



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

Memo no.:FSR/0225186241200086

Date: 22-03-2024

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

**To: SOURAV ROY AS PARTNER OF UST CONSTRUCTION CA OF NIRMAL KANTO GHOSH AND OTHERS**  
**123,183,RAJA RAM MOHAN ROY ROAD**

**Sub: Fire Safety Recommendation for a proposed G+XII storied building under group of Residential building at premises no:- 183 , Raja Ram Mohan Roy Road, Kolkata:-700039, P.S:- Haridevpur, ward No:- 123, Borough:XVI , (LR dag No:- 405,KHATIAN NO:- 6644, JL NO:- 113, Mouza :- MURADPUR.),KOLKATA,(W.B)**

Application Reference : KMC (CAF-2023160623) received on 12-02-2024 regarding the Fire Safety Recommendation for a proposed G+XII storied building under group of Residential building at premises no:- 183 , Raja Ram Mohan Roy Road, Kolkata:-700039, P.S:- Haridevpur, ward No:- 123, Borough:XVI , (LR dag No:- 405,KHATIAN NO:- 6644, JL NO:- 113, Mouza :- MURADPUR.),KOLKATA,(W.B)

**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.Materials for rapid flame spread categories including untreated wood fibre board etc. shall be not use.
- 2.The doors and windows preferably shall be made of metal.
- 3.The whole construction of the building shall be carried out as per approved plan drawings conforming the relevant building rules of local Municipal Body.
- 4.The floor area exceeds 750 m2 shall be suitably compartmented having four hours fire resisting capacity and sprinkler system should be provided as per N.B.C. Part IV.
- 5.The interior finish decoration of the building shall be made with the materials with low flame spread and low smoke and toxic gas generating categories conforming I.S. Specification.
- 6.Arrangement shall have made for sealing all the vertical service ducts by the materials of adequate Fire resisting capacity.
- 7.Fire rating test certificate of all interior finish decoration should be submitted to this office before taking occupancy.



8. Service Ducts and shafts should be enclosed by walls of 2 hours and doors of one-hour fire rating.

9. All such ducts shall be properly sealed and fire stopped at all floor level.

#### B. OPEN SPACE & APPROACH:

1. The open space surrounding the building shall be kept clear open to sky and shall conform the relevant building rules as well as permit the easy accessibility and manoeuvrability of the Fire appliances with turning facility.

2. The approach road and roads surrounding the building shall be sufficiently strong to withstand the load of Fire Engine weighting up to 45 M.T.

3. The width and height of the entry gates to the premises shall not be less than 5m and 5m respectively.

4. Driveway should be free of any type obstruction. No parking will be allowed on the Drive Way.

5. Under the beneath of refuge area 15X5 m shall have to provide without any obstruction.

#### D. LIFT:-

1. The walls if the lift enclosure of the building shall be at least two hours FIRE resisting type respectively marked in the plan with the event at top of area not less than 0.2m<sup>2</sup>.

2. The lift of the building shall be designed at high speed "Fire lift" and conspicuously indicated marked in the plan.

3. One of the lift cars of the building shall be large enough to accommodate standard Ambulance stretcher and Medical Attendants.

4. The electric power shall be from separate supply mains in the building and cables run with 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 supply.

5. Arrangements shall be provided for extraction of smoke in all the lift shaft by incorporation smoke venting system designed to permit 30 Air changes per hour in case of Fire and shall be of such design as to operate on actuation of Fire Alarm.

6. In case of failure of normal electric supply. It shall automatically trip to alternate supply.

7. Exit doors of the lift lobby shall be through a self-closing smoke stop door of 1hour fire resistance.

8. 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 in visual indications of floor numbers shall incorporated in the lift cars.

9. All other requirements shall confirm the I.S. specification including the communication facility in the lift cars connecting go the Fire Control Room of the building.

10. Lift car door shall have a fire resistance rating of half an hour.

11. The words fire lift shall be conspicuously displayed inflorescent paint on the lift landing doors at each floor level.

12. A positive pressure of 25-30 pa. Shall be maintained inside the lift well and lobby. Pressurization shall be maintained round the clock.

#### E. REFUGE AREA:

1. The refuge area on calculating the area at the rate of 03 m<sup>2</sup>/ person on the basis of floors area shall be provided on the external wall as cantilever projection or any other suitable means at above +24m level and there after alternative every 15M. of the building.

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. The position of refuge areas shall be such that they are negotiable by the Fire Service Ladder from the ground floor.

4. The Refuge areas shall be provide on the external wall as cantilever projection for residential building as shown in plan drawing

5. The area of refuge balconies are shown in the plan drawing.



#### F. FIRE FIGHTING WATER:

1. Underground water reservoirs having total water capacity of not less than 1,00,000 ltrs & OHWR 15,000 ltr Exclusively for fire fighting purpose shall be provided.
2. The water reservoirs manhole shall have overflow arrangement with the domestic water reservoirs as well as to avoid stagnancy of water.
3. Provision of necessary manhole shall be made on the top of these reservoirs as per specification.
4. Provision of replenishment at the rate of at least 2000 ltrs/min. from two separate sources of water supply shall be made.
5. The deep tube wells for the replenishment of the reservoir 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.
6. Provision of placing Fire Appliances near the underground water reservoir to be made to draw water in case of emergency.

#### G. WATER LAYOUT SYSTEM:

##### a. Ring main Hydrant System:

1. 150 mm dia Ring main water layout arrangement converting the entire premises of the project with provision of pillar type yard hydrants with door Hose boxes, containing 2 lengths of 63mm delivery hose and short branch pipe shall be provided at all strategic location and surrounding the buildings conforming I.S. 3844-1989 (up to date amendment).
2. The system shall be so designed that shall always be kept charged with water under pressure and capable to discharge min. 2280 ltrs. /min. at the pressure 3.5kg/sq.cm. at any point.

##### b. Wet Riser & Hose Reels System:

1. The building shall be provided with separate Hydrant Riser 150 mm internal diameter pipe line each with provision of landing valves at the staircase landings/ half landings at the rate of one such rises for 1000 sq. m. of floor area.
2. The system shall be so designed that shall be kept charged with water all the time under pressure and capable to discharge 2280 ltrs/min.
3. at the ground floor level outlet and minimum 900 ltrs/min. at the top most and furthest outlet.
4. In both cases the running pressure shall not be less than 3.5 kgs/sq. cm.
5. Provision for Hose Reel units on swivelling drum in conjunction with Wet Riser shall be made near each landing valves.
6. Hose Reel unit with provision of outlets in each floor at the staircase landing/half landing as per suitable at the rate of one such unit of Wet Riser and Hose Reel per 1000sq.m. of floor area.
7. Yard Hydrant/ Ring Main Hydrant with provision of adequate number of Pillar type hydrant shall be installed surrounding the buildings in accordance with relevant I .S. specifications.
8. Provision of suitable Fire Service inlet shall be made as per relevant I. S. specification.
9. All other requirements of the water base Fire Protection System shall be made as per I.S. Specification 3844-1989 (with up to date amendment).

##### Automatic Sprinkler Installation:

a. The automatic Sprinkler installation shall be provided in all covered double layer & single layer, open triple layer, double layer, & single layer car parking areas, gym area, community hall & kitchen area & all commercial area, showroom area etc. as per provision of NBC part- IV, 2016 and relevant I. S. 9972. Alarm gong to be incorporated along with the sprinkler system..

##### b. Water projector Protection ( if required) :

The Electrical installation viz. transformer, HT, LT switch gear etc. shall be protected by high medium velocity water projector system as per suitability

#### H. FIRE PUMP:

1. Provision of the Fire Pump of 2280 LPM 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.
2. One such pump of same capacity shall always be kept on stand-by of diesel driven type.
3. Provision of separate pump 2280 LPM for sprinkler system ( if required) to be made to keep the water base system under



pressurized condition at all the time and shall be installed.

4. Provision of separate Jockey Pumps of 180 LPM shall also have to be made to keep the water-based suppression systems i.e. hydrant and sprinkler system both under pressurized condition at all the time.

5. All the pumps shall be incorporated with both manual and auto starting facilities.

6. 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.

7. The fire pumps shall be multi stage and multi outlet creating pressure zones.

I.a) ELECTRICAL DISTRIBUTION SYSTEM:

1. Electrical distribution system of all the building shall be made in the form of concealed wiring or in heavy gauge M.S. conducted continuously bonded to earth cables shall be I.S. marked and preferably be F.R.L.S. categories.

2. Electrical distribution system shall conform all the requirement laid down in I.S. 1946-1982.

3. For every 23V wiring above false ceiling 660 grade insulated cable shall be used. Transformer switch gear H.T., L.T. and other electrical rooms shall be at the ground floor level and other electric rooms shall be at least 4 hrs. Fire resisting capacity, adequate ventilation arrangement shall have to be made in all the rooms, Dry and explosion proof type shall preferably be installed.

4. All electrical installation viz. Transformers, Switch Gears, L.T., H.T. rooms shall be protected with both auto detection and suppression system as per suitability.

b) Alternative Power Supply:

Arrangement shall be made to supply power with the help of a generator to operate at least the Fire pump, Pump for the deep tube well, Fire Alarm system, etc. and also for illuminating the staircase, corridors etc. and other place of assembly of the building in case of normal power failure.

J. AUTO DETECTION AND ALARM SYSTEM

1. Manually operated Electrical Fire system with adequate numbers of break glass type call boxes fitted with Hooters along with public address system, at each floor connection with visual panel board shall be made in Control Room.

2. The Control Room shall be located at the entrance of Ground Floor of the building, other requirements of the system shall be made conforming I. S. 2189-1988.

3. Auto fire detection system with the help of heat and smoke detector shall be installed in as per requirement including basement area of below and preferably above false ceiling of the building.

4. The system shall also be made in places of rooms where valuable articles have been kept.

5. The other requirements of the system shall be made in accordance with I. S. 2189-1988.

6. The suppression system shall be made with Fire Extinguishers and total flooding system with inert gas particularly in computer and electric processing and data room and in a room of irreplaceable articles as per suitability.

7. Hooter will be sounded in such a manner so that on actuation of a Detector or Manual Call Point Hooters will be sounded on the same floor and immediate alternate floor.

8. Smoke detector shall have to be installed in the covered car parking, commercial area, showroom area, common area, and where required as per suitability.

K. Public Address System: -

Public address system shall have to be provided and linked between all floors and control room with talk back facility.

L. AIR CONDITIONING SYSTEM ( if required ) :

1. The A.H.U. shall be separated for each floor with the System Air Duct for individual floors and in no way interconnected with the ducting of any other 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 unit 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. Whenever the ducts pass through Fire wall of floors, the opening 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 ducts 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. Mtr on individual floors shall be segregated by a Fire wall and automatic fire damper for isolation shall be provided.
10. If the air handling unit serve more than one floor, the recommendation shall give above shall be comply with in addition to the condition given below:
  - a. Proper arrangement 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 unit of the air conditioning system shall automatically be switched off.
11. The vertical shaft for treated fresh air shall be of masonry construction.
12. Inspection panel shall be provided in the main trucking to facilitate the cleaning of ducts of the accumulated dust and to obtain access for maintenance of fire dampers.
13. No combustible materials shall be fixed nearer than 150 mm of any duct unless such duct is properly enclosed and protected with non-combustible materials ( glass wool or spun glass with neoprene facing, enclosed and wrapped with aluminium sheeting ) at least 3.2 mm thick would not readily conduct heat.
14. The ducting shall be constructed of substantial gauge metal in accordance with good practice.

M. FIRE DAMPERS ( if required):

1. These shall be located in conditioned air ducts and return air ducts/ passages at the following points:
    - a) At the fire separation wall,
    - b) Where ducts pass through floors and,
    - c) At the inlet of supply air duct and return air duct of each compartment on every floor.
  2. The dampers shall operate automatically and shall simultaneously switch of the air handling fans. Manual operation facilities shall also be provided.
- NOTE: - For blowers where extraction system and duct accumulators are used, dampers shall be provided.
3. Fire/smoke dampers for building more than 24 meter in height:  
For apartment house - In non-ventilated lobbies/corridors operated by fusible link/smoke detector with manual control.  
For other building – On operation of smoke detection system and with manual control.
  4. Automatic Fire dampers shall be so arranged as to close by gravity in the direction of air movement and to remain tightly closed on operation of a fusible link/smoke detector.

N. FIRST AID FIRE FIGHTING SYSTEM:

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 – 1992.

O. Emergency & Escape Lighting ( if required):-

Emergency lighting shall be powered from a source independent of that supplying the normal lighting.

Escape lighting shall be capable of:-

1. Indicating clearly and unambiguously the escape routes.
2. Providing adequate illumination along such routes. To allow safe movement of persons towards and through the exits.
3. Ensuring that fire alarm call points and fire fighting equipment provided along the escape route can be readily located.
4. The emergency lighting should automatically activate within one second of the failure of the normal lighting supply.
5. The emergency lighting system shall be capable of continuous operation for a minimum duration of 1 hour and 30



minutes even for the smallest premises.

**P. Service Duct/Shfts:-**

1. Service ducts & shafts shall be enclosed by walls of 2 hours & doors of 1-hour fire rating.
2. All such ducts shall be properly sealed & fire stopped at all floor level.
3. A vent opening at the top of the service shaft shall be provided having between one fourth & one half of the area of the shaft.

**Q. Electrical Service:-**

1. The electric distribution cable/wiring shall be laid in a separate duct. The duct shall be sealed at every floor with non-combustible materials having the same fire resistance as that of the duct. Low & medium voltage wiring running in shaft and in false ceiling shall run in separate conduits.
2. Water mains, telephone lines, intercom lines, gas pipes or any other service line shall not be laid in the duct for electrical cable, use of bus ducts/ solid rising mains instead of cables is preferred.

**R. Separate Circuit ( if required): -**

1. Separate circuits for fire fighting pumps, lifts, staircases, corridor lighting & blowers for pressuring system shall be provided directly from the main switch gear panel & these circuits shall be laid in separate conduit pipes, so that fire in one circuit will not affect the others.
2. Such circuits shall be protected at origin in an automatic circuit breaker.
3. Master switches controlling essential service circuits shall be clearly labelled.

**S. Fire Control Room ( if required):-**

1. For all building 15 m in height and above, and apartment buildings with a height of 30 m and above, there shall be a control room on the entrance floor of the building with communication system to all floors and facilities for receiving the messages from different floors.
2. Details of all floor plans along with the details of fire fighting equipment and installations shall be displayed in the fire control room.
3. The fire control room shall also have facilities to detect the fire on any floor through indicator board's connection, fire detection and alarm system on all floors.
4. The fire staff in charge of the fire control room shall be responsible for maintenance of the various services and the fire fighting equipment & installations in co-ordination with security electrical & civil staff of the building.

**T. 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. Fire Notice for Fire Fighting and evacuation from the building shall be prepared and be displayed at all vulnerable places of the building.
3. Disposable Type B.A. Musk to be kept always for emergency fire situation.
4. Floor numbers and directional sign, showing the nearest exit, refuge area, and fire points etc. shall have photo luminescent signals at each floor of the building shall be made available conforming I.S. specification.
5. The employees and security staff shall be conversant with installed Fire Fighting equipment of the building and to operate in the event of Fire and Testing.
6. Arrangement shall be made for regular checking, testing and proper maintenance of all the Fire Safety installation and equipment installed in the building to keep them in perfectly good working conditions at all times.
7. A crew of trained Fireman under the experienced Officer shall be maintained round the clock for safety of the building.
8. Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of building.
9. The certificate is 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 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 building in respect of the approved plan drawing, without obtaining prior permission from this office, this Fire Safety Recommendation will be treated as cancelled.

Validity unknown

Digitally Signed  
Name: ABHIJIT PANDAY  
Date: 22-Mar-2024 12:33:29  
Reason: Approved  
Location: West Bengal

DIRECTOR  
West Bengal Fire & Emergency Services

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