



Government of West Bengal

Office of the Divisional Fire Officer

West Bengal Fire & Emergency Services

First Floor of Duragapur Fire Station, Durgapur City Centre, P.O.: Durgapur, P.S.: Durgapur, Pin:- 713216

Memo No.: FSR/211862406300003387

Date : 18-09-2024

From :  
Divisional Fire Officer  
Paschim Bardhaman  
West Bengal Fire & Emergency Services

To :  
Proposed G+13 Storied Residential Building (block A,b,c) Of Mrs Sikha Mondal, Mrs. Barka Lal Chandani, Mr Sanjay Lal Chandani, Kalo Baran Mondal, Ashok Kumar (developed By Aayra Infrastructure).  
L.R and R.S Plot no.2779, L.R Kh no.3992, 4092, 4689, J.L no.52, Mouza Andal, P.S Andal, Dist. Paschim Bardhaman.

Sub: Fire Safety Recommendation for proposed construction of three numbers G+13 storied Residential Blocks under a common premises in favour of Mrs Sikha Mondal, Mrs. Barka Lal Chandani, Mr Sanjay Lal Chandani, Kalo Baran Mondal, Ashok Kumar (developed By Aayra Infrastructure) over LR & RS Plot No. – 2779, LR Khatian No. – 3992, 4092, 4689, 4690, 4734, Mouza-Andal, J L No.-52, PS-Andal, Dist. – Paschim Bardhaman, PIN-713321..

This is in reference to your AIN 211862406300003387 dated 16-Sep-2024 regarding Fire Safety Recommendation for proposed construction of three numbers G+13 storied Residential Blocks under a common premises in favour of Mrs Sikha Mondal, Mrs. Barka Lal Chandani, Mr Sanjay Lal Chandani, Kalo Baran Mondal, Ashok Kumar (developed By Aayra Infrastructure) over LR & RS Plot No. – 2779, LR Khatian No. – 3992, 4092, 4689, 4690, 4734, Mouza-Andal, J L No.-52, PS-Andal, Dist. – Paschim Bardhaman, PIN-713321.

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 Fire Safety Recommendation in favor of the aforesaid building for compliance of the following fire safety measure.

**Recommendation :**

**A. CONSTRUCTION:**

1. Materials for rapid flame, toxic smoke / fumes spread materials / categories including untreated wood fiber board etc. shall not be used.
2. 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 /Kolkata Municipal Corporation.



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3. The floor area exceeds 750 Sq.Mts. shall be suitably compartmented by separation walls up to ceiling level having at least two hours Fire resisting capacity.

4. The interior finish decoration of the building shall be made with low flame spread materials conforming I.S. specifications.

5. Provision of ventilation at the crown of the central core-duct of the building shall be provided.

6. Arrangements shall have to be made for sealing all the vertical and horizontal ducts by the materials of adequate Fire resisting capacity & the doors of service ducts / shafts of 2 hr. fire rating.

**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 maneuverability of Fire appliances with turning facility.

2. The approach road & internal drive ways shall be sufficiently strong to withstand the load of Fire Engine weighting up to 45 M.T.

3. The width and height of the access gates into the premises shall not be less than 4.5 Mts. and 5 Mts. respecting the abutting road.

**C. STAIRCASE:**

1. The staircases of buildings 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. The staircase 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 conforming the relevant building rules with up to date amendment.

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

5. All principal staircases from ground to top floor shall be pressurized as marked in the plan. A positive pressure of 50 pa. shall be maintained inside the staircases. Pressurization system shall operate automatically / manually on actuation of fire alarm system & sprinkler system.

6. Fire and smoke doors at the entrances of all the staircase 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 wire glass window fitted with self-closing type openable in the direction of escape.

**D. LIFT:**

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

2. One of the lift shall be designed for Fire Lift. The word "FIRE LIFT" shall conspicuously written at ground floor.

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

4. Arrangement 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 shall be of such design as to operate on actuation of Sprinkler or Fire Alarm.

5. Exit from the lift body if located in the core of the building, shall be through a self-closing smoke stop door of 1 hour fire resistance.

6. 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.

7. Alternate source of power supply shall be provided for all lifts through manually operated change over switch.

8. The Speed of the fire lift shall be such that it can reach the top floor from ground level within One minute.

**E. REFUGE AREA:**

1. Refuge area not less than 15 sq. m. in area or area equivalent to 0.3 m<sup>2</sup> per person to accommodate the occupants of two consecutive floors, whichever is higher, shall be provided on the external wall with cantilever projection or other suitable means at levels of the building as shown in the drawing.

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 in such a manner for easy operation of hydraulic platform from the ground level.

**F. FIRE FIGHTING WATER:**

1. Common Underground Water Reservoir exclusively for Fire Fighting operation having minimum Capacity of 100000 Liters is to be kept full at all time.
2. Overhead Water Reservoirs for Fire Fighting shall be kept full at all time of Capacity 15000 Liters in roof of all blocks.
3. The Fire water reservoir shall have overflow arrangement with the domestic reservoir to avert stagnancy of water.
4. Provision of necessary manhole shall be made on the top of the reservoir as per specification.
5. Provision of replenishment at the rate of at least 1000 lts./min. from two separate source of water supplies shall be made.
6. The deep tube wells for the replenishment of the reservoir shall be incorporated with the auto starting facility with the 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 on the underground water reservoir is to be made to draw water in case of emergency.

**G. WATER LAYOUT SYSTEM :**

**a. Ring Main Hydrant System :**

1. 150 mm diameter Ring Main water layout arrangement along with adequate nos. 3 way Fire Service inlet covering the entire premises of the site 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 the strategic location surrounding the buildings along with adequate nos. Fire Service inlet to be installed conforming I. S. 3844 – 1989 (upto date amendment).
2. The system shall be so designed that shall always be kept charged with water under pressure and capable to discharge min. 900 lts. / min. at the pressure 3.5kg / sq.cm. at any point.

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

1. All buildings shall be provided with Wet Riser and Hose Reel unit provision of outlets in each floor at the staircases landings / half landings as per suitable at the rate of one such Wet Riser and Hose Reel per 1000sq.m. of floor area.
2. The Wet Riser installation in buildings shall be made in reference to the height of the buildings in stage wise distributions.

All other requirements of the water base Fire Protection System shall be made as per I. S.

**H. SPRINKLER INSTALLATION :**

1. The Automatic Sprinkler installation shall be provided in all Mercantile floors of Block A. Sprinklers shall be fed water from both UGWR and OHWR.

**I. FIRE PUMP**

Required number of Sets of Fire Fighting Pumps as per following Set shall be installed:

1. Main Pump: 1 number with specifications: Head: 75-MWC, Capacity: 2850 LPM, Driven by: Electric.
2. Jockey Pump: 1 number with specifications: Head: 102-MWC, Capacity: 180 LPM, Driven by: Electric.
3. Standby Pump: 1 number with specifications: Head: 75-MWC, Capacity: 2850 LPM, Driven by: Diesel.

All the pumps shall be incorporated with both manual and auto starting facilities. The suction of pumps shall preferably of positive type.

**J. ELECTRICAL 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 building as laid down in the I.S. specification 1946-1982.
2. The vertical ducts shall be supply sealed at alternative floor level.
3. The electrical installation shall be adequately protected with CO2/D.C.P. or Medium Velocity Projector System.
4. Alternative Power Supply :

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



**K. DETECTION, ALARM AND SUPPRESSION SYSTEM :**

1. Manually operated Electrical Fire Alarm System with at least three numbers of break glass type call boxes fitted with Hooters along with public address system, talk back system at each floor of all buildings connecting with audio-visual panel board shall be made in Control Room. The Control Room shall be located at the entrance of Ground Floor of the buildings, other requirements of the system shall be made conforming I.S. 2189-1988.
2. Auto fire detection system with the help of Heat and smoke detector shall be installed in all Mercantile floors of Block A. 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. The suppression system shall be made with Fire Extinguishers and total flooding system with CO<sub>2</sub> /F.M.-200 particularly in computer and Electrical processing and data room and in a room of irreplaceable articles.
4. Hooter will be sounded in such a manner so that an operation of a Detector or Manual Call Point Hooters will be sounded on the same floor and immediate alternate floor.
5. Public Address System :  
Public Address System linked between all floors and Control Room shall have to be established.

**L. 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. In the event of a break down of the air-conditioning plant, alternate arrangements should be available for ventilation and air circulation.
3. Arrangement shall be made for isolation at the strategic locations by incorporating auto dampers in the Air Conditioning System.
4. The Air Handling Units room shall not be used for storage of any combustible materials.
5. Arrangement shall be made for isolation at the strategic locations by incorporating auto dampers in the Air Conditioning System.
6. The system of auto shut down of AHU shall be incorporated with the auto detection and alarm system.
7. Escape route like staircase, common corridors, lift lobby etc. shall not be used as return air passage.
8. Whenever the ducts pass through Fire wall of floors, the opening arounding the ducts shall be sealed with Fire resisting materials such as asbestors rope vermiculite concrete etc.
9. The metallic ducts shall be used even for the return air instead of space above the false ceiling.
10. 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.
11. 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.
12. Air duct services main floor area, corridors etc. shall not pass through the staircase enclosures.
13. 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.
14. 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 fuseable link for isolating all ducting at every floor from the main riser shall be made.
  - b. When the automatic Fire alarm operators 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 noncombustible materials.
17. The air handling unit room shall not be storage of any combustible materials.
18. Inspection panel shall be provided in the main trucking to facilitate the cleaning of ducts of accumulated dust and to obtain access for maintenance of fire dampers.
19. No combustible materials shall be fixed nearer than 15cm to any duct unless such duct properly enclosed and protected with noncombustible 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.

**M. FIRE DAMPER :**

1. Fire damper shall be located in air ducts and return air duct / passages at the following point.
  - a. At the fire separation wall.



- b. There ducts / passage enter the central vertical shaft.
- c. Where the ducts pass through floors.
- d. At the inlet of supply Air Duct and the return air duct of each compartment on every floor.
2. The dampers shall operate automatically and shall simultaneously switch off the air handling fans. Manual operation facilities shall also be provided.
3. 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.

**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. 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 buildings so that all people connected with the building shall be acquainted with their contents.
3. Floor numbers and directional sign of escape route shall be displayed prominently.
4. 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.
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. A crew of trained Fireman under the experienced Officer shall be maintained round the clock for safety of the building.
7. Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of the building.
8. Close circuit T.V. shall have to be provided for the entire floor area including the basement area of the building. Each year a certificate is to be obtained from the Director General, West Bengal Fire & Emergency Services certifying about the satisfactory services, performances of all 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; Final N.O.C. 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.

**Memo No.: FSR/211862406300003387**



**Signature valid**

Digitally Signed,  
Name: RATAN KUMAR HALDER  
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**Divisional Fire Officer**

**West Bengal Fire & Emergency Services**

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