

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

Memo No. : WBFES/ 2179 / 17 / 24Pgs(S)-RB/529/16 (529/16)

Date: 11.09.17

From : Divisional Fire Officer,
Fire Prevention Wing
West Bengal Fire & Emergency Services

To : Mr. Rahul Kyal, Partner
PS Vinyak Complex LLP,
122/1R, Satyendranath Majumder Sarani
Kolkata - 700 026



Sub : Fire Safety Recommendation for Proposed construction of Residential Complex at Diamond Harbour Road comprising of 1 (One) no. G+XV storied (Tower -1), 1 (One) no. B+G+XII storied (Tower - 2) and 9 (Nine) nos. (Tower 3 to Tower - 11) G+XV storied under group Residential Building with 5 (Five) Layered Podium Parking over Common Basement, at the premises no. - Mouza - Sarmestarchak, JL No. - 17, Touzi No. - 351 BI, RS Dag No. - 113, 114, 115, 116 & 117 corresponding to LR Dag Nos. - 112, 113, 114, 115 & 116, Mouza- Daulatpur, JL No. - 79, Touzi No. - 1776, RS / LR Dag Nos. - 23, 27, 28, 29, 30, 31, 32, 33, 34, 48 & 49, P. O. - Pailan Hat, P. S. - Bishnupur & Mouza - Hanspukuria, JL No. - 20, Touzi No. - 3, P. S. - Thakurpukur, RS Dag Nos. - 501, 501/773, 501/774 & 502 corresponding to LR Dag Nos. - 701, 702, 703 & 700 within Kulerdari Gram Panchayet, District - 24 Pgs. (S).

This is in reference to your letter No. - Nil dated 03/08/2017 regarding Fire Safety measures for Proposed construction of Residential Complex at Diamond Harbour Road comprising of 1 (One) no. G+XV storied (Tower -1), 1 (One) no. B+G+XII storied (Tower - 2) and 9 (Nine) nos. (Tower -3 to Tower - 11) G+XV storied under group Residential Building with 5 (Five) Layered Podium Parking over Common Basement, at the premises no. - Mouza - Sarmestarchak, JL No. - 17, Touzi No. - 351 BI, RS Dag No. - 113, 114, 115, 116 & 117 corresponding to LR Dag Nos. - 112, 113, 114, 115 & 116, Mouza- Daulatpur, JL No. - 79, Touzi No. - 1776, RS / LR Dag Nos. - 23, 27, 28, 29, 30, 31, 32, 33, 34, 48 & 49, P. O. - Pailan Hat, P. S. - Bishnupur & Mouza - Hanspukuria, JL No. - 20, Touzi No. - 3, P. S. - Thakurpukur, RS Dag Nos. - 501, 501/773, 501/774 & 502 corresponding to LR Dag Nos. - 701, 702, 703 & 700 within Kulerdari Gram Panchayet, District - 24 Pgs. (S).

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 favour of the aforesaid building subject to the compliance of the following fire safety measures. However, necessary sanction & approval for such occupancy must be obtained from competent authorities.

Encl. :

1. One set of plan.
2. Recommendation


DIVISIONAL FIRE OFFICER
FIRE PREVENTION WING
WEST BENGAL FIRE & EMERGENCY SERVICES

RECOMMENDATION

A. CONSTRUCTION:

1. The whole construction of the proposed buildings shall be carried out as per approved plan drawings conforming the relevant building rules of local Municipal Body / Competent Authorities.
2. The interior finish decoration of the building shall be made low flame spread materials conforming I.S. specifications.
3. Arrangements shall have to be made for sealing all the vertical ducts by the materials of adequate Fire resisting capacity.
4. The floor area exceeds 750m² shall be suitably compartmented by separation walls up to ceiling level having at least two hours Fire resisting capacity.
5. Pressurization of stair cases & Lift lobbies shall be done as per provision of Table - 6, N.B.C. - Part - IV, 2016
6. Roof shall be used as a refuge area in case of an emergency and it should be clear open for all the time. No permanent or temporary structure will be allowed on the roof.

B. OPEN SPACE & APPROACH:

1. The open space surrounding the buildings shall conform the relevant building rules as well as permit the accessibility and maneuverability of Fire appliance including Aerial Ladder with turning facility.
2. The approach road shall be sufficiently strong to withstand the load of Fire Engine weight up to 45 M.T.
3. The width and height of the access gates into the premises shall not be less than 5M - 5.5 M respecting the abutting road.
4. Internal driveway & a clear open space of 6 mtr. wide & 15 mtr. long of load bearing capacity not less than 45 M.T. shall be maintained below each Refuge Area.

C. STAIRCASE:

1. The staircases of the 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 staircases of the buildings 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 amendments.
4. All the staircases shall be extended up to terrace of the building and shall be negotiable to each other without entering into any room.
5. The Staircases and Corridor lightning shall have alternative source of supply in case of emergency and also on separate circuit.
6. Fire and smoke 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 glass window fitted with self-closing type, openable in the direction of escape.

D. LIFT:

1. The walls of the lift enclosure of the building shall be at least two hours FIRE resisting type.
2. The lift of the building shall be designed at high speed "Fire Lift" and conspicuously indicated marked in the plan.
3. One of the lift cars of each building shall be large enough to accommodate standard Ambulance Stretcher and Medical Attendants.
4. The Electric power shall be from separate supply mains in the building and cables run with in the lift shafts, light and fans in the lift cars shall be operated from 24 volts supply on emergency. In case of failure of normal power supply, lift shall automatically trip over alternate power supply.
5. 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 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.
6. Exit doors of the lift lobby shall be through a self- closing smoke stop door of 1hour fire resistance.
7. The speed of the fire lifts 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.
8. 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.
9. The Lift Lobbies at the basement shall be enclosed type and pressurized as per existing norms and relevant I.S. specification.
10. The Lifts runs towards basement shall be pressurized. A positive pressure of 25 to 30 Pa. shall be maintained inside the lift well and lobby. The pressurization shall be maintained round the clock.

E. REFUGE AREA:

1. The Refuge areas on calculating the area at the rate of 0.3 m^2 / person on the basis of floors area but not less than 15 Sq. mtr. each shall be provided on the external wall as cantilever projection or any other suitable means at 8th floor & 12th floor levels of each building as shown shall be constructed.
2. The refuge areas 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 from the ground floor.

F. 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. Mechanical smoke venting arrangements shall be provided to all the basements conforming the relevant I.S. Specification & provision of N.B.C. - Part IV, 2016.

3. The exit from the basement shall be form open Air and form any points the travel distance shall not exceed 15 mtr. to reach any exit.
4. All the basements shall be protected with Automatic Sprinkler System conforming to I.S. 3844-1989.
5. The staircases of basements shall be of enclosed type and pressurized having Fire resistance of not less than 4 hrs., 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 of upper floor of the building.
6. Mechanical extractors shall have an alternative source of supply.
7. Mechanical extractor shall have an internal locking arrangement so that extracting shall continue to operate and supply fans shall stop automatically with the actuation of Fire Detectors / Sprinklers.
8. Mechanical extractors shall be designed to permit 12 Air Changes per Hour in case of Fire or Distress Call.
9. Basement compartmentation shall be achieved as shown / marked in plan & protection shall be made as per provision of N. B. C – Part – IV, 2016.

G. Car Parking Facilities:

Car parking facility shall be made as per provision of Annex – H of N. B. C. – Part IV, 2016.

H. FIRE FIGHTING WATER:

Underground water reservoir having water capacity at 3, 25, 000ltrs. for firefighting purpose and overhead reservoir capacities 12, 000 ltrs. above each tower as shown, with replenishing arrangements @ 2000 lts./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.

I. HYDRANT SYSTEM:

- 1 Each building shall be provided with Wet Riser of 150mm. 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 lts/min. at the ground floor level outlet and minimum 900 lts/min. at the top most and farthest 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.
- 2 Provision for Hose Reel units on swiveling drum in conjunction with Wet Riser shall be made near each lading valves.
- 3 Yard Hydrant / Ring Main Hydrant with provision of adequate numbers Hydrant shall be installed surrounding the building in accordance with relevant I.S. specifications.

J. Automatic Sprinkler Installation:

The automatic sprinkler installation shall be provided in entire basement, Podium parking and all floor areas of all the residential building having height more than 45 mtr. as per I.S. 9972 & provision of N. B. C. – Part IV. Alarm Gong to be incorporated along with the sprinkler system.

K. FIRE PUMP:

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 building. One such pump shall always be kept on stand-by of diesel driven type.

Provision of separate pump as above for sprinkler system shall have to be made to keep the system under pressurized condition at all the time. One such pump shall always be kept on stand-by of diesel driven type.

Provision of separate Jockey Pump shall also have to be made to keep the Water based system i.e. hydrant & sprinkler system 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.

Arrangements of pumps shall be made as per provision of N. B. C. Part –IV, 2016

L. 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 I.S. specification 1946 – 1982.
- 2 The vertical ducts shall be sealed at each floor level by approved fire resisting materials.
- 3 The electrical installation shall be adequately protected with automatic fire detection & suppression system.
- 4 **Alternative Power Supply :**

Arrangements shall have to be made to supply power with the help of Diesel generator of adequate capacity to operate at least the Fire Pump, Pump for deep Tube-well, Fire Alarm, PA System etc. and also for illuminating the Staircase, corridors etc. and other places of assembly of the building incase of normal power failure.

M. DETECTION, ALARM AND SUPPRESSION SYSTEM :

1. Addressable analogue manually operated Electrical Fire Alarm system with at least three numbers of break glass typecall boxes fitted with Hooters along with public address system, at each floor connecting with visual panel board shall be made in Control Room. The Control Room shall be located at the entrance of Ground Floor of the building, 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 places of below and preferably above false 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. The suppression system shall be made with Fire Extinguishers particularly in computer and electric 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.

N. AIR CONDITIONING SYSTEM (IF ANY) (CENTRAL AIR CONDITIONING):

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. Escape route like staircase, common corridors, lift lobby etc. shall not be used as return air passage.
6. Wherever the ducts pass through Fire wall of floors, the opening around the ducts shall be sealed with Fire resisting materials such as asbestos rope vermiculite concrete etc.
7. The metallic ducts shall be used even for the return air instead of space above the false ceiling.
8. 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.
9. 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.
10. Air duct services main floor area, corridors etc. shall not pass through the staircase enclosures.
11. 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.
12. 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 fuse able 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.
13. The vertical shaft for treated fresh air shall be of masonry construction.
14. The air filters for air handling units shall be of non-combustible materials.
15. 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.

16. 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.

OR

O. Air Conditioning System (If Any) (Split or Window Conditioning System):

1. Joints must be avoided in AC wires. It must be ensured that all AC units are comprehensively serviced before operation and filter is cleaned regularly through authorized service agency which increases cooling as well as results in less electric consumption.
2. Never use AC units on normal plug points or temporary extension boards except on covered MCB's.
3. Switch off air-conditioners, lights, fans, exhaust fans, heat convectors, fax machines, computer monitors, printers /scanners/UPS, inverters, photocopiers, TVs and other office equipment's when they are not in use. Switch on only those lights fans, air-conditioners or other equipment's which are required for functioning office. Do not leave air-conditioners, heat convectors, lights, fans and other electrical equipment's and gadgets in 'ON' position when not required.
4. Keep the doors / Windows of air-conditioned rooms close to avoid loss of conditioned air. Provide automatic door closers. Use air-conditioner fan/blowers and fans at low speed.
5. In summer reduce load on air-conditioners by putting curtains/blinds/shades on windows.
6. Window type air-conditioners/split type AC's being highly energy intensive equipment's; they should be serviced at least thrice in a year as per the recommendations of manufacturers, The servicing included cleaning of air filters, cleaning of condensers/cooling coil, service and oiling of fan motors, checking of fasteners, checking of electrical spares, checking of current/voltage and checking of room temperature and grill temperature.
7. Replace old air-conditioners which have out-lived their useful life i.e. 7 years as per Competent authorized agency maintenance manual 2012 and have become unserviceable with star rated Energy Efficient air conditioners.

P. FIRST AID FIRE FIGHTING SYSTEM:

First Aid firefighting 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.

Q. 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 Disposable type B. A. Musk in adequate number to be kept always ready 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 occupants and security staff shall be conversant with installed Fire Fighting equipments of the building 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 building to keep them in perfectly good working conditions at all times.
- 7 A crew of trained Fireman under an experienced officer shall be maintained round the clock for safety of the building.
- 8 Mock Fire practice and evacuation drill shall be performed periodically with the participation of all occupants of the buildings.
- 9 Each year a certificate is 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 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, Fire Safety Certificate in favour of the occupancy shall be issued on being satisfied with the tests and performances of safety aspects of installations of the buildings.

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



(Handwritten signature and date)
8/9/12

DIVISIONAL FIRE OFFICER
FIRE PREVENTION WING
WEST BENGAL FIRE & EMERGENCY SERVICES