



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

Memo no.:FSR/0225186238700735

Date: 27-09-2023

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

To: RANJAN CHAKRABORTY
081,29,SHIBNATH SASTRI SARANI

Sub: Fire Safety Recommendation for proposed construction of B+G+X storied under group Residential Building at the premises no. 29, Shibnath Shastri Sarani, WARD - 81, Borough X under KMC, P.S.- New Alipore, KOLKATA – 700053.

Application Reference : KMC (CAF-2023100122) received on 18-07-2023 regarding the Fire Safety Recommendation for proposed construction of B+G+X storied under group Residential Building at the premises no. 29, Shibnath Shastri Sarani, WARD - 81, Borough X under KMC, P.S.- New Alipore, KOLKATA – 700053.

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.The whole construction of the proposed Residential Building shall be carried out as per approved plan drawings conforming the relevant building rules of local Municipal Body.
- 2.The interior finish decoration of the building shall be made low flame spread materials conforming relevant I.S. specifications.
- 3.Provision of ventilation at the crown of the central core-duct of the building shall be provided.
- 4.Arrangements shall have to be made for sealing of all the vertical & horizontal ducts by the materials of adequate Fire resisting capacity.
- 5.Respective provisions of NBC Part 4, 2016 must be incorporated in respect of construction and maintenance of fire and life safety arrangement for the entire project.

OPEN SPACE & APPROCH:

- 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 space 15 M X 6 M for Fire Service Aerial Ladder shall be

sufficiently strong to withstand the load of Fire Engine weighing up to 45 M.T.

3.The clear width and height of the access gates into the premises shall not be less than 5M & 5 M respecting the abutting road.

EXIT:

1.No exit door from any occupancy of any floor in a distance is not more than the distance as specified in N. B. C. Part -4, 2016. The travel distance to an exit from dead end of a corridor shall not exceed the respective provision of N. B. C. Part -4, 2016.

2.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 shall be no pocket or dead end occurred in which occupants may trap.

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

STAIRCASE:

1.The staircases of the building shall be enclosed type as shown. Entire construction shall be made of bricks/ R.C.C type having Fire resisting capacity not less than 2 hours.

2.The Staircases of the building shall have permanent vents at the top and openable sashes at each floor level in the external wall of the building.

3.The width of the staircases shall be made as marked in the plan. Corridors and the exit doors shall conform the relevant building rules, with up-to-date amendments.

4.All the staircases shall be extended upto terrace of the building and shall be negotiable to each other without entering into any occupied area.

5.Fire and smoke doors (FCD) at the entrances of all the staircases enclosures as marked in the plan at each floor level shall be provided. The F.C.D. shall be of at least two hours Fire resisting wire glass window flitted with self-closing type, openable in the direction of escape.

6.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.

7.Pressurization of staircase of the building, shall be done as per provision of NBC Part 4, 2016.

LIFT:

1.The walls of the lift enclosure of the building shall be at least two hours FIRE resisting type and all the lift lobbies and shafts shall be pressurized as per existing norms and provision of NBC Part 4, 2016.

2.The lifts of the building shall be designed at high speed "Fire Lift" and shall be conspicuously indicated / marked.

3.Exit doors of the lift shafts shall be through a self- closing smoke stop door of 2 hours fire resistance.

4.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.

5.The Electric power shall be from separate supply mains in the building and cables run within the lift shafts, lights 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 to alternate power supply.

6.All other requirements shall conform relevant I.S. specification including the communication facility in the lift cars which shall be connected with the Fire Control Room of the building.

7.A positive pressure of 25 to 30 Pa. shall be maintained inside the lift well. The pressurization, shall be maintained round the clock.

BASEMENT:

1.The Basement shall be adequately ventilated.

2. Automatic 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 exit from the basement shall be from open Air and from any points of safety, the travel distance shall not exceed 15.5 M to reach any exit.

6. The entire basement shall be protected with Automatic Sprinkler System with Hydrants and Hose Reel Hose conforming relevant I.S. specification.

7. The staircase of basement shall be of enclosed type as per existing norms and relevant I.S. specification having Fire resistance of not less than 4 hrs. to be entered at ground level only from the open air and in such positions that smoke from any Fire in the basement shall not obstruct any exit having the ground floor of the building.

REFUGE AREA:

1. The Refuge area of not less than 15 sq. m. shall be provided on the external wall as cantilever projection or any other suitable means at the level as shown in approved plan drawings.

2. Refuge area shall be separated completely from adjacent part of building by means of Fire barrier / wall of 2 (Two) hour rating.

3. The refuge area shall be of Fire resisting construction and protected with self-closing F.C.D. at the entrance.

4. The position of refuge Areas shall be such that they are negotiable by the Fire service Ladder from the ground floor.

5. Fire and Life safety arrangements in Refuge area shall be as per provision of NBC Part 4, 2016.

FIRE FIGHTING WATER:

1. Underground water reservoir having total water capacity of 75,000 L, as shown.

2. Overhead reservoir of not less than 5,000 L Capacity as shown in the plan drawings, exclusively for Fire fighting purpose. Reservoir 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.

Provision of necessary manhole shall be made on the top of this reservoirs as per provision of NBC Part 4, 2016.

4. Provision of replenishment at the rate of at least 1000 lts./min. from two separate sources of water supply shall be made.

5. 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.

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

WATER LAYOUT SYSTEM:

1. The building shall be provided Wet Riser for sprinkler system & hydrant system of 100 mm. internal diameter Pipe Line with provision of 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 2280 lts/min. at the ground floor level outlet and minimum 900 lts/min. at the top most and furthest 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 swivelling drum in conjunction with Wet Riser shall be made near each landing valves.

3.Yard Hydrant / Ring Main Hydrant with provision of adequate numbers of Pillar type Hydrant shall be installed surrounding the buildings in accordance with relevant I.S. specifications.

4.Provision of suitable Fire Service Inlet shall be made as per relevant I.S specification and provision of NBC Part 4, 2016.

SPRINKLER INSTALLATION: The automatic Sprinkler installation shall be provided in Multipurpose Hall, MLCP car parking area, Covered parking area etc. as per I.S. 9972 and provision of NBC Part 4, 2016. Alarm gong to be incorporated along with the sprinkler system.

FIRE PUMP:

1.Provision of the Fire Pump (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 shall always be kept on stand-by preferably of diesel driven type.

3.Provision of Jockey Pump shall also have to be made to keep the Water based suppression systems 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.

4.The Number and type of fire pumps shall be as per provision of N. B. C. Part – 4, 2016.

MULTI LAYER AUTOMATED MECHANIZED CAR PARKING SYSTEM(DOUBLE AND TRIPLE LAYER):

1.Structural design:- The M.L.C.P. shall be constructed of structural steel construction.

2.Vertical Deck Separation:- For M.L.C.P. having Multi Car Parking level, vertical Fire separation between the upper and lower decks by using a non- perforated and non-combustible materials (Structural Steel Plate) shall be provided. Proper drainage system shall have to be provided for accidental leaking of oil from the Car and sand bed shall be provided at the Ground level.

3.Fire Engine Access way:-Access way shall be provided for the Fire Engine to gain access to the car park entrance and exit.

4.Fire Hydrant:- Fire hydrants are to be provided in accordance with the provision of NBC Part 4, 2016 and relevant I.S. specification.

5.Sprinkler & Detection System:-Open Modular Type Sprinkler along with detectors shall be provided in all M.L.C.P. areas as per relevant I. S. Specification.

6.Cross zone wise Sprinkler system shall have to be implemented.

7.Operating System:- Both Mechanical and Manual type operating system for MLCP shall have to be provided.

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

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

4.The electrical installation shall be adequately protected with automatic fire detection and suppression system as per provision of N. B. C. Part– 4, 2016 and relevant I. S. specification.

5.Alternative Power Supply :

Arrangements shall have to be made to supply power with the help of generators of suitable capacity to operate at least the Fire Pump, Pumps for deep Tube-well, Fire Detection and Alarm System, pressurization, ventilation, signage etc. and

also for illuminating the Staircases, corridors etc. and other places of assembly of the building in case of failure of normal power supply.

INTELLIGENCE ANALOGUE SYSTEM:

- 1.Auto Fire Alarm System with analogue addressable smoke / heat detectors as per suitability shall be installed in all floor of the building.
- 2.Addressable analogue manual call boxes incorporating with sounders shall be installed at each floor 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 linked between all floors and Control Room shall have to be established.
- 4.All the installations shall also be satisfy the I.S. specifications 2189 (as amended) and the code of practice as laid down in the N.B.C. Part-4, 2016.
- 5.C. C. Camera & Public Address System :-
Public address system and CC TV surveillance system linked between all floors common areas and a well designed Fire Control Room shall have to be provided with 24 X 7 monitoring arrangement.

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 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.Wherever the ducts pass through Fire wall of floors, the opening around the ducts shall be sealed with Fire resisting materials.
- 7.The metallic ducts shall be used even for the return air.
- 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 ducts 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:-
- 13.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.
- 14.When the automatic Fire alarm operates the respective air handling units of the air conditioning system shall automatically switched off.
- 15.The vertical shaft for treated fresh air shall be of masonry construction.
- 16.The air filters for air handling units shall be of non-combustible materials.
- 17.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.
- 18.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 aluminium sheeting) at least 3.2 cm thick. And which would not readily conduct heat. However, the entire air conditioning system shall be made in accordance with relevant I.S. specification.

Fire Kiosk:

One Fire Kiosk for the proposed building as mentioned there in containing the following fire fighting and rescue equipments:

- i)4 nos. 4.5 kg. CO2 extinguisher.
- ii)4 nos. 4.5 kg. ABC typeextinguisher.
- iii)2 nos. ceiling hook.
- iv)4 nos. Fire Bucket.
- v)1 no. Lock Cutter.
- vi)2 nos. 14 lb. Hammer.
- vii)2 nos. Crowbar.
- viii)1 no. Insulated Axe.
- ix)2 nos. Stretcher.
- x)2 nos. Smoke Hood.
- xi)2 nos. Torch Light.

Details of all floors in all block plans along with details of Fire Fighting equipment and installations shall be maintained in fire kiosk.

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.

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.Lightning arrestor and air craft warning lights shall have to be installed as per existing norms and relevant IS specification.
 - 4.Disposable type B. A. Musk of sufficient quantity to be kept always available for emergency situation.
 - 5.Fire Notice for Fire Fighting and evacuation from the building shall be prepared and be displayed at all vulnerable places of the building.
 - 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 building and to operate in the event of Fire and Testing.
 - 8.The Department of Fire & Emergency Services, Government of West Bengal, shall not take any responsibility in respect of any legal dispute if pending or arises about the title of land / property.
 - 9.This Fire Safety Recommendation cannot be treated in any case of regularizations of any unauthorized construction.
 - 10.The management of the organization / building, as the case may be, shall maintain the fire prevention and safety measures in good repair and in efficient condition at all the times, which are installed in the building for use at the time of fire or other emergencies.
 - 11.A crew of trained Fireman under an experienced officer shall be maintained round the clock for safety of the building.
 - 12.Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of building.
- Accordingly, a certificate is to be obtained from the Director General, West Bengal Fire & Emergency Services certifying about the satisfactory services, performance of all the Fire and Life 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 fire & life safety aspects of

the buildings.

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

DIRECTOR
West Bengal Fire & Emergency Services

Memo No.:FSR/0225186238700735