

system in its properties. DLF has ensured that the employees should be able to describe the emergency procedures for their facility in case of fire; have complete knowledge of fire hazards in the workplace and has taken all the measures to prevent them; demonstrate the correct use of fire extinguishers and take active participation in company fire drill and emergency response. The basic purpose is to save the life, protect property and fight the fire.

At workplace, the major fires can be avoided with the preventive measures and the loss can be reduced with good preparation like paying close attention to security measures; keeping doors and windows locked after business hours, keeping areas around the building – especially alleys and loading docks – well lit and clear of combustibles, identification and marking of smoking areas, turning off and unplugging of all electrical appliances at the end of each working day, etc.



DLF has taken good care of fire safety and response system with the installation of smoke detectors, fire extinguishers, fire alarm monitoring service, exit doors & stairwells, sprinklers, voice alarm, fire door, fire pump room, demarcation of Fire Line, etc.

The study has been done in Cyber City, Gurugram. All the buildings of cyber city are well marked with fire lines, clearly identified area for fire vehicle, smoking area, signage and FHC. There is yearly audit for compliance of fire safety norms by DLF. The fire safety plan, Emergency Evacuation Plan, Standard Operating Procedures for each and every activity including cleaning and maintenance of fire water tank, first aid and fire extinguishers, display of various posters on how to use fire extinguisher, etc. are other initiatives taken by DLF to avert fire.



There fire management system works through two ways:

1. **Deduction System:** This system works with the support of Smoke Detectors, heat detectors and indications.



2. **Suppression System:** For the suppression of fire, DLF has installed Sprinkler system, FSC, portable fire extinguisher, ventilation, etc. In the buildings of more than 15 meter height, a fire lift is installed to enable fire personnel to reach different floors with minimum delay during emergency. The fire lift is provided with a ceiling hatch and its walls shall have a fire rating of 2 hrs. with a vent at the top of area not less than 0.2 sqm. Fire lifts electric supply is on separate service from main electric supply and the cables to run in a route safe from fire. In case of failure of normal electric supply, it shall automatically trip over to alternate supply.



It has also taken care of various valves provided in the fire water line. The valves which are intended to remain open in normal conditions are kept always open and secured in that position by locking with chain and pad lock or other suitable locking arrangement. It helps to ensure that in case of fire, water in sprinklers/ hydrants is available. The same is also tested from time to time as per SOP. Certain valves which are intended to remain in closed

position are kept closed by locking with chain and pad lock or other suitable locking arrangement.

On the ground floor, there is Fire and Security Control Room which is equipped with Fire Alarm Control Panels for the different blocks of buildings. It also takes care of safety issues with the support of CCTV cameras installed in all the buildings.



DLF has two fire stations in Gurugram. One is in DLF phase 3 and other in DLF phase 5. DLF Phase 5 fire station has the manpower of 32. It covers both commercial and residential buildings. The buildings under construction are also taken care by DLF Phase 5 fire station.

DLF Phase 3 has a completely dedicated fire station with the strength of 23 personnel who are regularly trained at physical and equipment level. Fire station is equipped with **Hydraulic Platform** that needs 8 meter road to be functional. It can reach upto the height of 90 meters and is operated by qualified and skilled management only. **Water browser** has the capacity of 18000 litre water. The jet mode of water browser can reach upto 75 meters and depending on the area to be covered, spray mode can also be used. Its pump can pick 6000 litre of water in one minute from 20 feet of depth. It can discharge upto 3800 litre of water in a minute at the distance of 75 metres. Recently, DLF has purchased **Rapid Intervention Vehicle (RIV)** especially for the basement purpose. RIV is a low height vehicle having both water (300 litre) and foam (50 litre) facility. It is alcohol resistant and has Positive Pressure Ventilation (PPV) to control smoke. It also has hydraulic cutter system and spider system to rescue the trapped people. Its 60 metre hosiery lane can create mist fog. It has light mask to lighten the affected area and Self Contained Breathing Apparatus (SCBA). The fire station is also equipped with foam generator, compressor machine, gum boots/ helmet/ fire safety suits, etc.

In every building of more than 24 metres, there is a refuge area from where people can be picked in case of emergency. In fire towers, staircases have positive pressure installed. For fire management, there are 2 Fire Marshalls, 4-10 Fire Officers in each building. Besides, there are Fire Marshalls of clients also.

To minimise the response time and act quickly, DLF has given due weight age to the training and drills of its manpower. It has around 350 fire officers in Gurugram region who all are trained in National Fire Service College, Nagpur. DLF also provide training to its staff at KARAM training centre in Noida for Fall protection (slip, trip & fall); rope access & rescue in short time; protection for head to toe; rope knots & loops for rescue; confined space rescue training, etc. which could help the staff to work at height and other complex situations. Display of Do's and Don'ts, RACE and other instructions at various places in the buildings help the occupants take quick action. Daily fire station activity, weekly training of fire team, mock acquisition drill on every quarter, emergency route practice demo, safety week celebration on yearly basis are some of the other planned activities organised by DLF fire staff.



As per SOP, the testing of all the fire fighting system is done periodically. There is monthly checking and testing of fire pump room, detecting system, sprinkler system, exhaust fan. The Fire Hose Cabinet (FHC) provided at various floors of the building/ facility forms the most important fire fighting system in the building. It is essential to maintain the landing valves, hose reel hose and other equipments in the FHC and the same is checked through inspection, maintenance and testing procedures. To ensure the good working condition of FHC and External Fire Hydrants, they are inspected on weekly basis and maintenance is done on bi-monthly basis. The hose reel hose operational test is done on annual basis.



In case of fire, as per the SOP of fire station, on receiving the alarm/ indication/ telephonic call, FSO and fire man rush to the site to check the authentication. The fire alarm is taken very seriously and never goes unattended. Alarm panel is not silenced until confirmed as false alarm. In case the fire is confirmed, FSO and fireman start fire fighting operations and in the meantime control room shall send in extra manpower and resource support. The respective area is cordoned off and other occupants not involved are moved out from the area by security personnel. If fire spreads further and requires use of fire hydrant & hoses and assistance, fire control room inform the building-in-charge, DLF fire services and Head, Fire Safety with correct address. The detail of fire and message in turn-out slip is handed over to fire officer for quick response and record. In case the fire seems out of control, evacuation is planned in consultation with building in-charge/management. After initiation of fire fighting response, the other emergency activities like cordon off, traffic management, search & evacuation, salvage, etc. are handled by Emergency Response Teams.



With the support of SOP on fire drill and evacuation, DLF is trying to provide proper education and training to all occupants and employees to ensure prompt reporting of fire, response of fire alarm as designated, and the immediate initiation of fire safety procedures/ process to safe guard life and contain fire until the arrival of the fire brigade. It has also established a method of systematic, safe and orderly evacuation of occupants of an area or building to safe assembly area in case of fire or other emergency.

CONCLUSION:

DLF has learnt its lesson from past fire tragedies which took away the life of thousands of people and to provide safety to its customers, it is now fully equipped to counter fire accidents.

DLF is following all the basic norms for fire safety and has also installed all the equipments of national/international level to handle any fire situation. With the preventive and mitigation approach, it has prepared itself and has never faced any major fire accident. Though some 41 minor accidents are reported till date, but they are generally due to negligence of residents which were handled well on time with no loss or injury.

The culture of response needs to be changed to culture of prevention and preparedness. The way DLF has taken the safety of its customers on top most priority and budget is not the constraint for it, the same way, finances should not be constraints when the safety and security of public at large is concerned. The process followed by DLF regarding fire safety needs to be followed by all the public and private offices and residential complexes. They all must be equipped with necessary and adequate fire safety measures. The fire management system of DLF has set an example for other builders and state government to replicate it and make the state free from fire hazards.

Corresponding Author

Dr. Anshu Tiwari*

Faculty, Disaster Management, Haryana Institute of Public Administration, Gurgaon