



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

Memo no.:FSR/0125186229100346

Date: 19-12-2022

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

**To: Bengal Shristi Infrastructure Development Ltd**  
**SHRISTINAGAR,SEN RALEIGH ROAD,ASANSOL-713305**

**Sub: Fire Safety Recommendation for the proposed Construction of B+G+16 storied Building in six numbers Blocks/Tower and one no of Amenity Block (Ground Floor), Principal Occupancy Group Residential at PHASE-2, Shristinagar, Asansol, Plot no.-1709(P), 1711, 1712(P), 1713, 1714, 1715, 1716, 1717, 1718, 1719(P), 1720(P), 1721(P), 1977, 1978 of Mouza-Ganrui, J.L. No.-12 And Plot No.-389(P), 391(P), 388(P), of Mouza-Gobindapur, J.L. No.-18. Under Asansol Municipal Corporation, P.S.-Asansol (North & South), Paschim Bardhaman-713305.**

This is in reference to your application no. 0125186229100346 dated 07-11-2022 regarding the Fire Safety Recommendation for the proposed Construction of B+G+16 storied Building in six numbers Blocks/Tower and one no of Amenity Block (Ground Floor), Principal Occupancy Group Residential at PHASE-2, Shristinagar, Asansol, Plot no.-1709(P), 1711, 1712(P), 1713, 1714, 1715, 1716, 1717, 1718, 1719(P), 1720(P), 1721(P), 1977, 1978 of Mouza-Ganrui, J.L. No.-12 And Plot No.-389(P), 391(P), 388(P), of Mouza-Gobindapur, J.L. No.-18. Under Asansol Municipal Corporation, P.S.-Asansol (North & South), Paschim Bardhaman-713305.

**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 existing building shall be carried out as per approved plan drawings conforming the relevant building rules of Kolkata Municipal Corporation and shall remain same as per approved plan of this department.
2. Any deviation with regard to the construction shall be verified by the concerned building sanctioning authority.
3. Material for rapid flame spread categories including untreated wood fibred board etc. shall not be used. The doors and windows preferably shall be made of metal.
4. The interior finish decoration of the building shall be made low flame spread and low smoke and low toxic gas generating categories materials conforming I.S. specifications.
5. Provision of ventilation at the crown of the central core-duct of the building shall be provided.

6. Arrangement shall have to be made for sealing all the vertical and horizontal ducts by the materials of adequate fire resisting capacity.
7. The floor area exceeds 750m<sup>2</sup> shall be suitably compartmented by separation walls up to ceiling level having at least two/four hours Fire resisting capacity, Sprinkler system should be provided as per N.B.C Part IV.
8. All the new construction that to be done for the fulfilment of the fire safety recommendation should be tested for fire rating test and the test certificate should be submitted to the office.

#### B. OPEN SPACE AND APPROACH:

1. The open spaces 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 Appliance with turning facility.
2. Drive way should be free from any type of obstruction. No parking will be allowed on the drive way.
3. All the Passage way should be kept clear for free access. The abutting road shall permit the accessibility and manoeuvrability of Fire Appliances.
4. The width and height of the access gates into the premises shall be less than 4.5mtrs & 5.0 mtrs respectively (as marked in the plan drawing) respecting abutting the road.

#### C. 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. Fire and smoke doors at the entrances of all the staircase enclosures as shown in the plan at each floor level shall be provided. The F.C.D. shall be of at least one hour Fire Resisting wire glass window fitted with self-closing type open able in the direction of escape or at the entrance to lift lobby and stair well..
3. The entire staircase shall be extended up to terrace of the building and shall be negotiable to each floor and also to other staircase.
4. Considering the staircases are only means of evacuation, emergency lighting arrangement directional exit sign etc. shall be made confirming 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. Exit 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 horizontal exit of a corridor.
3. Travel distance should not be more than 15 M from any dead end of the factory.

#### E. LIFT:

1. The walls of the lift enclosure of the building shall be at least two hours Fire Resisting type. Collapsible gate shall not be permitted.
2. In case of failure of normal electric supply, it shall automatically trip over to alternate supply. The lift shall be so wired that in case of power failure, it comes down at the ground level landing to stand still with door open.
3. Arrangement shall be provided for extraction of smoke from the lift shaft by incorporation smoke venting system and shall be of such design as to operate on actuation of sprinkler or Fire Alarm. In case of failure of normal electric supply it

shall automatically trip to alternate supply.

4. At least one no. passenger lift of the building shall be designated as high speed "Fire Lift" and conspicuously indicated at ground floor "FIRE LIFT". The speed of the fire lift 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. All other requirements shall conform the I.S. specification including the communication facility in the lift cars connecting with the Fire Control Room of the building.

#### F. FIRE REFUSE AREA:

1. Refuge area shall not be less than 15.0 SQ. M. and shall be provided on the external wall with cantilever projection or other suitable means at above 25 M, 40 M, and 52 M, levels of the building as shown in the plan drawing.

2. The refuge areas shall be of fire resisting construction and protected with self closing F.C.D. at the entrance from the corridors to staircase lobbies.

3. The position of refuse area shall be in such manner so that it shall be negotiable by the Fire Service Ladder from the driveway/Ground Floor. For placing of Fire Service High Rise Ladder necessary clearance and turning facility shall be maintained.

5. Subject to space of 9 meter X 15 meter must be kept free for aerial ladder, starting from the edge of each and every Refuge area, below each and every Refuse area.

#### G. BASEMENT:

1. The Basement shall be adequately ventilated with aggregate cross sectional area of not less than 2.5% of the area spread evenly round the perimeter of the basement shall be provided in the form of grills.

2. The Exit from the basement shall be form open air and form any points of travel distance shall not be exceeds 18.5 M to reach any exit shall be constructed beside the ramps conforming relevant I.S. Specification.

3. The Staircase of basement shall be enclosed type having Fire resistance of not less than 4 hrs. and shall be situated at the periphery of the basement 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 upper floor of the building.

3.. Mechanical smoke venting arrangements shall be provided to the basement with auto and manual start facility conforming the I.S. Specification.

4. Mechanical extractors shall have an alternative source of supply.

5. Mechanical extractors shall have an internal locking arrangement so that extracting shall continue to operate and supply fans shall stop automatically with the actuation of sprinklers.

5. Continuation of staircase from the basement to upper floor will not be allowed.

7. The entire basement shall be protected with Auto Sprinkler system, Hose reel system, Hydrant system and suitable type of Detector conforming to I. S. Specification 3844-1989.

8. Mechanical extractor for smoke venting system from lower/upper basement levels shall also be provided. The system shall be of such design as to operate on actuation of hear/smoke sensitive detection or sprinkling. It shall also have an arrangement to start it manually.

9. Lift and Lift Lobby communicate to the basement shall be pressurized type .

#### H. ELECTRICAL INSTALLATION AND DISTRIBUTION:

1. The electrical installation including Transformers (if any), Switch Gear, 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. For every 230V 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. The other electric rooms shall be at least 4 hrs. Fire resisting capacity. Adequate ventilation arrangement shall have to be made in all the rooms.
3. The vertical and horizontal electrical supply ducts shall be sealed at each floor level by fire resisting materials.
4. The electrical installation shall be adequately protected with CO2/D.C.P. or Projection System Fire Extinguishers conforming I.S. specification.
5. All electrical installation viz. Transformers (if any), Switch Gear, H.T rooms shall be protected with both auto detection and suppression system as per suitability.
6. 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 the earth. Cables shall be I.S. marked and preferable be of F.R.L.S. categories. M.C.B. shall be installed in electrical circuit to avoid electrical fire hazards.
7. Switch, wire should be of I.S. Approved.
8. Alternative Power Supply :Arrangement for alternative power supply shall have to be made to supply power with the help of a generator to operate at least the Fire Pump, Deep Tube-Well Pump, Fire Alarm System, Fire Lift etc. and also for illuminating the Staircase, Corridors, Lobbies etc. and other places of assembly of the building in case of normal power failure.

#### I. FIRE FIGHTING WATER:

1. The Underground water reservoir having water capacity of 2,00,000 Ltrs. (Shown in the plan) And Overhead water reservoir having capacity of 10,000 Ltrs. (Shown in the plan) exclusively for fire fighting purpose shall be provided.
2. Provision of replenishing arrangements at least @2000 Ltrs./Mins. preferably from two different sources of water supply shall be provided.
3. The water reservoirs shall have overflow arrangement with the domestic water reservoir as well as to avert stagnancy of water. The water reservoir shall be kept full at all time.
4. Provision of Fire Service inlet shall be installed on the entrance of the building.

#### J. WATER LAYOUT SYSTEM

1. The building shall be provided with Wet Riser, cum Down Comer and Hose Reel unit of 150 mm internal diameter pipe line with provision of landing valves/outlets in each floor at the staircase landing/half landing as per suitable at the rate of one such unit of Wet Riser and Standard Hose Reel Hose for per 1000 SQ. M. of floor area shall have to be made in all the areas of the building satisfy the code of IS.-3844-1989.
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 at the ground floor level outlet and minimum 900 Lts/min at the top most outlet. In both cases the running pressure shall not be less than 3.5 Kgs/cm<sup>2</sup>. At any point. All other requirements shall conform I.S. 3844-1989.
3. The Wet Riser installation shall be made in reference to the height of the building in stage wise distributions.

1st Stage Ground Floor to 10th Floor 150 mm. dia. Single Hydrant outlet of Tower 8 to 13.

2nd Stage 10th Floor to Top Floor 100 mm. dia. Hydrant outlet of Tower 8 to 13.

4. Provision of Hose Reel unit on swivelling drum in conjunction with wet Riser near each landing valves of each floor level of the building shall be made conforming the relevant I.S. Specifications 3844-1989.
5. Provision of standard Hose Reel Hose supplied from the overhead reservoir through Booster Pump shall have to be made in all the floor of the building satisfy the code of I.S. 3844-1989.
6. Provision of Pillar type hydrants with containing 2 lengths of 63 mm delivery hose with short branch kept inside the hose boxes be provided at all the strategic location and surrounding the Tower / or besides the landing each valve shall be made

conforming the relevant I.S. Specifications 3844-1989 (up to date amendment ) and TAC.

7. All other requirements of the water based fire protection system shall made as per I.S. specification 3844-1989.

8. Sufficient no's of ring main hydrant with monitor should be installed in all the Tower area.

a. AUTOMATIC SPRINKLER INSTALLATION:

i. All floors of the building and basement area shall be suitable protected by automatic Sprinkler installation conforming the grade as per I.S. Specification 9972. Alarm gang to be incorporated along with the sprinkler system.

ii. The Sprinkler arrangement shall be laid out in Zone wise distribution.

Zone 1- Ground floor to 10th Floor of Tower 8 to 13.

Zone 2- 10th Floor to Top Floor of Tower 8 to 13

iii. Sprinkler System shall have to be installed in all the floors of car Parking areas (Basement) in residential Building Sprinkler system also shall have to be incorporated in the stair case & Lift lobby including living / Dining of each apartment/Flat.

b. WATER PROJECTION PROTECTION :

i. The Electrical installations viz. transformer, HT, LT switch gear etc. shall be protected by high or medium velocity Water Projector System as per suitability.

K. FIRE PUMP :

4. The provision of Fire Pump shall have to be made to supply water should not be less than 2280 LTRS./MIN. and pressure at the top and furthestmost hydrant not less than 3.5 KGS./SQ.CM2. discharge into water based system, which shall be installed in the building.

5. A Separate Sprinkler Pump of equal capacity shall be provided for the total Sprinkler Installation of the building.

6. A Stand by Pump of equal capacity shall be provided on alternative source of supply preferable be of diesel driven type.

7. Provision of jockey pump shall also have to be made to keep up the water based system under pressurized condition at all the time. The running pressure shall not be less than 3.5 Kgs/Sq.cm2. All other requirements shall conform I.S. Specification 3844-1989.

8. All the pumps shall be incorporated with both manual and auto starting facility with alternate power supply.

9. Fire Pump room shall be provided in the place/basement as shown in the plan drawing or suitable place in the basement without obstructing driveways.

10. The suction of pump shall be 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. MANUAL / AUTO DETECTION & ALARM /SUPPRESSION / INTELLIGENCE ANALOGUE SYSTEM:

1. Manually operated Electrical Fire Alarm System with at least one/two/three numbers of break glass type call boxes fitted with Hooters along with public address system, talk back system at each floor connecting with audio-visual panel board shall be made in Control Room.

2. Auto fire detection system with the help of heat and smoke detector shall be installed in all places of below and preferable above ceiling of the building. The system shall also be made in places of rooms where valuable articles have been kept. The other requirements of the system shall be made in accordance with I.S. 2189-1988.

3. Hooter will be sounded in such a manner so that an operation of a Detector or Manual Call Point. Hooters will Sound on

the same floor and immediate alternate floor.

4. Auto Fire Alarm System with analogue addressable smoke/heat detectors as per suitability shall be installed in all floor area of the building (including basement), storage area, Blending area, and other storage area for early detection and suppression of Fire except Car parking Area.

5. Both Way Public address system (with Talk back facilities) shall be made available in and linked between all floors of the building and the system shall be connected to the main control room.

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.

#### M. 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. 2190-1992.

#### N. 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. Natural ventilation of each room of each Flats of each Tower shall have to be provided by projecting window.

3. Fire Notice for Fire Fighting and evacuation from the building shall be prepared and be displayed at all vulnerable places of the building.

4. Directional sign of escape route shall display prominently.

5. Floor numbers and directional sign, showing the nearest exit Refuge Area, Fire Points etc. shall have photo luminescent signals at each floor of all blocks of building including shall be made available conforming the relevant I.S. Specification.

6. "EXIT / ENTRANCE" sign must be clearly visible even in dark in English, Hindi and also in local Language i.e. Bengali.)..

7. The occupants, employees and security staffs shall be conversant with installed Fire Fighting Equipments of the building 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 and means of escapes installed in the building to keep them in perfectly good working conditions at all times.

9. A crew of trained Fireman under a qualified/experience officer shall be maintained round the clock for the safety of the building.

10. Mock Fire practice and Evacuation Drill shall be performed periodically with participation of all occupants of the building.

11. Drill must be acquainted with evacuation passage of escape route by practicing as a drill with all occupants (technical and non technical staff along with administrator by the guidance of head of institution) as a drill every month as a special duty and records of which must be kept in their custody.

12. Proper house-keeping should be maintained so that combustible materials are not accumulating here and there inside/outside the Block/Tower to avoid any unwanted situation.

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