सत्यमेव जयते

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

Memo no.:Memo no:FSR/0125186211300102 Date: 06-10-2023

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

To: IDEAL RIVERVIEW PROJECTS PVT. LTD.
Eden Realty Ventures Pvt. Ltd., Metropolitan Building, 7 J.L. Nehru Road, Kolkata-700013

Sub: Revised Fire Safety Recommendation for a Residential Complex comprising of 06 Nos. G+12 storied (39.925 M.), 02 Nos. G+18 storied (58.075 M.) & 05 Nos. G+28 storied (93.40 M.) Affordable Housing along with a Single Layer Central Basement & Podium under Pradhan Mantri Awas Yojana at premises no.- 39/1, Shalimar Road, Mouza Shibpur Sheet No.- 169, 170, 179, 180, J.L.No.- 1, 63, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 24, 1, 2, 11, P.S.- Shibpur, Ward No.- 39, Borough.- VI, Dist.- Howrah- 711103, under Howrah Municipal Corporation, West Bengal.

This is in reference to your application no. 0125188231300041 dated 11-09-2023 regarding the Revised Fire Safety Recommendation for a Residential Complex comprising of 06 Nos. G+12 storied (39.925 M.), 02 Nos. G+18 storied (58.075 M.) & 05 Nos. G+28 storied (93.40 M.) Affordable Housing along with a Single Layer Central Basement & Podium under Pradhan Mantri Awas Yojana at premises no.- 39/1, Shalimar Road, Mouza Shibpur Sheet No.- 169, 170, 179, 180, J.L.No.- 1, 63, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 24, 1, 2, 11, P.S.- Shibpur, Ward No.- 39, Borough.- VI, Dist.- Howrah- 711103, under Howrah Municipal Corporation, West Bengal.

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:
Please follow the earlier issued Fire Safety Recommendation vide memo no- FSR/0125186211300102 Dt.- 09/04/2021., with addition of below mentioned recommendations :-

A. CONSTRUCTION:

1. The whole construction of the proposed buildings as well as existing shall be carried out as per approved plan drawings conforming the relevant buildings rules of local Municipal Body.

2. The interior finish decoration of the buildings shall be made of low flame spread materials conforming to I.S. specifications.

3. Provision of ventilation at the crown of the central core-duct of the buildings shall be provided.

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

B. OPEN SPACE & APPROACH:

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

2. The approach road 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 and 5 M respecting abutting the road.

4. The Drive way as shown/approved shall be free from any obstruction for free movement of Fire Service Vehicle.

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

C. STAIRCASE:

•Pressurized Staircase from Ground to top Floor level shall be pressurized as marked or approved in the plan drawing. A positive pressure of 25-30 Pa shall be maintained in the Staircase. Pressurization shall be maintained round the Clock.

•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.

•The staircase of the building shall have permanent vents at the top equal to 5% of the Cross Sectional Area of the Staircase enclosure and openable sashes at each floor level equal to 15% of the said cross sectional area shall have to be provided in the external wall of the building and open able sashes will be in the external wall of the building

• The width of the staircases shall be made as marked/approved in the plan. Corridors and the exit Doors shall conforming the relevant Building Rules

•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. 1 M above the surrounding roof Area.

• Fire and Smoke doors at the entrances of all the Staircase enclosures as marked/approved in the plan at each floor level shall be provided. The F.C.D. shall be of at least one 02 hours Fire resisting wire glass window fitted with self closing type open able in the direction of escape.

•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

D. LIFT:

•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.

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

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

Attendants.

•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 land stand still with door open.

•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.

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

•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.

•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.

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

E. Refuge Area :

•Refuge Area shall not be less than 15 Sq M on the external wall with cantilever projection at the designated height as per NBC Part-IV 2016

•The refuge area shall be of Fire Resisting Construction and protected with Self Closing FCD at the entrance from the Staircase shaft.

•The projected refuge area shall be surrounded by 1 M high wall and opening to the refuge area from utility or any utility shall not be allowed.

•There shall be marked an area 9*15 below each refuge platform.

•No opening/window shall be allowed on refuge area.

F. FIRE FIGHTING WATER:

Under Ground Water Reservoir of 400,000 ltrs capacity and Over Head Water Reservoir of 20,000 Ltrs (each tower as shown in plan) 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.

G. WATER LAYOUT SYSTEM:

1.The building shall be provided with Wet Riser of 150 mm internal diameter pipe line with provision of landing values 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 lts/min at the ground floor level outlet and minimum 900 Lts/min at the top most outlets. In both cases the running pressure shall not be less that 3.5 Kgs/Cm2.All other requirements shall conform I.S. 3844-1989.

2.Provision for Hose Reel in conjunction with Wet Riser shall be made at each floor level. Conforming the relevant I.S. Specifications.

3.Yard Hydrant / Ring Main Hydrant (150 MM dia piping) with provision of Adequate Hydrant shall be installed surrounding the building in accordance with relevant I.S.Specification.

4.The Wet Riser installation shall be made in reference to the height of the building in stage wise distributions.

5.Nos. of Fire Pumps and capacity of Fire Water Reservoir shall be according to Table -7 and see note 10, 11 23 and 24.

6.Provision for Hose Reel units on swiveling drum in conjunction with Wet Riser cum down comer shall be made near each landing valves.

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

H. FIRE PUMP:

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

3. Provision of separate fire pump for sprinkler system in zone wise as in case of hydrant recommended above shall have to be made to keep the Water based system under pressurized condition at all the time and shall be installed.

4. Provision of separate Jockey Pumps shall also have to be made to keep the Water based suppression systems i.e. hydrant and sprinkler system separately 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. The Fire Pumps shall be multi stage and multi outlet creating pressure zones. The Number and type of fire pumps shall be as per provision of N. B. C. Part – IV, 2016.

I. Sprinkler Installation:

The automatic Sprinkler installation shall be provided in all floor areas of the Residential Building , clubs, basements area as per provision of NBC Part – IV, 2016 and relevant I.S. 9972. Alarm gong to be incorporated along with the sprinkler system.
•Separate Wet Riser are preferable to be provided with other accessories at all floor level in order to maintain designated pressure.

•The sprinkler arrangement shall be laid out in separate riser and zone-wise distribution.

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 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/D.C.P.
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.

K. Alternative Power Supply:

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, smoke extraction system, damper system, escape route, pressurization fans/blowers, smoke extraction system, etc. and other places of assembly of the buildings in case of normal power failure.

L. Smoke Management System :-
•The basement shall be installed with jet fans and electrical/mechanical smoke extractors for emergency smoke evacuation

in order to achieve 12 air change per hour.

M. Fire Shaft :-

•Separate fire fighting shaft integrated with pressurised stair and lift lobby shall be provided to facilitate fire fighting during emergency.

N. Smoke Management System :-

•Automatic Smoke Venting system by installing sufficient mechanical/electrical smoke exhauster integrated with auto detection system shall be installed at basement and all sealed portion of the building which are not covered by the pressurization system.

O. Gas Bank :-

•The LPG Banks shall be installed with adequate Gas Sensor integrated with MVWSP system and design shall be conforming S/L 4.1.5 & 4.1.6 of the aforesaid IS code of practice and fire service license to be obtained for such LPG gas bank.

P. 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.

Q. AIR CONDITIONING SYSTEM: (If any)

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

•Arrangement shall be made for isolation at the strategic locations by incorporating auto dampers in the Air Conditioning system.

•The system of auto shut down of A.H.U. shall be incorporated with auto detection and alarm system.

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

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

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

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

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

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

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

•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.
•The metallic ducts shall be used even for the return air instead of space above the false ceiling.
•The material used for insulating the duct system (inside or outside) shall be of non-combustibl 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.
R. FIRE DAMPER:--

•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.

S. FIRSTAID 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, basements and vulnerable locations of the premises shall be made in accordance with I.S. 2190-92.

T. Fire Officer:- A qualified Fire Officer with Experience of not less than 3 years shall be appointed who will be available on the premises.
•Shall Maintain the firefighting equipment in good Working condition at all time.
•Shall prepare fire order and fire operational plans and get them promulgated.
•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.
•Shall proper liason with the city Fire Brigade.
•Shall ensure that fire precautionary measures are observed at the times.
U. Public Address System and Talk back system :
Public address system linked between all floors and control Room shall have to be established.
V. GENERAL RECOMMENDATIONS:

1.Fire Notice for Fire Fighting and evacuation from the buildings shall be prepared and be displayed at all vulnerable places of the buildings.
2.Disposable type B. A. Musk to be kept always for emergency fire situation.

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.Floor numbers and directional sign of escape route shall be displayed prominently.

5.The occupancy and security staff shall be conversant with installed Fire Fighting equipments of the buildings 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 equipments installed in the buildings to keep them in perfectly good working conditions at all times.

7.A crew of trained Fireman experienced officer shall be maintained round the clock for safety of the buildings.

8.Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of buildings.

9. The certificate has 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 buildings.

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 safety aspects of installation of the buildings.

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

Signature Not Verified
Digitally signed by ABHIJIT PANDEY
Date: 2023.10.06 16:31:58 IST

DIRECTOR
West Bengal Fire & Emergency Services