in the United States for the color of fire extinguishers, though they are typically red, except for Class D extinguishers, which are usually yellow, and water, which are usually silver, or white if water mist. Extinguishers are marked with pictograms depicting the types of fires that the extinguisher is approved to fight.

Table 2 Common American Classification of Portable Extinguishers

<table>
<thead>
<tr>
<th>Fire Class</th>
<th>Geometric Symbol</th>
<th>Pictogram</th>
<th>Intended Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Green Triangle</td>
<td>Garbage can and wood pile burning</td>
<td>Ordinary solid combustibles</td>
</tr>
<tr>
<td>B</td>
<td>Red Square</td>
<td>Fuel container and burning puddle</td>
<td>Flammable liquids and gases</td>
</tr>
<tr>
<td>C</td>
<td>Blue Circle</td>
<td>Electric plug and burning outlet</td>
<td>Energized electrical equipment</td>
</tr>
<tr>
<td>D</td>
<td>Yellow Decagon (Star)</td>
<td>Burning Gear and Bearing</td>
<td>Combustible metals</td>
</tr>
<tr>
<td>K</td>
<td>Black Hexagon</td>
<td>Pan burning</td>
<td>Cooking oils and fats</td>
</tr>
</tbody>
</table>

Source: http://en.wikipedia.org/wiki/Fire_classes

No matter the precautions put in place against fire outbreak, accident may still occur due to carelessness of occupant, arson or erratic power supply from the public power supply company. In case fire occurs accidentally, there are standard to be complied with and equipment to be provided to alert the occupants, to ease evacuation of occupants so as to avoid injuries and death as much as possible and to provide access for the fire men to evacuate the occupants and save the building from burning complete thereby avoiding further damage to the property and loss of life and property by putting off the fire early.

Adequacy of safety requirement in buildings against fire outbreaks is measured by the provision of:

(i). Means of Escape

This gives unobstructed egress from within a building by way of definite escape route (exit ways, corridors and stairs) to a street or an open space or an adjoining building or roof from which access to the street may be obtained (Foster and Harington, 1988).

Escape route: This is an emergency route provided for the passage of people in case of fire accident and occurrence of other hazards.

Exit facilities: Emergency exit needs depend on the building type, the fire hazard of the materials of construction, the fire protection provided, and the characteristic of the occupants. With the above therefore, the provision of exist facilities should be based on the combination of the worst possible circumstances. The following requirements are acceptable as the minimum standard for the provision of exit facilities.

1. There should be two exit doors on each floor in opposite directions to reduce the pressure that would be mounted at the exit if it were one door.
2. Maximum travel distances from any one point within the building to an exit should not exceed 25m for high-hazard occupancy and 33.3m for moderate or low-hazard occupancy.
3. Exits should be readily accessible, unobstructed and the path adequately lighted.
4. The minimum width for free travel able-bodied persons in single file should be 0.56m.
5. The minimum allowable clear stair width is 1.12m; tread with exclusive of nosing should not be less than 0.23m and riser not over 0.2m. Treads and risers must be uniform in height.
6. Stair way should be enclosed in fire resisting walls with openings protected by fire doors.
7. All doors in exit should open in the direction of egress.
8. Ramps if provided should have a maximum slope of 1 in 10.
9. The floor finish should be non-slip to provided good friction between the floor and the foot.
10. Corridors should be properly ventilated to prevent smoke and toxic gases from filling them. Smoke and toxic gases produced by an outbreak of fire in a building can sometimes be more hazardous than the heat being produced (Hall, 1976).

(ii) Fire fighting Equipment

Fire fighting is the act of extinguishing destructive fires. A firefighter fights these fires to prevent destruction of life, property and the environment. Fire fighting is the process of extinguishing a fire once it has started (Ridley, 1990) the equipment used for this purpose fall under two types:

1. Fixed fire fighting Equipment

For large quantities of flammable liquids, industrial machinery, large electrical fire risk and high-rise buildings beyond the scope of portable extinguishers fixed installations are required such as:

(a). Sprinkler Systems

This comprises a series of water mains, usually overhead, to which sprinkler heads are fitted at intervals. As heat from the fire reaches them, and since they operate at predetermined temperatures, the sprinkler heads break releasing a deluge of water over the fire below; Sprinklers are the most successful and important of the fire – fighting systems.

(b). Hose Reels

These are small diameter hoses usually of internal diameter between 18 and 25mm. The hose is connected to a water supply serving the spindle of the drum on which the hose is wound. The hose is fitted with a small diameter nozzle with a control cork. The hose reel is installed in recess in corridor or landing wall.

(c). Roof Drenchers

These are similar to sprinkler except that they deliver a curtain spray usually to protect the external face of a building from other adjacent fire risk. The drenchers have open waterways and their water supply is turned on normally when required.

(d). Risers

Multi storey buildings are difficult to evacuate in terms of outbreaks. They can also be extremely hazardous. Fixed fire fighting installations provide an adequate means of containing such outbreaks. The type of fire – fighting equipment for multi storey buildings, can take the form of either wet or dry risers. This depends on the height of the building.

(e). Fire Detectors and Alarms

Fire can be detected through the presence of flames or smoke and heat. The purpose of a detector is to sense an outbreak or possible outbreak of fire in its earliest stage and give alarm (Burberry, 1979). Alarm may be initiated manually by pressing the alarm button or automatically by being able to detect smoke or sharp rise in temperature.

2. Portable fire Extinguishers

These are active fire protection device used to extinguish or control small fires, often in emergency situations, fitted in buildings at an easily-accessible location, such as against a wall in a high-traffic area, that are carried by hand containing an extinguishing medium, which can be expelled by the action of internal pressure and directed on to a fire. It is not intended for use on an out-of-control fire, such as one which has reached the ceiling, endangers the user (i.e. no escape route, smoke, explosion hazard, etc.), or otherwise requires the expertise of a fire department. Typically, a fire extinguisher consists of a hand-held cylindrical pressure vessel containing an agent which can be discharged to extinguish a fire.

Common portable fire extinguishers are divided into four according to the extinguishant they contain and these are colour coded as shown in the table below.

Fire Extinguishing Ball

These “firegrenade” style extinguishers are manually operated by rolling or throwing into a fire or will self destruct once in contact with flame, dispersing a cloud of ABC dry chemical powder over the fire which extinguishes the flame covering an area of about 5 square meters. One benefit of this type is that it may be used for passive suppression. The ball can be placed in a fire prone area and will deploy automatically if a fire develops, being triggered by heat. Most modern extinguishers of this type are designed to make a loud noise upon deployment. (http://www.earthtimes.org/articles/show/107481.html)
Fire extinguisher signs
Fire extinguisher identification signs are small signs are mounted above or to the side of the extinguisher they relate to in order to draw attention to the extinguisher's location (http://www.hse.gov.uk/pubns/cais16.pdf)

Maintenance of fire fighting Equipment
Most countries in the world require regular fire extinguisher maintenance by a competent person to operate safely and effectively, as part of fire safety legislation. Lack of maintenance can lead to an extinguisher not discharging when required, or rupturing when pressurized. Generally, International Fire Code require inspections every 30 days to ensure the unit is pressurized and unobstructed (done by an employee of the facility) and an annual inspection by a qualified technician (http://en.wikipedia.org/wiki/International_Code_Council). Hydrostatic pressure testing for all types of extinguishers is also required, generally every five years for water and CO₂ models up to every 12 years for dry chemical models (http://en.wikipedia.org/wiki/Hydrostatic_pressure). Recently there was a move for the elimination of the 30 day inspection requirement if the fire extinguisher is monitored electronically. The system provides record in the form of an electronic event log at the control panel and also constantly monitor extinguisher’s physical presence, internal pressure and whether an obstruction exists that could prevent ready access. In the event that any of the above conditions are found, the system immediately sends an alert to officials so they can immediately rectify the situation. Electronic monitoring can be wired or wireless.

The three types of maintenance required are:

**Basic Service:** All types of extinguisher require a basic inspection annually to check weight, correct pressure (using a special tool, not just looking at the gauge) and for signs of damage or corrosion, cartridge extinguishers are opened up for internal inspection & check weighing of the cartridge, labels are checked for legibility, where possible dip tubes, hoses and mechanisms checked for clear free operation.

**Extended Service:** Water, Wet Chemical, Foam & Powder extinguishers require every five years service, a more detailed examination including a test discharge of the extinguisher and recharging- on stored pressure extinguishers this is the only opportunity to internally inspect for damage/corrosion. By recharging fresh agent is used as they all have a shelf life, even water goes foul inside an extinguisher; Note: extinguishers should be percentage tested according to total number of units in any given area. Some extinguishers contain pressure in excess of 1.38 MPa (200psi) and this internal pressure over periods of time affects each brand & make differently depending on their placement & location.

**Overhaul:** CO₂ extinguishers, due to their high operating pressure, are subject to pressure vessel safety legislation and must be hydraulic pressure tested, inspected internally & externally and date stamped every 10 years. As it cannot be pressure tested a new valve is also fitted. If replacing any part of the extinguisher (valve, horn, etc.) with a part from another manufacturer then the extinguisher will lose its fire rating. This may invalidate insurance, as would incorrect or inadequate servicing if it were to be found.

In the United States there are 3 types of service as well:

**Maintenance Inspection:** All types, annually (with the exception of water types which require a yearly recharge), consists of a physical maintenance and visual inspection. The extinguisher is checked to make sure it has good pressure (gauge in green or proper cartridge weight), has the correct volume of agent (tech weighs it), is within the required hydrotest and internal maintenance intervals, is in good condition and all external parts are serviceable. Dry chemical and dry powder types are hit on the bottom with a rubber mallet to make sure the powder is free-flowing, which is called "fluffing" the powder. The tech will then attach a new tamper seal around the pin and a yearly service tag.

**Internal Maintenance:** Water-annually, foam-every 3 years, wet chemical and CO₂, every 5 years, dry chemical, dry powder, halon and clean agents, 6 years. The extinguisher is emptied of its chemical and pressure to check for proper operation. All components are disassembled, inspected, cleaned, lubricated, or replaced if defective. Liquid agents are replaced at this time, dry agents may be re-used if in good condition, halon is recovered and re-used, but CO₂ is discharged into the atmosphere. The extinguisher is then re-filled and recharged, after a "verification of service" collar is placed around the cylinder neck. It is
impossible to properly install or remove a collar without depressurizing the extinguisher. Note: Cartridge-operated extinguishers should be visually examined, but do not require a verification of service collar.

**Hydrostatic testing:** Water, Foam, Wet chemical, and CO₂, every 5 years. Dry chemical, dry powder, halon, and clean agents, tested every 12 years.

**Methodology**
This study is designed to explore new ideas and collect valuable information, which would be useful for the case under review. It is focus on the need for safety in BOI building. The choice of this BOI was done based on the nature of the services it renders, more so, it is rated among the tallest and biggest building in Bauchi town in terms of number of floors and population of users. The building was physically inspected and interviews conducted to get the data used in this study.

**Data Collection**
There are basically two sources of data used for the purpose of this research. The information, were collected through the personal observation and practical measurements. A checklist of fire safety precaution and prevention requirements was prepared; physical inspection of the building was carried out. Each item on this checklist was noted during the inspection and checked on the existence, adequacy and the present operational state of the fire safety precaution and prevention hardware installations in the building. Data were also obtained from printed materials. They include textbooks, Journals and past projects and comprise essentially of what has been written by other people.

**Data Presentation and Analysis of Results**
This section enables the researchers to determine the nature or degree of safety and provision of first aid measures by BOI building. The results obtained were based on the questions that were answered in the questionnaires that were administered.

**Table 3 General Fire Precautions**

<table>
<thead>
<tr>
<th>1. GENERAL</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 No Smoking’ signs prominently displayed.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2 Compatible storage of dangerous goods.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1.3 Material Safety Data Sheets available.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1.4 Adequate lighting.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1.5 Adequate ventilation.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.6 Qualified first aid officer available.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.7 First aid kit available and up to date.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1.8 Emergency procedures established.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1.9 Evacuation/fire drill practised during previous 12 months.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1.10 Emergency telephone number/s prominently displayed.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1.11 Pressure vessels certificated and regularly inspected.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1.12 Accumulated old equipment stock, rubbish etc. regularly removed.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

**Table 4 Fire Precautions Equipment**

<table>
<thead>
<tr>
<th>2. FIRE Equipment</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Suitable fire extinguishers properly located. Mounted and clearly labelled.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2 Service of extinguishers up to date.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3 Service of hydrants, hose reels and associated pumps up to date.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4 Overhead fire sprinkler/thermal detector heads clear of obstructions, stock, equipment (minimum space 50mm)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>2.5 Fire sprinkler/detector heads free from damage.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>2.6 Sprinkler systems service/maintenance up to date.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>2.7 Fire doors free from damage/obstruction maintained.</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

**Table 5 Egress**

<table>
<thead>
<tr>
<th>3. EGRESS</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Exits and corridors clear of obstruction.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.2 Exit signs clearly visible. 
3.3 Exit doors unlocked. 
3.4 Deadlocks, shot bolts, padlocks on exit doors. 
3.5 Adequate location of exits.

1. Escape Route: BOI building did not make any provision for an alternative escape route except the entrance doors. 
2. Exit Doors: The exit doors in BOI House are aluminium frame glass doors swinging in one direction, but are neither fire resistant nor smoke check. 
3. Place of Refuge: The Building made provision for places of refuge i.e. at the rooftop but the iron door leading to it is locked permanently for security reasons. 
4. Portable Fire Fighting Equipment: BOI House provided a total of 30 portable fire extinguishers the common types being the water, carbon dioxide and blanket. The extinguishers have not been serviced for a long time. This means they may not work when the need arises for its operation in the event of fire outbreak (http://en.wikipedia.org/wiki/International_Code_Council). 
5. Fixed Fire Fighting Equipment: BOI House did not make any provision for fixed fire fighting equipment even at the accommodation area, which has up to four floors. 
6. Fire Alarms and Detectors: BOI House made provision for both fire alarms and smoke detector systems, but only at their new extension. The building has a total of 6 fire alarms and 114 smoke detectors. The alarms and detectors are distributed thus; two alarm on each floor, one smoke detector in each room and two per corridor.

DISCUSSION
From the findings, it has been discovered that BOI House has made some attempt to achieve safety, but this is not adequate as can be seen from the following:

1. Emergency Exits: BOI House did not make any provision for emergency exits, except the main entrance door, the need to introduce these exits is very important in terms of quick and easy evacuation of occupants in the event of any fire outbreak. 
2. Place of Refuge: It was observed that BOI House made provision for a place of refuge or safety at the rooftop. This is adequate except that people who may escape to this place may require special training for the use of ladder and ropes to climb down. 
3. Portable Extinguisher: The Buildings made provision for portable extinguishers, but needs to include Foam and Dry Chemical Powder extinguishers to the number they already have to enable the give room for attack of all classes of fire. 
4. Fixed Fire Fighting Equipment: BOI House did not make any provision for fixed firefighting equipment. A building of this standard needs to install hose reel to help achieve an adequate level of safety. 
5. Fire Alarms / Detectors: The Building made adequate provision for both fire alarms and detectors. Detectors should be situated in all high-risk areas such as Kitchen, bars, restaurants, corridors, laundry and air-conditioning ducts. 
6. Corridors and Staircases: The corridors in the building have adequate width, and are properly ventilated. The staircase configuration of the building is adequate except that they are not enclosed in fire resisting walls.

RECOMMENDATION
The main emphasis of fire precautions is saving life and a major feature is the provision and maintenance of adequate means of escape (Ridley, 1990) 
Given the prevailing problems associated with fire safety and the need to save life and other valuables in buildings, the paper wishes to make the following recommendation:

(i) Emergency exits should be provided in the building to enable easy and guide evacuation of such premises in times of fire out breaks.
(ii) Doors to both emergency exit routes and stair halls should be fire resistance.
(iii) Enclosing walls of all staircases should be made of fire resisting materials.
(iv) Building managers should make adequate provision of the different classes of fire extinguishers for the purpose of first aid fire fighting. These extinguishers should be placed at all floors in the building.
(v) Smoke detectors and fire alarms systems should be installed in all buildings. Care must also be taken to ensure that these systems are functional at all times.
(vi) Building managers should ensure that the Architect provides places of refuge or safety at the design stages of their building property.

CONCLUSION
This paper hereby conclude, that Development Control Boards in the state should ensure strict compliance of that production document submitted for development approval with the fire standards at the design stage before any high rise property plans are approved, also compliance at the construction and occupation stages is very essential. In addition, the supervision authorities or Boards should from time to time visit high rise buildings to ensure that all provisions made for fire safety especially the portable and fixed fire fighting equipment are functional and regularly maintained. Building managers should device various ways of educating users of the use of exit ways, and the fire fighting equipment provided in the building.

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