



**Government Of West Bengal**  
**Office Of The Director General**  
**West Bengal Fire & Emergency Services**  
**13D, Mirza Ghalib Street, Kolkata - 16**

Memo no.:FSR/0125186231200881

Date: 02-02-2024

**From:**  
**Director**  
**Fire Prevention Wing,**  
**West Bengal Fire & Emergency Services**

**To: Mr. Rupesh Ranjan Prasad**  
**Ganguly Home Search Private Limited, 167, Garia Station Road, Kolkata - 700084**

**Sub: Fire Safety Recommendation for proposed construction of G+XVII storied under group Residential Building at the premises no133,N.S.Road, Mouja –Rajpur, Ward- 17, J.L.no – 55,RS Dg no -120,121. R.S. Khatian No – 2623,2513. P.S. –Sonarpur, under Sonarpur Rajpur Municipality, Kolkata- 700149.**

This is in reference to your application no. 0125186231200881 dated 22-12-2023 regarding the Fire Safety Recommendation for proposed construction of G+XVII storied under group Residential Building at the premises no133,N.S.Road, Mouja –Rajpur, Ward- 17, J.L.no – 55,RS Dg no -120,121. R.S. Khatian No – 2623,2513. P.S. –Sonarpur, under Sonarpur Rajpur Municipality, Kolkata- 700149.

**The plan submitted by you was scrutinized and marked as found necessary from Fire Safety point of view. In returning one set of plan with recommendation, this is issuing Fire Safety Recommendation in favor of the aforesaid building subject to the compliance of the following fire safety measure.**

**Recommendation:**

**CONSTRUCTION :**

1. Materials for rapid flame spread categories including untreated wood fiber board etc shall not be used. The doors and windows preferably shall be made of metal.
2. The floor area exceeds 750 Sq. M shall be suitably compartmented by separation walls up to ceiling level having at least two hours fire resisting capacity and sprinkler system should be provided as per NBC Part IV.
3. The interior finish decoration of the buildings shall be made low flame spread materials conforming I.S. specifications.
4. Arrangements shall have to be made for sealing all the vertical and horizontal ducts, shafts by the materials of adequate Fire resisting capacity.
5. Fire rating test certificate of all interior finish decoration should be submitted to this office before taking occupancy.
6. Service ducts and shafts should be enclosed by a wall of 02 hours and doors of one hour fire rating. All such ducts shall be properly sealed and fire stopped at all floor level.

**OPEN SPACE & APPROACH:**

1. The open space surrounding the buildings shall conform the relevant buildings rules as well as permit the accessibility and maneuverability of Fire appliance with turning facility.
2. The approach roads & internal driveway shall be sufficiently strong to withstand the load of Fire Engine weighting up to 45 M.T.
3. The width and height of the access gates into the premises shall not be less than 5.0 Mts. and 6.0Mts respectively.
4. Drive way surrounding the building as approved should be free from any type of obstruction. No parking will be allowed on that drive way.

#### STAIRCASE:

1. The staircase of the buildings shall be enclosed type. Entire construction shall be made of bricks/R.C.C. type having Fire resisting capacity not less than 2 hours.
2. The staircase of the buildings shall have open able sashes at each floor level on the external wall of the buildings.
3. The width of the staircases shall be made as marked in the plan. Corridors and the exit doors shall conforming the relevant buildings rules with up to date amendment.
4. All the staircases shall be extended up to the terrace of the buildings and shall be negotiable to each other without entering into any room.
5. Staircases to be pressurized as marked in the plan & pressure difference shall be 50Pa. as per N.B.C. Part – IV 2016.
6. Fire and smoke doors at the entrances of all the staircase enclosures as marked in the plan at each floor level shall be provided. All F.C.D. along with its fittings shall be of at least two hour Fire resisting wire glass window fitted with self-closing type open able in the direction of escape.
7. The firefighting shaft shall necessarily have connectivity directly to exit discharge or through exit passageway (having 120 min fire resistance walls with F.C.D.) to exit discharge.
8. Staircase lobby of a firefighting shaft shall be smoke controlled as marked in the plan.
9. Pressurization requirement for staircase in firefighting shaft and for other fire exit staircases in buildings greater than 60 m in height be evaluated to limit the force required to operate the door assembly (in the direction of door opening) to not more than 133 N to set the door leaf in motion. The aspect of pressurization, door area/width and door closure shall be planned in consideration to the above.
10. Considering the staircases are only means of evacuation, emergency lighting lighting arrangements, directional exit signet shall be made conforming the relevant I.S. Code in this regards.
11. Escape Rescue System (ERS) to be introduced for emergency evacuation from each floors & lobbies other than alternate staircase.

#### LIFT:

1. The walls of the lift enclosure shall be at least two hours Fire resisting type. Collapsible gate shall not be permitted.
2. Lift shall be designed as Fire Lift. The word "FIRE LIFT" shall conspicuously written in fluorescent paint on the lift landing doors at each floor level.
3. Fire lift lobby of a firefighting shaft shall be smoke controlled as marked in the plan. Lift lobby of fire fighting shaft at all levels to be pressurized (25-30 Pa) as per N.B.C. Part – IV 2016.
4. Alternate source of power supply shall be provided for all lifts through manually operated change over switch.
5. In case of failure normal electric supply it shall automatically trip over to alternative power supply.
6. The Speed of the fire lift shall be such that it can reach the top floor from ground level within one minute.
7. Lift communication system shall be provided in the lift and this system shall be connected to fire control room of the

buildings

**REFUGE AREA:**

1. Refuge area is not less than 15sqm. Shall be provided on the external wall with cantilever projection or other suitable means for G+17 storied Residential Building at 22.50 M and 38 M, as shown/ marked in the plan.
2. The refuge area shall be of Fire Resisting construction and protected with self closing F.C.D. at the entrance from the corridor or the staircase lobbies.
3. Each refuge area shall be ventilated and provided with sprinklers, first aid box, fire extinguishers, public address speaker, fire man talk back, and adequate emergency lighting as well as drinking water facility.
4. The position of Refuge areas shall be such that they are negotiable by the fire service ladder from the ground as marked in the plan.

**FIRE FIGHTING WATER:**

- 1) Capacity of Under Ground Water Reservoir for Fire is 100000 Ltrs, capacity of Over Head Water Reservoir for Fire in 20000 Ltrs on each tower,
- 2) The Fire water reservoir shall have overflow arrangement with the domestic Water Reservoir as well as to avoid stagnancy of water. The water reservoir shall be kept full at all time.
- 3) Provision of necessary manhole shall be made on top of the reservoir as per specification.
- 4) Provision of replenishment at the rate of at least 1000 Ltr. /Min. preferably from two different sources of water supply shall be provided.
- 5) The deep tube wells for the replenishment of the reservoir shall be incorporated with the auto starting facility with the actuation of auto detection and suppression arrangement of the premises and shall also be connected with dual power supply units.
- 6) Provision of placing Fire Appliances on the Under Ground Water Reservoir to be made to draw water in case of emergency.

**Water Layout System:**

**RINGMAIN HYDRANT SYSTEM:**

- 1) 200 mm dia Ring main water layout arrangement covering the entire premises of the project with provision of pillar type yard hydrants without door hose boxes containing 02 lengths of 63 mm delivery hoses and short branch pipe shall be provided at all strategic location and surrounding the building conforming I.S. 3844 – 1989 ( up to date amendment).
- 2) The system shall be so designed that be kept charged with water all the time under pressure and capable to discharge 2850 Ltr. /Min. at the pressure 7 Kg./Sq.cm at any point.

**WET RISER & HOSE REEL SYSTEM:**

- 1) The buildings shall be provided with Wet Riser and Hose Reel Hose unit with provision of twin out lets in each floor level at the staircase landing/half landings.
- 2) All the Riser should be connected with the terrace tank with adequate diameter of pipe,
- 3) Hose Reel Unit: Provision for Hose Reel in conjunction with Wet Riser shall be made at each floor level of all buildings conforming the relevant I.S. specification.
- 4) All other requirements of the water based Fire Protection System shall be made as per I.S. Specification 3844 – 1989 (up to date amendment).

**AUTOMATIC SPRINKLER INSTALLATION**

- 1) All floor of all building shall be protected by quick response type Sprinkler Installation.

This shall be done conforming I.S. Specification 9972. The sprinkler Riser also should be connected with terrace tank with adequate diameter of pipe.

2) Flow switches shall be provided at every floors of sprinkler header to get the annunciation at Ground Floor Security Room / Control Room preferably near entrance lobby.

3) The MLCP shall be provided with Wet Riser and hose reel hose unit with provision of twin out let landing valves.

#### FIRE PUMP:

1) One No multistage multi out let motor driven Main Fire Pump of capacity 2850 LPM with One NO motor driven same capacity pump as well as One No diesel engine driven stand by Fire Pump of same capacity shall be installed in the Fire Pump Room considering positive suction basis.

2) One No multistage multi out let motor driven Fire Pump of capacity 2850 LPM shall be provided for Sprinkler System considering positive suction basis.

3) Two Nos adequate capacity of multi stage Jockey Pump; one for hydrant system and another for Sprinkler System shall be provided inside the Fire Pump Room to keep the system pressurized at all time.

4) All motor driven pumps should be connected with LT/ HT power and stand by DG backup power with auto change over system through Fire MCC Panel.

5) One set of pumps shall be provided for each 100 hydrants or part there off with a maximum of two sets alternatively it can be met by providing additional diesel pump of the same capacity and doubling the fire water tank capacity as per N.B.C. Part – IV 2016.

#### ELECTRICAL INSTALLATION & DISTRIBUTION :

1. The electrical installation including transformers, Switch Gears, Main & Meters etc. and the distribution system of the premises shall be made satisfying the code of practice for Fire Safety in general buildings as laid down in the I.S. specification 1946-1982 and Part 8 'Building Services, Section 2 Electrical and Allied Installations' of the Code.

2. Cables for fire alarm and PA system shall be laid in metal conduits or armoured to provide physical segregation from the power cables.

3. High, Medium and low voltage wiring running in shafts and within false ceiling shall run in metal conduit. Any 230 V wiring for lighting or other services, above false ceiling, shall have 660 V grade insulation.

4. The electric distribution cables/wiring shall be laid in a separate shaft and preferably be of F. R. L. S. categories..

5. Use of bus ducts/solid rising mains instead of cables is preferred.

6. All metallic items like steel structural members, etc, shall be bonded properly to the earthing system.

7. Water mains, gas pipes, telephone lines, intercom lines or any other service line shall not be laid in the duct for electrical cables.

8. The ducts shall be supply sealed at every floor with fire stop materials having the same fire resistance as that of the floor.

9. Electrical MV main distribution panel and lift panels shall be provided with CO2/inert gas flooding system for all panel compartments with a cylinder located beside the panel.

10. The electrical installation shall be adequately protected with CO2/D.C.P. or Medium Velocity Projector System.

11. The location of the panel/ distribution board feeding the fire and life safety system shall be in fire safe zone ensuring supply of power to these systems.

12. Alternative Power Supply--

The generator shall be capable of taking starting current with auto change over facility of all the fire and life safety systems and equipment. Circuits of such emergency system shall be protected at origin by an automatic circuit breaker with its No-volt coil removed. Master switches controlling essential service circuits shall be clearly labeled.

Arrangements shall have to be made to supply power with help of a generator to operate at least Fire Pumps, Pressurization and smoke venting (including its ancillary systems such as dampers and Actuators), all lifts, Exit signage

lighting, Emergency lighting, Fire alarm system, Public address (PA) System (relating to emergency voice evacuation and annunciation), Magnetic door hold open devices, Lighting in fire command centre and security room etc. and also for illuminating the Staircase, Corridors, Passage & Lobby areas, fire refuge areas and other places of assembly of the buildings in case of normal power failure.

**AUTO DETECTION AND ALARM SYSTEM:**

1. Auto Fire Alarm System which analogue addressable smoke/ heat detectors as per suitability shall be installed in all floor area of the buildings except side open type car parking area.
2. Addressable analogue manual call boxes incorporating with sounders & visual strobes/beacons shall be installed in all the floor area of the buildings in such a manner that maximum travel distance shall not be more than 22.5m in order to reach any of the call point.
3. Micro Processor based fire alarm panel shall be installed and all shall also be connected with main panel at the Fire Control Room of the premises.
4. Both way Public address systems linked between all floors & fire refuge areas and Control Room shall have to be established.
5. In buildings where automatic fire alarm system is provided, the following shall be monitored from fire Alarm panel--Water level in all tanks, Hydrant and sprinkler pressures of respective zones as provided, Pump 'ON/OFF' status, all isolation valves, wherever provided with supervisory switch (non-padlock valves), other requirements to meet electro - mechanical services interface.
6. All the installation shall also satisfy the relevant I.S. Specification 2189 as amended and the code of practice as laid down in NBC Part IV.

**AIR CONDITIONING SYSTEM: (if any)**

1. The A.H.U. shall be separated for each floor with the system Air Ducts for individual floors and in no way shall interconnect with the duct of any other floor. Within a floor it would be desirable to have separate air handling unit provided for each compartment.
2. Arrangement shall be made for isolation at the strategic locations by incorporating auto dampers in the Air Conditioning System.
3. The system of auto shut down of A.H.U. shall be incorporated with the auto detection and alarm system.
4. The Air Handling Units room shall not be used for storage of any combustible materials.
5. Shafts or ducts, if penetrating multiple floors, shall be of masonry construction with fire damper in connecting ductwork or shall have fire rated ductwork with fire dampers at floor crossing. Alternatively, the duct and equipment may be installed in room having walls, doors and fire damper in duct exiting/entering the room of 120 min fire resistance rating. Such shafts and ducts shall have all passive fire control meeting 120 min fire resistance rating requirement to meet the objective of isolation of the floor from spread of fire to upper and lower floors through shaft/duct work.
6. The air filters of the air handling units shall be made of non-combustible materials.
7. Air ducts serving main floor areas, corridors, etc, shall not pass through the exits/exit passageway/ exit enclosure. Exits and lift lobbies, etc, shall not be used as return air passage.
8. As far as possible, metallic ducts shall be used even for the return air instead of space above the false ceiling.
9. The materials used for insulating the duct system (inside or outside) shall be of non-combustible type. Any such insulating material shall not be wrapped or secured by any material of combustible nature.
10. Inspection panels shall be provided in the ductwork to facilitate the cleaning accumulated dust in ducts and to obtain access for maintenance of fire dampers.

**FIRST AID FIRE FIGHTING SYSTEM:**

- 1) First Aid Fire fighting arrangement in the style of placing suitable type of portable Fire Extinguishers, Fire Buckets etc. in all floors and vulnerable locations of the premises shall be made in accordance with I.S. 2190-2010.
- 2) special Rescue Equipment like Smoke Hood, self contained B.A. Set portable lights as per required quantity shall be made available+ in the main fire Control Room of the premises

**GENERAL RECOMMENDATIONS:**

1. Fire License shall have to be obtained for proposed storing and processing with L.P.G. and other highly combustible articles.
2. Lightning protection for buildings shall be provided as per Part 8 'Building Services', Section 2 Electrical installations.
3. All fire exit doors from the car parking to exits shall be painted green and shall display exit signage.
4. Fire fighting equipments shall be suitably located and clearly marked by luminous sign.
5. Fire Notice for Fire Fighting and evacuation from the buildings shall be prepared and be displayed at all vulnerable places of the buildings.
6. Floor numbers and directional sign of escape route shall be displayed prominently.
7. The employees and security staff shall be conversant with installed Fire Fighting equipments of the buildings and to operate in the event of Fire and Testing.
8. Arrangement shall be made for regular checking, testing and proper maintenance of all the Fire Safety installation and equipments installed in the buildings to keep them in perfectly good working conditions at all times.
9. A crew of trained Fireman under the experienced Officer shall be maintained round the clock for safety of the buildings.
10. Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of the buildings.
11. Close circuit T.V. shall have to be provided for the entire floor area of the buildings.
12. On compliance of all the above Fire Safety recommendations, the Director General, West Bengal Fire & Emergency Services shall be approached for necessary inspection and testing of the installation before occupancy of the buildings; Fire Safety Certificate in favour of the occupancy shall be issued on being satisfied with the tests and performances of safety aspects of installation of the buildings.

N.B.: Any deviation and changes the nature of use of the building in respect of the approved plan drawings, without obtaining prior permission from this office, this Fire Safety Recommendation will be treated as cancelled.

SUB:

**DIRECTOR**  
West Bengal Fire & Emergency Services