

**GOVERNMENT OF WEST BENGAL
OFFICE OF THE DIRECTOR GENERAL
WEST BENGAL FIRE & EMERGENCY SERVICES
13-D Mirza Ghalib Street, Kolkata- 700 016**

Memo No : IND/WB/FES/20182019/27403

DATE: 27/12/2018

From :

The Director

Fire Prevention Wing,

West Bengal Fire & Emergency Services.

To :

BALASUBRAMANIAN S

**JL NO. 6, KHATIAN NO. 1808 LR DAG NOS. 1887, 1888,1889, 1894, 1895 UNDER
MOUZA KHORDA BAHERA & JL NO. 7, KHATIAN NO. 11976 LR DAG NOS. 4473, 4474
UNDER MOUZA KONNAGAR**

Uttarpara F.S., Uttarpara,

Hooghly - 712246 .

Sub :Fire Safety Recommendation for a proposed project consisting of 19 nos. G+14 storied Residential Tower along with LG+UG+3 storied Car Parking Block, 1 no. G+2 storied Club Block, 8 nos. Electrical Service Room, etc. in the name & style of Bengal Shriram Grand City- Phase II at Hindmotors, falling under Uttarpara Kotrang Municipality and Kanaipur Panchayat, Mouza- Kotrang, Konnagar, Bhadrakali, Barabahara, Khordabahera, Makhla, Dist- Hooghly.

This is in reference to your Application No. IND/WB/FES/20182019/27403,dated 27/12/2018, regarding the Fire Safety Measure for a proposed project consisting of 19 nos. G+14 storied Residential Tower along with LG+UG+3 storied Car Parking Block, 1 no. G+2 storied Club Block, 8 nos. Electrical Service Room, etc. in the name & style of Bengal Shriram Grand City- Phase II at Hindmotors, falling under Uttarpara Kotrang Municipality and Kanaipur Panchayat, Mouza- Kotrang, Konnagar, Bhadrakali, Barabahara, Khordabahera, Makhla, Dist- Hooghly..

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 favour of the aforesaid building subject to the compliance of the following fire safety measure.

Recommendation:

1. CONSTRUCTION:

- 1.The whole construction of the proposed project shall be carried out as per approved plan drawings conforming the relevant building rules with upto date amendment of Local Municipal Rules 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.Applicant will have to complete all connecting roads before applying for “Fire Safety Certificate”.
- 4.Materials for rapid flame spread categories including untreated wood fiber board etc. shall be not use. The doors and windows preferably shall be made of metal.
- 5.The interior finish decoration of the building shall be made with the materials with low flame spread and low smoke/non-toxic gas generating categories conforming I.S. Specification.
- 6.Arrangement shall have to be made for sealing all the vertical ducts by the materials of adequate Fire resisting capacity.
- 7.Service ducts and shafts should be enclosed by a wall of 2 hours and doors of one hour fire rating. All such ducts shall be properly sealed at all floor levels.

2. OPEN SPACE AND APPROACH:

- 1.The abutting road shall permit the accessibility and maneuverability of fire appliances and shall be constructed according to submitted plan drawing.
- 2.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 the Fire Appliances with turning facility.
- 3.The approach road surrounding the building (drive way) and open car parking area shall be sufficiently strong to withstand the load of Fire Engine weighting up to 45 M.T.
- 4.The width and height of the entry gates to the premises shall be 5.0m wide and 5.0m high (as shown/marked in the plan drawing) respecting the abutting road.
- 5.Driveways to have a clear width of 7.0m & 6.0m which are accessing towards ground level below each fire refuge area and a space of 9.0m X 15.0m below each fire refuge area shall have to be provided as shown/marked.
- 6.Drive ways should be free of any type of obstruction. No parking will be allowed on the Drive-Way.
- 7.Turning radius minimum 7.5m shall be provided for approaching towards the ground level near each Fire Refuge Platform.

3. STAIRCASE :

- 1.The staircases of the buildings shall be enclosed type as shown in the plan drawings. Entire construction shall be made of bricks / R.C.C. type having Fire resisting capacity not less than 2 hours.
- 2.The staircase shall have permanent vents at the top equal to 5% of the cross sectional area of the staircases enclosures and open able sashes at each floor level equal to 15% of the said cross section are shall have to be provided in the external wall of the building.
- 3.Fire Check Doors at the entrances of all the Staircase enclosures as shown/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 window fitted with self closing type openable in the direction of escape.
- 4.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 this regards.
- 5.Both staircases of each block shall be negotiable to each other in each floor without entering into any room and shall be extended up to respective terrace. The roof of the stair wall shall be 1m. above the surrounding roof area.
- 6.The position of the staircases shall be made as shown in the plan. Width of the staircases, corridors and the exit doors shall conform the relevant building rules with up-to-date amendments.
- 7.Corridors of all buildings shall be kept un-obstructed all the time.

4. LIFT :

- 1.The walls of the lift enclosure of all buildings 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 in all the lift shaft by incorporation smoke venting system designed to permit 30 Air changes per hour in case of Fire and shall be such design as to operate on actuation of sprinkler or Fire Alarm. In case of failure of normal power supply it shall automatically trip to alternate supply.
- 4.All other requirements shall conform the I.S. specification including the communication facility in the lift cars connecting to the Fire Control Room of the building.
- 5.At least one no. lift of each building shall be designed as high speed "Fire Lift" (shown in the plan drawing) and conspicuously indicated. The speed of the fire lift in the buildings 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. REFUGE AREA:

- 1.The measurement of all Refuge Areas/Fire Refuge Landings shall be as per requirement of occupancy load/floor areas (at the rate 0.3sq.m./person) or 15.0Sq.m. whichever is higher.
- 2.Refuge areas are to be provided as shown in the plan drawing on the 24.30m & 39.05m height of each block and shall be provided on the external wall with cantilever projection or other suitable means as shown in the drawings.
- 3.The refuge areas shall be of Fire resisting construction and protected with self closing F.C.D. at the entrance from the staircase landing.
- 4.The position of refuge area shall be in such manner so that it shall be negotiable by the Fire Service High Rise Ladder from the ground of each block.

6. ELECTRICAL INSTALLATION & DISTRIBUTION:

- 1.The electrical installation including transformers (if any, shall be of dry and explosion proof), 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 I.S. specification 1946-1982.
- 2.The vertical supply ducts shall be sealed at each floor level.
- 3.The electrical installation shall be adequately protected with CO₂ / D.C.P.
- 4.Electrical distribution system of the all buildings 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 preferably be of F.R.L.S. categories. M.C.B. shall be installed in electrical circuit to avoid electrical fire hazards.
- 5.All electrical installation viz. transformer, Switch Gear L.T, H.T rooms shall be protected with both auto detection and suppression system as per suitability.
- 6.Adequate ventilation of Electrical Room of all buildings shall be made.
- 7.Alternative Power Supply : Arrangement shall have to be made to supply power with the help of generator to operate at least Fire Pumps, Pump for deep Tube well, Fire Detection & Fire alarm Systems, Lifts, Mechanical smoke venting systems and also illuminating the staircase, corridors, etc. and other assembly places of the building incase of normal power failure.
- 8.Lightening Arrestor arrangement to be provided at highest altitude of all buildings.

7. FIRE FIGHTING WATER:

- 1.One Underground Water Reservoir having water capacity of 200000Lts. (100000X2) shown/marked in the plan exclusively for fire fighting purpose. The replenishment arrangements @ 2000 Lts./min. preferably from two different sources of water supply shall be provided for Fire Water Reservoir.
- 2.One Over Head Water Reservoir (exclusively for Fire Fighting purpose) having capacity 5000Lts. shown on the roof top of each block shall be provided with suitable replenishment arrangement.
- 3.The Fire Water Reservoirs shall have overflow arrangement with the domestic Water

Reservoir as well as to avoid stagnancy of water. The fire fighting water reservoir shall be kept full at all time.

4.Provision of placing Fire Appliances on the underground water reservoir to be made to draw water in case of emergency. Provision of necessary manhole shall be made on the top of the reservoir as per specification.

5.Provision of Fire Service inlet (by installing four way collecting head conjunction with water based system) shall be installed at suitable places.

8. FIRE PUMP :

1.Discharge should not be less than 2850Lts/min and pressure at the top and furthest most hydrant shall not less than 3.5Kgs/Sq.cm.

2.A Sprinkler Pump of equal capacity shall be provided.

3.A standby Pump of equal capacity shall be provided on alternative source of supply preferably be of diesel driven type.

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

5. All the pumps shall be incorporated with both manual and auto starting facility and with alternate power supply. The suction of Fire Pumps shall preferably of positive type.

9. HYDRANT SYSTEM:

A)Ringmain Hydrant System:-

i)200 mm diameter Ring Main water layout arrangement covering the entire premises of the project 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 and surrounding the building conforming I.S. 3844-1989 (upto date amendment).

ii)The system shall be so designed that shall always be kept charged with water under pressure and capable to discharge 2850 Ltrs./min. at the pressure 3.5kg/sq.cm. at any point.

B)Wet Riser & Hose Reel System:-

i)The building shall be provided with Wet Riser of 150mm internal diameter with provision of landing valves in each floor at the staircases landings/half landings as per suitability at the rate of one such unit of Wet Riser and Hose Reel per 1000sq.m. of floor area.

ii)Hose Reel Unit:- Provision of hose reel units on swiveling drum in conjunction with wet riser near each landing valves shall be made at each floor level of the building.

iii)All other requirements of the water base Fire Protection System shall be made as per I.S.Specification 3844-1989 (with upto date amendment).

C)Automatic Sprinkler Installation:-

i)Corridors, stair & lift lobbies of all floors of all blocks, Car Parking Block and Club Block shall be suitable protected by automatic Sprinkler installation conforming the grade as per I.S. Specification 9972.

- ii) Alarm gang to be incorporated along with the sprinkler system.
- iii) Sprinkler Annotation Panel shall be installed and incorporated with the system.
- iv) Water curtain shall be provided in car parking block as per NBC Part-IV.

10. AUTO DETECTION AND ALARM SYSTEM:

1. Auto Fire Alarm System with analogue addressable smoke/heat detectors as per suitability shall be installed in the corridor, lift & stair lobby, electrical room, LT/HT room of all floors of each residential block, Club Block and Lower ground floor parking.

2. Both way Public address system linked between all floors and Control Room shall have to be incorporated.

3. Manually operated Electrical fire alarm system with at least two numbers of break glass type call boxes fitted with hooters at each floor connecting with audio-visual Panel board shall be made in Fire Control Rooms (shown in the ground floor of each block). Hooter will be sounded in such a manner so that an operation of a Detector or Manual Call Point, Hooter will be sounded on all floors. All other requirements of the system shall be made conforming I.S. 2189 as amended and the code of practice as laid down in N.B.C. Part-IV.

11. AIR CONDITIONING SYSTEM:- (if there any centralized air condition system)

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 the auto detection and alarm 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. Wherever the ducts pass through Fire wall of floors, the opening surrounding the ducts shall be sealed with Fire resisting materials such as asbestos 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 separated 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 fusible link for isolating all ducting at every floor from the main riser shall be made.

b. When the automatic Fire alarm operates the respective air handling units of the air conditioning system shall automatically be switched off.

c. The dampers shall operate automatically and shall simultaneously switch off the air handling fans. Manual operation facilities shall also be provided.

d. Automatic Fire Dampers shall be so arranged so as to close by gravity in the direction of Air movement and to remain tightly closed on operation of a fusible link.

15. The vertical shaft for treated fresh air shall be of masonry construction.

16. The air filters for air handling units shall be of non combustible materials. The air handling units room shall not be used for storage of any combustible materials.

17. 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.

18. No combustible materials shall be fixed nearer than 15cm to any duct unless such duct properly enclosed and protected with non combustible 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.

12. KITCHEN PROTECTION (Club Block):

The Kitchen should have at least 2 (two) doors for safety point of view as remote as possible from one to another. The food process zone (kitchen) shall never be allowed at other occupied area or never near the exits. No other L.P.G. oven with separately loose L.P.G. cylinder will be used inside the kitchen where L.P.G. supply is being maintained from L.P.G. Bank through L.P.G. manifold.

13. L.P.G. BANK (for Club Block Kitchen):

a) L.P.G. (Liquefied Petroleum Gas) Bank shall be constructed as per Gas Cylinder Rules-2004 and I.S. 6044 maintaining adequate safety distance between an installation of same and any building, public place, roadways and other surroundings. Anti static mastic bituminized flooring shall be made inside the L.P.G. bank.

b) Cross ventilation shall be provided at ground level and at the top and the ventilators shall be covered by two layers of non-corrigible metal wire mesh.

c) L.P.G. Bank shall never be used as store room of other articles.

d) Gas Sensor shall be installed inside the L.P.G. Bank while the isolation valve or regulating

devices shall be retained outside the Bank for easy operation on any operation.

e)No electrical connection, wirings, fittings shall be installed inside the Gas Bank.

f)The L.P.G. Bank shall be protected either by Auto Modular (D.C.P. type) or by portable D.C.P.

fire extinguisher of adequate capacity and sand buckets with dry sand.

g)L.P.G. Bank shall be constructed of brick wall and R.C.C/Asbestos roofing having three sides closed and one side provided with open able C.I/Steel double leaf door which will open outwardly.

h)Checking, testing and proper maintenance of L.P.G. installation, L.P.G. manifold. Pipe lines shall be checked by expert (authorized) agency and a certificate of safety to that effect to be endorsed to this department in due course.

14. FIRST AID FIRE FIGHTING SYSTEM:

First Aid Fire fighting arrangement in the style of placing suitable type of portable Fire Extinguishers (I.S.I. marked), Fire Buckets etc. in all floors and vulnerable locations of the premises shall be made in accordance with I.S. 2190-1992.

15. SPECIAL RECOMMENDATION:

1.Regarding the existing canal, if it is to be covered etc., applicant will first take approval from concern authority and will also ensure that any driveway on the top of the canal will bear a load of 45M.T.

2.Mechanical ventilation at Lower ground floor parking shall be provided.

16. GENERAL RECOMMENDATION:

1.Fire License shall have to be obtained for proposed storing and processing with L.P.G. and other highly combustible articles.

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

3.Provision of illuminating exit shall be made at all floor levels of building conforming the I.S. Specification.

4.The employees and security staff shall be conversant with installed First aid 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.Special rescue equipment like Smoke Hood, self contained B.A. set, portable lights shall be made available in the main fire Control Room of the premises.

7.A crew of trained Fireman shall be maintained round the clock for safety of the housing complex.

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

all occupants of building.

9.Haphazard indoor or outdoor storage shall be avoided. All staircases and corridors shall be kept free

from any type of obstructions.

10.Telephone numbers of all Emergency Services and Departments shall be hanged at conspicuous places of all floors and inside Office/Reception Counter.

11.Drill: Must be acquainted with evacuation passage of escape route by practicing as a drill with all occupants as a drill every month as a special duty and records of which must be kept in their custody.

12.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.

13.This Fire Safety Recommendation cannot be treated in any case for regularizations of any unauthorized construction.

On compliance of all the above Fire & Life Safety Recommendations, the Director General, West Bengal Fire & Emergency Services shall be approached for necessary inspection and testing of the installations, 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 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.

Director
West Bengal Fire & Emergency Services