



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

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Date: 11-06-2022

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

To: Mr Debajyoti Nandi
Bengal NRI Complex Limited, 783, Anandapur, Kolkata - 700107

Sub: Revised Fire Safety Recommendation for proposed construction of 3 Nos. Residential Tower of G+XXXXII storied shown as Block- 8, 9 & 10, 1No. of IV storied M.L.C.P Tower under group Storage Building and 1No. II storied Commercial Tower under group Mercantile Building in the name of Bengal NRI Complex Ltd. at premises no. 783, Anandapur, Ward no. 108, Borough- XII, P.S. Anandapur, Kolkata – 700 107.

This is in reference to your application no. 0125188228700091 dated 03-05-2022 regarding the Revised Fire Safety Recommendation for proposed construction of 3 Nos. Residential Tower of G+XXXXII storied shown as Block- 8, 9 & 10, 1No. of IV storied M.L.C.P Tower under group Storage Building and 1No. II storied Commercial Tower under group Mercantile Building in the name of Bengal NRI Complex Ltd. at premises no. 783, Anandapur, Ward no. 108, Borough- XII, P.S. Anandapur, Kolkata – 700 107.

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 PART:

- i) The whole construction of all the proposed buildings shall be carried out as per approved plan drawing and conforming by the relevant building Rules of Kolkata Municipal Corporation.
- ii) The interior finish decoration of the building shall be made low flame spread materials conforming I.S. specification.
- v) Provision of ventilation at the crown of the central core-duct of the all building shall be provided.
- v) Arrangements shall have to be made for sealing all the vertical & horizontal ducts by the materials of adequate Fire resisting capacity.
- vi) Electrical Service ducts and shafts should be enclosed by a walls of 2 hours fire rating at all floor levels in each blocks.

B) OPEN SPACE & APPROACH:-

- i) The open space surrounding the whole buildings shall be kept clear open to sky and shall conform the relevant building

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rules as well as permit the accessibility and maneuverability of Fire Service Hydraulic ladder jacking with turning facility.

ii) The approach roads shall be sufficient strong to withstand the load of fire engine weighting up to 45 metric ton.

ii) The width and height of the access gates into the premises shall not be less than 5.00X5.00 Mt. respectively abutting the roads.

C) STAIRCASE:

i) All staircase of the buildings shall be enclosed type. Entire construction shall be made of bricks having Fire Resisting Capacity not less than four hours.

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

iii) 1 No. staircase including lift enclosed by F.C.D as shown/marked in the plan shall be treated as Fire Tower.

iv) All the internal staircase shall be pressurized from ground to top floor as marked in the plan. A positive pressure of 25-30 pa. shall be maintained inside the staircase and shall be maintained round the clock where natural ventilation not possible.

v) The width of the all staircases, corridors and exit doors shall be made as marked in the plan shall conform the relevant buildings rules with up to date amendments.

vi) The entire staircase shall be extended up to terrace of the building and shall be negotiable to each floor.

vii) Fire and smoke doors at the entrances of all the staircase in each tower 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.

viii) Glazing and glass bricks shall not be used surrounding the staircases.

ix) No entrance for AHU/Electrical unit will be allowed from staircases landing as also no A.H.U. or Electrical room will be allowed adjacent to the staircase or Fire escape corridor/lift.

x) Considering the all staircases are only means of evacuation, so emergency lighting arrangement, directional sign of EXIT etc. shall be made conforming the relevant I.S. code in the regards.

D) LIFT:

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

ii) One of the lift car in each block shall be designed at high speed FIRE LIFT and conspicuously indicated. In case normal power failure, it shall automatically trip over to alternate supply trough and those lift shall be so wired that it comes down at eh ground level land comes to stand still with door open. The speed of the FIRE LIFT's in the all towers 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.

iii) Lifts & lobbies from ground to top floor shall be pressurized as marked in the plan, a positive pressure of 25-30 pa. shall be maintained inside the lift wall and lobby. Pressurization shall be maintained round the clock.

iv) Exit from the lift lobby if located in the core of the buildings, shall be through a self-closing smoke stop door of 1 hour Fire resisting.

v) P.A. system shall be incorporated inside the all lift cars in each tower.

E) REFUGE AREA:

i) Refuge area is not less than 15 Sq/m. shall be provided on the external wall with cantilever projection or other suitable means at +23.10 Mt., +35.90 Mt., +48.70 Mt., +61.50 Mt., +74.30 Mt., +87.10 Mt., +99.90 Mt., +112.70 Mt., +125.50 Mt. level of the Tower - 8, 9, & 10 as shown/marked in the plan.

ii) The Refuge areas shall be of Fire resisting construction and protected with self-closing F.C.D at the entrance from the half landings at staircase lobbies.

iii) The position of Refuge areas shall be such so that they are negotiable by the Fire Service Arlal hydraulic ladder from the

ground and P.A. System also shall be established inside the all refuge platform.

F) FIRE FIGHTING WATER :

Underground Water Reservoir for Fire having water capacity of 2,00,000 Lt. capacity exclusively for Tower- 8, 9, 10 and 1,00,000 Lt. capacity exclusively for M.L.C.P & Mercantile Block for Fire Fighting purpose. Overhead Water Reservoir for Fire of 20,000 Lt. capacity in each residential towers as shown/marked in the plan exclusively for Fire fighting purpose with replenishing arrangements @ 2000 Lt./min. preferably from two different sources of water supply shall be provided. The water reservoir shall have overflow arrangement with the domestic water reservoir as well as to avoid stagnancy of water. The water reservoir shall be kept full at all time. Provision of necessary manhole shall be made on the top of both reservoir as per specification. The deep tube wells for the replenishment of the reservoir shall be incorporated with the auto starting facility with the actuation of auto detection system of the whole premises and shall also connected with dual power supply units.

G) HYDRANT SYSTEM:

i) The building shall be provided with Wet Riser of 150 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 2850 Lt./min. at the ground floor level outlet and minimum 900 Lt./min. at the top most outlet. In both cases the running pressure shall not be less than 3.5kgs/sq.cm. All other requirements shall conforming I.S. 3844 – 1989.

ii) Provision for Hose Reel in conjunction with Wet Riser shall be made at each floor level in all towers. Conforming the relevant I.S. specification.

iii) 150 mm. dia. Ring Main Hydrant arrangement covering the entire premises of the project with provision of pillar type yard hydrants with hose boxes, containing 2 lengths of 63 mm. delivery hose and short branch pipe shall be provided at all the strategic location and surrounding the all towers/buildings conforming I.S. 3844-1989 (upto date amendment).

H) FIRE PUMP :

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 all Tower area. One such pump shall always be kept on stand-by of diesel driven type. Provision of Jockey Pump shall also have to be made to keep the Water based system under pressurized condition at all the time.

A separate Fire Pump shall be made for the total sprinkler installation along with a jockey pump for exclusively sprinkler system.

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 or as per suitability. To avoid high pressure in lower level of wet riser in the entire buildings shall have provided multi stage, multi-outlets pumps (creating pressure zones) or variable frequency drive pumps or any other suitable arrangement to be provided as per N.B.C. Part IV 2016.

I) SPRINKLER Installation :

The automatic Sprinkler Installation shall be provided in all floor in each towers of the buildings as per I.S. 9972, Alarm Gong to be incorporated along with the sprinkler system.

J) Multi Layer Automated Mechanized Car Parking :

i) Structural Design : The M.L.C.P. tower shall be constructed of structural steel construction.

ii) Vertical Deck Separation : For M.L.C.P. having 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.

iii) Fire Engine Access Way : Access way shall be provided for the Fire Engine to gain access to the car park entrance and exit.

iv) Fire Hydrant : Fire Hydrant are to be provided in accordance with the provision of N.B.C Part IV 2016 and relevant I.S. specification.

v) Natural Ventilation : Each car parking deck shall be provided with at least 50% external ventilation openings on the perimeter wall areas with uniformly distribution pattern.

vi) Sprinkler & Detection System : Open Modular type Sprinkler along with detectors shall be provided in all M.L.C.P area as per relevant I.S. Specification.

vii) Cross zone wise Sprinkler system shall have to be implemented.

viii) Operating System : Both Mechanical and Manual type operating system for M.L.C.P shall have to be provided.

K) Kitchen Protection :

1. Kitchen using open flames or fat fryers should be compartmented from rest of the floor areas with fire separation wall of minimum 60 minutes fire resistance capacity.

2. Fire Doors should be implemented with 60 minutes fire resistance capacity with automatic self closing device.

3. The kitchen should be adequately ventilated.

4. The entire kitchen areas should be protected with automatic water sprinklers extended from the existing water base system in the building. However, no sprinklers should be provided within 3 m of cooking equipment and kitchen hood. Temperature rating of sprinklers should be 30°C above the anticipated maximum temperature within the kitchen. Sprinklers installed inside exhaust ducts should be of temperature rating of 141°C.

5. Kitchen hoods and areas of cooking equipment should be protected with Ansul R-102 nozzles.

6. The entire kitchen areas should be installed with automatic thermal detectors of approved rating. The installed thermal detectors should be connected to the existing fire detection alarm panel of the building.

7. First aid fire-fighting equipment of approved class should be installed as per provisions of IS: 2190-2010.

8. Cleaning of kitchen exhaust ducts should be done periodically to ensure that carbon soot does not accumulate in the duct to avoid chances of outbreak of fire.

9. Installed detectors and sprinklers should be checked periodically to ensure that the sensors detecting equipment are not coated with grease and other suspended particular matter and thus their sensing capabilities are desensitized.

10. Grease strip should be available for efficient and regular cleaning of concrete or paved floors of kitchen and also drainage areas.

11. The hood or portion of the primary collection means designed for collection of cooking vapours and residues shall be constructed and supported by steel of not less than 18 SWG thickness.

12. The exhaust should terminate outside the building with a fan or duct with a minimum horizontal clearance of 3 m from the outlet.

13. Haphazard storage of items should be strictly prohibited. Storage should be made in non combustible metal racks with proper aisle width, without encroachment of egress routes of the kitchen.

14. All other safety measures should be in compliance to the existing provisions of Clause 6 Annex G of National Building Code of India, 2016, Part 4.

L) ELECTRICAL INSTALLATION & DISTRIBUTION :

i) The electrical installation including Transformers, Switch Gears, L.T./H.T. rooms, Substations etc. and the distribution system of the entire premises shall be protected with both auto detection and suppression systems.

ii) Electrical distribution system of all the towers shall be made in the form of concealed wiring or in heavy gauge M.S. conducted continuously bonded to earth cables shall be I.S. marked and preferable be of F.R.L.S. categories.

iii) The vertical & horizontal electrical ducts shall be sealed at each floor level by fire resisting material.

iv) The electrical main & meters shall be adequately protected with CO2/DCP Fire extinguishers.

M) AUTO DETECTION AND ALARM SYSTEM :

- i) Manually Operated Electrical Fire Alarm system incorporating with hooter shall be installed in all the tower in all floor area of the buildings in such a manner that maximum travel distance shall not be more than 30 Mt. in order to reach any of the call points.
- ii) Auto Fire Alarm System which analogue addressable smoke/heat detectors as per suitability shall be installed in all floor in all towers except car parking area.
- iii) Hooter will be sounded in such a manner so that an operation of a Manual Call Point Hooters will sounded on the same floor and immediate alternate floor.
- iv) Both way Public Address System linked between all floors in all towers and connected to control room shall have to be established.
- v) All the installation shall also satisfy the I.S. specification 2189 as amended and the code of practice as laid down in N.B.C Part IV 2016.

N) Alternative Power Supply :

Arrangement shall have to be made to supply with the help of suitable generator's of adequate capacity to operate at least the Fire Pumps, Pump for deep Tube-well, Fire Detection & Alarm System, pressurization system, Fire Control room, Fire Lift and also for illuminating the staircase of all towers, corridors, fire refuge areas etc. as well as other place of assembly of the all buildings in case of normal power failure, other requirements of the system shall be made conforming relevant I.S. Specification.

O) AIR CONDITIONING SYSTEM (If any) :

- i) The A.H.U. shall be separate for each floor with the system Air Ducts for individual floors.
- ii) Arrangement shall be made for isolation at the strategic locations by incorporating auto dampers in the Air Conditioning system.
- iii) The system of auto shut down of A.H.U. shall be incorporated with the auto detection and alarm system.
- iv) The air handling units room shall not be used for storage of any combustible materials.
- v) Escape route like staircase, common corridors, lift lobby etc. shall not be used as return air passage.
- vi) When the automatic Fire Alarm operates the respective air handling units of the air conditioning system shall automatically switched off.

P) FIRST AID FIRE FIGHTING SYSTEM :

- i) 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 (including electrical rooms, Fire Pump room, DG set room etc.) of the whole premises shall be made in accordance with I.S. 2190 – 1992.

Q) Fire Control Room :

There shall be a centralised Fire Control room shall be established in the entrance at ground floor of the building, fitted with audio visual fire alarm control panel linked with all fire detection and alarm system, public address communication system etc. to all the floors of all the towers in the complex. This room shall always be manned round the clock with trained staff in this regard.

R) GENERAL RECOMMENDATIONS :

- i) Fire License shall have to be obtained for proposed storing and processing with L.P.G and other highly combustible articles.
- ii) Lightning arrestor and air craft warning lighting signal shall have to be installed as per existing norms and relevant I.S. specification. Lighting protection for buildings shall be provided as per Part 8 'Building Services', Section 2 Electrical

Installation.

- iii) Fire Notice for Fire Fighting and evacuation from the building shall be prepared and be displayed at all vulnerable places of all buildings.
- iv) Floor numbers and directional sign of escape route shall be displayed prominently in all towers at each floor area.
- v) The employees and security staff shall be conversant with installed Fire Fighting equipments of the buildings and to operate in the event of Fire and Testing.
- vi) 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 time.
- vii) A crew of trained Fireman under the experienced Officer shall be maintained round the clock for safety of the all blocks.
- viii) If diesel oil is stored beyond the specified quantity, the license shall be accorded from the appropriate authority.
- ix) Disposal type B.A. mask to be kept at Fire Control room always for emergency Fire situation.
- x) Fire safety Certificate is to be obtained from 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 Revised 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 all buildings.

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

Signature valid
Digitally signed by ABHIJIT
PANDEY
Date: 2022.06.11 10:48:49 IST

Director
West Bengal Fire & Emergency Services