



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

Memo no.:FSR/0125186208706253

Date: 20-11-2020

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

**To: ARUN PROPERTIES LLP**  
**13/1, BALLYGUNGE PARK ROAD, KOLKATA - 700019**

**Sub: Fire Safety Recommendation for proposed construction of a B+G+26 storied under group Residential Building at the premises no. 13/1, Ballygunge Park Road, Kolkata - 700 019.**

This is in reference to your application no. 0125186208706253 dated 09-10-2020 regarding the Fire Safety Recommendation for proposed construction of a B+G+26 storied under group Residential Building at the premises no. 13/1, Ballygunge Park Road, Kolkata - 700 019.

**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:**

**A.CONSTRUCTION:**

- 1.The whole construction of the proposed residential building shall be carried out as per approved plan drawings conforming the relevant building rules of Kolkata Municipal Corporation.
- 2.The interior finish decoration of the building shall be made of low flame spread materials conforming to I.S. specifications.
- 3.Arrangements shall have to be made for sealing all the vertical & horizontal ducts by the materials of adequate Fire resisting capacity at each floor.

**B.OPEN SPACE & APPROACH:**

- 1.The open space surrounding the building shall conform the relevant building rules as well as permit the accessibility and manoeuvrability of Fire appliance including Aerial Ladders with turning facility.

2.The approach roads, internal road / driveway and dedicated clear open space for Fire Service Aerial Ladder of areas 9 M X 15 M shall have to be provided as shown in the plan and shall be sufficiently strong to withstand the load of Fire Engine weighing up to 45 M.T.

3.The width and height of the access gate into the premises shall not be less than 5.0 M & 5.5 M respecting the abutting road.

#### C.STAIRCASE:

1.All the principal staircases up to top floor shall be pressurized. A positive pressure of 25-30 Pa. shall be maintained inside the staircases.

2.The staircases of the building shall be enclosed type, entire construction shall be made of brick / R.C.C. type having Fire resisting capacity not less than 4 hours respectively marked in the plan.

3. The staircases of the building shall have permanent vents at the top equal to 5% of the cross sectional area of the staircase enclosures and open able sashes at each floor level equal to 15% of the said cross section are shall have to be provided in the external wall of the building.

4. All the staircase of the building shall be negotiable to each other in each floor without entering into any room and shall be extended up to respective terrace.

5. The width of the staircases and corridor and travel distance of different categories of occupancies shall have to conform the relevant building rules.

6.Fire and Smoke check doors at each of the entrances of all the Staircase enclosures at each floor level shall be provided. The F.C.D. shall be of at least two (2) hour Fire rating with wire glass window fitted with self-closing type openable in the direction of escape.

7.Considering the staircases are only means of evacuation, emergency lighting arrangement directional, exit, sign etc. shall be made conforming the relevant I.S. Code in this regards.

#### D.Exit:

1.Exits shall be so arranged that at least two separate exits are available in every floor area. Exits shall be as remote from each other as practicable and so arranged that there are no pockets or dead end occurred in which occupants may be trapped.

2.Every exit door way shall open into an enclosed stairway or a horizontal exit of a corridor.

#### E.MULTIPURPOSE HALL, GYM & ALL ASSEMBLY AREAS:

The doors / signage / Fire & Life Safety arrangements and Fire Protection measures shall be made as per provision of N. B. C. - Part-IV, 2016 and relevant I.S. specification.

F.LIFT:

- 1.The walls of the lift enclosure of the building shall be at least two hours FIRE resisting type and lift shaft shall be pressurized as per existing norms and provision of NBC Part IV, 2016.
- 2.One number lift of the building shall be designed as high speed "FIRE LIFT" and shall be conspicuously indicated / marked.
- 3.The Electric power shall be from separate supply mains in the building and cables run within the lift shafts, light and fans in the lift cars shall be operated from 24 volts, supply on emergency in case of failure of normal power supply lift shall automatically trip over alternate power supply.
- 4.Exit doors of the lift lobby shall be through a self- closing smoke stop door of 2 hour fire rating for Residential Tower.
- 5.The speed of the fire lifts in the building shall be such that it can reach the top from the ground floor within 1 minute. Visual indications of floor numbers shall be incorporated in the lift cars.
- 6.All other requirements shall conform relevant I.S. specification including the communication facility in the lift cars connecting to the Fire Control Room of the building.
- 7.The Lift Lobbies including basement shall be enclosed type and pressurized as per existing norms and relevant I.S. specification. A positive pressure shall be maintained in the lift lobbies as per NBC-Part-IV' 2016.

G.REFUGE AREA:

- 1.The Refuge areas shall be provided on the external wall as cantilever projection for Residential Building as shown in plan drawings not less than 15 Sq. mtr. area at the level 24.472 M, 39.472 M, 54.472 M, 69.472 M, 84.742 M, 99.472 M of the building as shown / marked in the plan.
- 2.The refuge areas shall be of Fire resisting construction and protected with self-closing F.C.D. at the entrance from the corridor or the staircase landings.
- 3.The position of refuge Areas shall be such that they are negotiable by the Fire service Aerial Ladder from the ground floor.

H.BASEMENT:

- 1.The Basement shall be adequately ventilated.
- 2Automatic Mechanical smoke venting arrangements shall be provided to the basement conforming the relevant I.S. Specification and provision of NBC Part IV, 2016.
- 3.Mechanical extractor shall have an alternate source of supply.
- 4.Mechanical extractor shall have an internal locking arrangement so that extracting shall continue to operate and supply

fans shall stop automatically with the actuation of Fire Detectors / suitable detection system.

5.The entire basement shall be protected with Automatic Sprinkler System with Hydrants and Hose Reel Hose conforming relevant I.S. specification incorporating with alarm gong bell.

#### I.Fire Fighting Water :

1.Underground water reservoirs having total water capacity of not less than 200,000 (Two Lac) ltrs.

2.Overhead reservoir of not less than 10,000 ltrs. Capacity exclusively for firefighting purpose shall be kept full at all time.

3.The water reservoirs shall have overflow arrangement with the domestic water reservoirs as well as to avoid stagnancy of water.

4.Provision of necessary manhole shall be made on the top of these reservoirs as per specification.

5.Provision of replenishment at the rate of at least 2000 lts./min. from two separate sources of water supply shall be made.

6.The deep tube wells for the replenishment of the reservoirs shall be incorporated with auto starting facility with actuation of auto detection and suppression arrangement of the premises and shall also be connected with dual power supply units.

7.Provision of placing Fire Appliances near the underground water reservoir to be made to draw water in case of emergency.

#### J.Water Layout System:

1.The building shall be provided with separate Wet Risers for sprinkler & hydrant of 150 mm. internal diameter Pipe Line each with provision of 1no landing valves at the Staircase landings / half landings at the rate of one such riser for 1000 Sq. m. of floor area. The system shall be so designed that shall be kept charged with Water all the time under pressure and capable to discharge 2850 lts/min. at the ground floor level outlet and minimum 900 lts/min. at the top most and farthest outlet. In both cases the running pressure shall not be less than 3.5 Kgs/Sq.cm. All other requirements shall be conforming I.S. 3844 – 1989.

2.Provision for Hose Reel units on swiveling drum in conjunction with Wet Riser shall be made near each landing valves.

3.Ring Main of 200 mm dia with provision of adequate nos of Yard Hydrants shall be installed surrounding the building in accordance with relevant I.S. specifications.

4.Provision of suitable Fire Service Inlet shall be made as per relevant I.S specification.

#### K.Fire Pump:

1.Provision of the Fire Pumps shall have to be made to supply water at the rate-designed pressure and discharge into the Water based system which shall be installed in the respective pump room for Residential Tower. One such pump shall always be kept on standby preferably of diesel driven type.

2.Provision of separate pump for sprinkler system to be made to keep the Water based system under pressurized condition at all the time and shall be installed.

3.Provision of separate Jockey Pumps for hydrant and sprinkler (Capacity not less than 180 LPM) shall also have to be made to keep the Water based suppression systems i.e. hydrant and sprinkler system separately under pressurized condition at all the time. All the pumps shall be incorporated with both manual and auto starting facilities. The suction of pumps shall preferably of positive type or in case of negative suction the system shall be wet riser-cum-down comer with suitable terrace pump with overhead tank.

#### L.Sprinkler Installation:

The automatic Sprinkler installation shall be provided in the basement and in all floor areas of the building, as per I.S. 9972 and alarm gong to be incorporated along with the sprinkler system. Sprinkler test line shall have to be provided at roof level.

#### M.Electrical Installation & Distribution:-

1.The electrical installation including transformers, Switch Gears, L. T., H. T. Rooms, panel rooms , Main & Meters etc. and the distribution system of the premises shall be made satisfying the code of practice for Fire safety in general building as laid down in I.S. specification 1946 – 1982.

2.The vertical & horizontal ducts shall be sealed at all floor level by approved fire resisting materials.

3.The electrical installation shall be adequately protected with automatic fire detection and suppression system as per provision of N. B. C. Part– IV, 2016 and relevant I. S. specification.

4.Alternative Power Supply : Arrangements shall have to be made to supply power with the help of generators to operate at least the Fire Pump, Pump for deep Tube-well, Fire Detection and Alarm System, signage etc. and also for illuminating the Staircase, corridors etc. and other places of assembly area of the Residential tower in case of normal power failure.

#### N.INTELLIGENCE ANALOGUE SYSTEM:

1.Auto Fire Alarm System with analogue addressable smoke / heat detectors as per suitability shall be installed in all floor area of the building.

2.Addressable analogue manual call boxes incorporating with sounders shall be installed in all floors area of the building in such a manner that maximum travel distance shall not be more than 22.5 m in order to reach any of the call point.

3.Both way public address systems & talk back systems linked between all floors and Control Room. Shall have to be established.

4.C. C. Camera & Public Address System:- Public address system linked between all floors and Fire Control Room shall have to be established.

5.Fire Control Room: i. A well designed Fire Control Room with C.C.T.V. and Fire Control Panel and monitoring 24X7. Preparation of Emergency Evacuation: ii. There is need to have a clear policy and proper implementation of emergency

evacuation plan.

**O.AIR CONDITIONING SYSTEM (IF ANY):**

- 1.The A.H.U. shall be separated for each floor with the system Air Ducts for individual floors.
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.Escape route like staircase, common corridors, lift lobby etc. shall not be used as return air passage.
- 6.Wherever the ducts pass through Fire wall of floors, the opening a rounding the ducts shall be sealed with Fire resisting materials such as asbestos rope vermiculite concrete etc.
- 7.The metallic ducts shall be used even for the return air instead of space above the false ceiling.
- 8.The materials used for insulating the duct system (inside or outside) shall be of non- combustible materials glass wool shall not be wrapped or secured by any materials of combustible nature.
- 9.Area more than 750 sq. m. on individual floor shall be segregated by a Fire wall and automatic fire damper for isolation shall be provided.
10. Air duct services main floor area, corridors etc. shall not pass through the staircase enclosures.
11. The air handling units shall be separation for each floor, and air ducts for every floor shall be separated and in no way interconnected with the ducting of any other floor.
- 12.If the air handling units serve more than 1 floor, the recommendation given above shall be complied with in addition to the conditions given below:- a. Proper arrangements by way of automatic Fire dampers working on fuse able link for isolating all ducting at every floor from the main riser shall be made. b. When the automatic Fire alarm operates the respective air handling units of the air conditioning system shall automatically switched off.
- 13.The vertical shaft for treated fresh air shall be of masonry construction.
- 14.The air filters for air handling units shall be of non-combustible materials.
- 15.Inspection panel shall be provided in the main trucking to facility the cleaning of ducts of accumulated dust and to obtain access for maintenance of fire dampers.
- 16.No combustible materials shall be fixed nearer than 15cm to any duct unless such duct properly enclosed and protected with non-combustible materials ( glass wool or Spun wool with neoprene facing enclosed and wrapped with aluminum sheeting) at least 3.2m thick. And which would not readily conduct heat.

**P.FIRSTAID FIRE FIGHTING SYSTEM:**

First Aid firefighting 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. 2190-92.

**Q.General Recommendations:**

- 1.Fire License shall have to be obtained for proposed storing and processing with L.P.G. and other highly combustible articles if any.
- 2.Necessary sanction and approval for such construction and occupancy of this project must be obtained from competent authorities.
- 3.Disposable type B. A. Musk to be kept always for emergency fire situation.
- 4.Fire Notice for Fire Fighting and evacuation from the building shall be prepared and be displayed at all vulnerable places of the building.

5. Floor numbers and directional sign of escape route shall be displayed prominently.
6. The occupants and security staff shall be conversant with installed Fire Fighting equipments of the buildings and to operate in the event of Fire and Testing.
7. 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.
8. A crew of trained Fireman under an experienced officer shall be maintained round the clock for safety of the building.
9. Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of buildings.
10. The certificate has to be obtained from the Director General, West Bengal Fire & Emergency Services certifying about the satisfactory services, performance of all the Life and Fire Safety arrangements and installation of the building.

On compliance of all the above Fire and Life safety recommendations, the Director General, West Bengal Fire & Emergency Services shall be approached for necessary inspection and testing of the installation, 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 building.

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

Director  
West Bengal Fire & Emergency Services

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