



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

Memo no.:FSR/0125186209102404

Date: 05-04-2023

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

**To: BENGAL SHRISTI INFRASTRUCTURE DEVELOPMENT LIMITED,SHRISTI NAGAR, ASANSOL, BURDWAN,
PLOT-X-1,2-3 BLOCK-EP SALTLAKE SECTOR-V KOLKATA-700091**

Sub: Revised Fire Safety Recommendation in favor of proposed construction of B+G+XII (Block 3,4 & 5) storied upon a common basement namely "SANGATI" under group Residential Building situated at premises no.- Bengal shristi Infrastructure Limited at affordable housing, Sangati at Shistinagar, Asansol, Burdwan, Pin-713214.

This is in reference to your application no. 0125188239100005 dated 04-03-2023 regarding the Revised Fire Safety Recommendation in favor of proposed construction of B+G+XII (Block 3,4 & 5) storied upon a common basement namely "SANGATI" under group Residential Building situated at premises no.- Bengal shristi Infrastructure Limited at affordable housing, Sangati at Shistinagar, Asansol, Burdwan, Pin-713214.

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 office is issuing **Revised 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 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.The floor area if exceeds 750 Sq./m. shall be suitably compartmented as per provision of N.B.C Part IV 2016 as shown in plan drawing.
- 4.Provision of ventilation at the crown of the Central core-duct of the building shall be provided.
- 5.All the principal staircase shall not be permitted from the basement.
- 6.Services ducts and shafts should be enclosed by a wall/fire proof materials of one hours fire rating. All such ducts shall

be properly sealed at all floor levels.

7. Arrangements shall have to be made for sealing all the vertical & horizontal ducts by the materials of adequate Fire resisting capacity.

B. OPEN SPACE & APPROACH :

1. The open spaces surrounding the building shall conform the relevant building rules as well as permit the accessibility and maneuverability of Fire Appliances with turning facility.

2. The approach roads 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 gates into the premises shall not less than 4.5 Mt. & 5.00 Mt. of respecting abutting the road.

4. All around the driveway should be kept clear for free access.

5. The FCDs shall have to be provided as shown or marked or as per NBC part IV 2016.

C. BASEMENT:

1. Mechanical extractor shall have alternate source of supply.

2. Mechanical extractor shall have inter-locking arrangement so that extracting shall continue operate and supply fans shall stop automatically with the actuation of fire detectors and or sprinkler system with backup by DG set.

3. Mechanical extractor shall be designed to permit 12 ACPH in case of fire or distress call.

4. The basement shall be protected with auto sprinkler system integrated with alarming system and several hydrant points.

D. COMPARTMENT BY WATER CURTAIN:

1. Compartmentalize by water curtain as shown in the plan drawing with the following special provision.

2. The entire piping network shall be connected with correct rated high pressure pump, water curtain panel & dedicated fire detectors/deluge valve.

3. The piping with particle diameter of about 200M.

E. STAIRCASE :

1. The staircase of the building shall be enclosed type. Entire construction shall be made of bricks/R.C.C. type having Fire resisting capacity not less than 4 hours.

2. Both the staircase of the building shall be made of bricks/R.C.C type having Fire resisting capacity not less than 2 hours.

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

4. The width of the staircases shall be made as shown/marked in the plan. Exit doors shall conforming the relevant building rules with up-to-date amendments.

5. The entire staircase shall be extended up to terrace of the building and shall be negotiable to each floor level without entering into any room. The roof of the stair wall shall be min M above the surrounding roof area.

6. The staircases shall be extended up to terrace of the building and shall be negotiable to each other without entering into any occupied area.

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 the regards.

8. Fire and smoke doors at the entrance 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 one hour Fire resisting with wire glass window fitted with self closing type openable in the direction of escape.

9. Considering the staircase are only means of evacuation, Emergency Lighting Arrangement, Directional & Exit signage Etc. shall be made conforming the relevant I.S. code in this regard.

10. One no. principal staircase from ground to roof shall be pressurized as marked in the plan. A positive pressure of 25-30 pa. shall be maintained inside the staircase.

11. No entrance for A.H.U/Electrical unit will be allowed from staircase landing as also no A.H.U or electrical room will be allowed adjacent to the staircase or Fire escape corridor.

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

13.Glazing and glass bricks shall not be used surrounding the staircase.

F.LIFT :

1.The walls of the Lift Enclosure of the building shall be at least two hours Fire Resisting Type respectively marked/as approved in the plan drawing with the vent at top of area not less than 0.2 Sq M.

2.lift lobby as shown or marked in the approved plan drawing from Basement to Ground floor shall be pressurized. A positive pressure of 25-30 Pa. shall be maintained

3.The Lift of the Building shall be designed at high speed FIRE LIFT and conspicuously indication to be pasted

4.One of the lift car of the Building shall be large enough to accommodate standard Ambulance Stretcher and Medical Attendants

5.In case of Failure of Normal Electric Supply, it shall automatically trip over to alternate supply. Alternatively, the lift shall be so wired that in case of power failure, it comes down at the ground floor level and stand still with door open.

6.Arrangement shall be provided for extraction of smoke in all the lift shaft by incorporating smoke venting system designed to permit 12 ACPH in case of fire and shall be of such designed to operate on actuation of sprinkler and/or Fire Alarm. In case of failure of normal electric supply. It shall automatically trip to alternate supply.

7.Exit from Lift Lobby shall if located in the core of the building shall be through Self-Closing FCD of two hours Fire Resisting.

8.The speed of the fire lift car in the building shall be such that it can reach the top from the ground within one Minute and visual indication of floor numbers shall be incorporated in the lift Car.

9.The walls of the lift enclosure shall be at least two hours Fire resisting type. Collapsible gate shall not be permitted.

10. All other requirements shall conform the I.S. Specification including the communication facility in the lift cars connecting to the Fire Control Rooms of the Building.

G. REFUGE AREA:

1. The Refuge areas/ at floor level shall be provided on the external wall as cantilever projection for Residential Buildings as shown in plan drawings not less than 15 Sq. mtr. area or as shown or marked at the designated level 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.FIRE FIGHTING WATER :

Under Ground Water Reservoir of 200,000 ltrs capacity and Over Head Water Reservoir of 10,000 Ltrs each block (Block-3, 4 & 5) capacity exclusively for Fire Fighting purpose with replenishing arrangements @2000 ltrs/min. preferably from two different sources of water shall have to be provided. The water reservoirs shall have overflow arrangement with the domestic water reservoir as well as to prevent stagnancy of water. The water reservoirs shall be kept full at all time.

I.WATER LAYOUT SYSTEM:

1.The building shall be provided with Wet Risers of 150 mm 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 2850 ltrs/min. at the ground floor level outlet and minimum 900 ltrs/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 cum down comer shall be made near each landing valves.

3.Yard Hydrant / Ring Main Hydrant 150 mm with provision of adequate numbers of Pillar type Hydrant shall be installed surrounding the building in accordance with relevant I.S. specifications.

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

J.FIRE PUMP

1.Provision of the Fire Pump 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 building. One such pump shall always be kept on stand-by be of diesel driven type.

2.Provision of Jockey Pump/Stand by Pump shall also have to be made to keep the Water based system 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.

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

K.WATER PROJECTOR PROTECTION

1.The Electric installation viz. transformer (if oil type) switch gear etc. shall be protected by high velocity water projector/DCP modular system as per suitability.

L.SPRINKLER INSTALLATION

1.The automatic Sprinkler installation shall be provided in Basement & ground floor, lobbies of all floors of the building relevant I.S. 9972. Alarm gong to be incorporated along with the sprinkler system.

M.ELECTICAL 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 I.S. specification 1946-1982.

2.Electrical distribution system shall conform all the requirements as laid in I. S. 1646-1982.

3.The electrical installation shall be adequately protected with automatic CO2/DCP.

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

N.ALTERNATIVE POWER SUPPLY

1.Arrangements shall have to be made to supply power with the help of a generator to operate at least the Fire Pump, Pump for deep Tube-well, Fire Alarm System, etc. and also for illuminating the Staircase, corridors etc. and other places of assembly of the buildings in case of normal power failure.

O.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 residential building along with podium including electrical shaft.

2.All floors shall have to be provided with detection system as per feasibility in accordance with prevailing relevant rules.

3.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.

4.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 having direct dialing facility to the local fire service unit.

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

6.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-IV, 2016. 6. C. C. Camera & Public Address System :- Public address system linked between all floors and Fire Control Room shall have to be established. 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 measures.

P.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 auto detection and alarm system.

4.The air handling Units room shall not be used for storage of any combustible materials.

5.The A.H.U. shall be separated for each floor with the system .Air ducts for individual floors.

6.Arrangement shall be made for isolation at the strategic locations by incorporating auto dampers in the air conditioning system.

7.The system of Auto shut down of A.H.U. shall be incorporate with the auto detection and alarm system.

8.Escape route like staircase, common corridors lift lobby etc. shall not be used as return air passage.

9.The A.H.U. room shall not be used for storage of any combustible materials.

10.Arrangements shall be made for isolation at the strategic location by incorporating auto dampers in the Air Conditioning System.

11.Wherever the ducts pass through Fire Wall of Floors, the opening around the ducts shall be sealed with fire resisting materials such as asbestos etc.

12.The metallic ducts shall be used even for the return air instead of space above the false ceiling.

13.The material 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. If the air handling unit serve more than one floor, the recommendation given above shall be complied with in addition as below:---

(a) proper arrangement by way of automatic fire dampers working on fusible link for isolating all ducts at every floor from main riser shall be made.

(b) The vertical shafts for treated fresh air shall be of masonry construction.

(c) The air filter for A.H.U. shall be of non-combustible materials.

(d) The A.H.U. room shall not be used for storing any combustible material.

(e) Inspection panel shall be provided in the main trunk to facilitate the cleaning of ducts of accumulated dust and to obtain access for maintenance of fire dampers.

Q. FIRE DAMPER

1. Fire dampers shall be located in conditional air ducts and return air ducts/passage at the following points:--

1)at the fire separation wall.

2) there ducts/passage enter the central vertical shaft.

3) where the ducts pass through floors.

4) at the inlet of supply air duct and the return air duct of each compartment in every floor.

5) The damper shall operate automatically and shall simultaneously switch off the air Handling fans. Manual operation facilities shall also be provided.

6) Automatic Fire Dampers Shall be so arranged so as to close by gravity in the direction of air movement and to remain rightly closed open operation of a fusible link.

R.FIRST AID FIRE FIGHTING SYSTEM:

First Aid firefighting arrangement in the style of placing suitable type of portable Fire Extinguishers, Fire buckets etc in all floors, basements and vulnerable locations of the premises shall be made in accordance with I.S. 2190-92.

S.FIRE OFFICER:

- 1.A qualified Fire Officer with Experience of not less than 3 years shall be appointed who will be available on the premises.
- 2.Shall Maintain the firefighting equipment in good Working condition at all time.
- 3.Shall prepare fire order and fire operational plans and get them promulgated.
- 4.Shall impart regular training to the occupants of the building in the use of fire fighting equipments provided in the premises and keep them informed about the fire emergency evacuation plan.
- 5.Shall proper liason with the city Fire Brigade.
- 6.Shall ensure that fire precautionary measures are observed at the times.

T.PUBLIC ADDRESS SYSTEM & TALK BACK SYSTEM:

Public address system linked between all floors and control Room shall have to be established.

U.GENERAL RECOMMENDATION :

- 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.Fire Notice for Fire Fighting and evacuation from the building shall be prepared and be displayed at all vulnerable places of the building.
- 3.Floor numbers and directional sign of escape route shall be displayed prominently.
- 4.The occupancy and security staff shall be conversant with installed Fire Fighting equipments of the building and to operate in the event of Fire and Testing.
- 5.Arrangement shall be made for regular checking, testing and proper maintenance of all the Fire Safety installation and equipments installed in the building to keep them in perfectly good working conditions at all times.
- 6.Disposable type B.A. musk of sufficient quantity to be kept always available for emergency situation.
- 7.A crew of trained fireman under the experienced officer shall be maintained round the clock for safety of the building.
- 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.Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of the building.

On compliance of all the above Fire and Life Safety Recommendation, the Director General, West Bengal Fire & Emergency Services shall be approached for necessary inspection and testing of the installation, Fire Safety Certificate in favor of the occupancy shall be issued on being satisfied with the test and performance 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 Revised Fire Safety Recommendation will be treated as cancelled.

Director
West Bengal Fire & Emergency Services

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