# 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/20172018/618 DATE: 04/04/2018

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

**To :**
**Mr. Piyush Kheria**
**1338 and other 31 R.S.& L.R. Dag No., Thakdari**
**Bidhan Nagar F.S., New Town,**
**North 24 Parganas - 700102 .**

**Sub :Fire Safety Recommendation for Proposed construction of a Residential complex comprising of 10 numbers of G+XX storied Residential towers ,namely tower 1 to 10 and Podium block(G+6 Floors) integrated with Towers 3,4,5,7&9 under group Residential Building at R.S. & L.R. Dag Nos. 444, 446, 447, 1317, 1319, 1320, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359 & L.R. Khatian Nos. 1665, 1686, 1709, 1710, 1711, 1713, 1759, 1760, 1761, 1775, 1856, 1857, 1858, 1866, 1897, 1898, 1899, 1900, 1908, 1909, 1939, 1956, 1957, 1960, 1961, 1985, 2002, 2017, 2108, 2109, 2131, 2132, 2133, 2134, 2135, 2136, 2138, 2139, 2142, 2143, 2144, 2171, 2174, 2199, 2200, 2201, 2202, 2229, 2230, 2232, 2233, 2245, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2279, 2301, 2303, 2305, 2306, 2307, 2326, 2340, 2341, 2342, 2344, 2345, 2361, 2369, 2378, Mouza - Thakdari, J. L. No. 19, P.S. - New Town, Ward No. 27, District - North 24 Parganas, under Bidhannagar Municipal Corporation.**

This is in reference to your Application No. IND/WB/FES/20172018/618,dated 04/04/2018, regarding the Fire Safety Measure for Proposed construction of a Residential complex comprising of 10 numbers of G+XX storied Residential towers ,namely tower 1 to 10 and Podium block(G+6 Floors) integrated with Towers 3,4,5,7&9 under group Residential Building at R.S. & L.R. Dag Nos. 444, 446, 447, 1317, 1319, 1320, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351,

1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359 & L.R. Khatian Nos. 1665, 1686, 1709, 1710, 1711, 1713, 1759, 1760, 1761, 1775, 1856, 1857, 1858, 1866, 1897, 1898, 1899, 1900, 1908, 1909, 1939, 1956, 1957, 1960, 1961, 1985, 2002, 2017, 2108, 2109, 2131, 2132, 2133, 2134, 2135, 2136, 2138, 2139, 2142, 2143, 2144, 2171, 2174, 2199, 2200, 2201, 2202, 2229, 2230, 2232, 2233, 2245, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2279, 2301, 2303, 2305, 2306, 2307, 2326, 2340, 2341, 2342, 2344, 2345, 2361, 2369, 2378, Mouza - Thakdari, J. L. No. 19, P.S. - New Town, Ward No. 27, District - North 24 Parganas, under Bidhannagar Municipal Corporation..

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. 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 building.

2.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.

3.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.

4.Both way public address& talk back systems linked between all floors and Control Room. Shall have to be established.

5.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:

A well designed Fire Control Room with C.C.T.V. and Fire Control Panel and monitoring 24X7.

Preparation of Emergency Evacuation:

There is need to have a clear policy for emergency evacuation plan.

2. 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.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 a rounding 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 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.

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 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 facility 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.

3. 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.

4. GENERAL RECOMMENDATIONS:
1Fire License shall have to be obtained for proposed storing and processing with L.P.G. and other highly combustible articles (if any).

2Necessary sanction and approval for such construction and occupancy of this project must be obtained from competent authorities.

3Disposable type B. A. Musk to be kept always for emergency fire situation.

4Fire Notice for Fire Fighting and evacuation from the building shall be prepared and be displayed at all vulnerable places of the building.

5Floor numbers and directional sign of escape route shall be displayed prominently.

6The occupancy and security staff shall be conversant with installed Fire Fighting

equipments of the building and to operate in the event of Fire and Testing.

7Arrangement 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.

8A crew of trained Fireman under an experienced officer shall be maintained round the clock for safety of the building.

9Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of building.

10Each 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 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 shall be treated as cancelled.

5. BASEMENT: 1. The Basement shall be adequately ventilated. 2. Automatic Mechanical smoke venting arrangements shall be provided to the basement
conforming the relevant I.S. Specification and provision of NBC Part IV, 2016. 3. Mechanical extractor shall have an alternate source of supply. 4.
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 / suitable detection system. 5. The exit from the basement shall be from open Air and from any points of safety, the travel
distance shall not exceed 15.5 M to reach any exit. 6. The entire basement shall be protected with Automatic Sprinkler System with Hydrants and Hose
Reel Hose conforming relevant I.S. specification. 7. The staircases of basement shall be of enclosed type 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 having the

ground upper floor of the building.
6. FIRE FIGHTING WATER: 1. Underground water reservoirs having total water capacity of not less than 500,000 (5 Lac) ltrs shall be provided, as shown in
plan drawing. 2. Overhead reservoir of not less than 10,000 ltrs. Capacity as shown / marked in the plan drawings on each Towers exclusively for
Firefighting purpose shall be kept full at all time. 3. The water reservoirs shall have overflow arrangement with the domestic water reservoirs as well as to
avoid stagnancy of water. 4. Provision of necessary manhole shall be made on the top of this reservoir as per specification. 5. Provision of replenishment
at the rate of at least 2000 lts./min. from two separate sources of water supply shall be made. 6. The deep tube wells for the replenishment of the
reservoirs shall be incorporated with auto starting facility with actuation of auto detection and suppression arrangement of the premises and shall also be
connected with duel power supply units. 7. Provision of placing Fire Appliances near the underground water reservoir to be made to draw water in case of
emergency.
7. CONSTRUCTION: 1. The whole construction of the proposed Residential Building shall be carried out as per approved plan drawings conforming the
relevant building rules of local Municipal Body / competent authority. 2. The floor area exceeds 750m2 shall be suitably compartmented by separation
walls up to ceiling level having at least two hours Fire resisting capacity. 3. The interior finish decoration of the building shall be made low flame spread
materials conforming I.S. specifications. 4. Provision of ventilation at the crown of the central core-duct of the building shall be provided. 5. Arrangements
shall have to be made for sealing of all the vertical & horizontal ducts by the materials of adequate Fire resisting capacity at each floor. 6. Connectivity of
1st Floor and 2nd Floor of Wing – 2 with Wing – 1 shall be made at respective floor levels, for safe evacuation, as shown / marked in plan drawings.
8. OPEN SPACE & APPROACH: 1. The open space surrounding the building shall conform the relevant building rules as well as permit the accessibility and
manoeuvrability of Fire appliance including Aerial Ladders with turning facility. 2. The approach roads, internal road / driveway and dedicated clear open
space for Fire Service Aerial Ladder of areas 9 M X 15 M as shown shall be sufficiently strong to withstand the load of Fire Engine weighing up to 45 M.T.
3. The width and height of the access gate into the premises shall not be less than 5M &5.5 M respecting the abutting road.
9. MULTIPURPOSE HALL, COMMUNITY HALL, GYM & ALL ASSEMBLY AREAS: The doors/aisles/seating arrangement/corridors /Screen /Signage / Fire &
Life Safety arrangements and Fire Protection measures shall be made as per provision of N. B. C. - Part-IV, 2016, relevant IS specification as well as the

Indian Cinematography Act with up to date amendment.
10. STAIRCASE:1. 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. 2. The staircase of the building shall have permanent vents at the top and open able 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 staircase 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 be 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 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 open able in the direction of escape. 7. Pressurization of staircases of each Tower shall be done as per relevant IS specification and NBC Part – IV, 2016.
11. EXIT: 1. No exit door from any occupancy of any floor in a distance is not more than the distance as specified in N. B. C. –Part – IV, 2016. The travel distance to an exit from dead end of a corridor shall not exceed 6 mtr. 2. Exits shall be so arranged that at least two separate exits are available in every floor area. Exits shall be as remote from each other as practicable and so arranged that there are no pockets or dead end occurred in which occupants may be trapped. 3. Every exit door way shall open into an enclosed stairway or a horizontal exit of a corridor. 4. Every room with a capacity of over 45 persons shall have at least two exit ways.
12. LIFT: 1. The walls of the lift enclosure of the buildings shall be at least two hours FIRE resisting type and all the lift shafts shall be pressurized as per existing norms and provision of NBC Part IV, 2016. 2. The lift of the buildings shall be designed at high speed "Fire Lift" and shall be conspicuously indicated / marked. 3. 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. 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 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. 5. Exit doors of the lift lobby shall be through a self- closing smoke stop door of 1 hour fire resistance for buildings and at least 2 hours. 6. 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. 7. 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. 8. A positive pressure of 25 to 30 Pa. shall be maintained inside the lift wall and lobby. The pressurization shall be maintained round the clock.

13. REFUGE AREA: 1. The Refuge areas shall be provided on each Residential Towers as shown in plan drawings at the level of +23.46m, +38.01m, +53.26m for towers 1 & 2 and at levels +24.675m, +39.925m, +55.175m for towers 3 to 10, of area not less than 15 Sq. M. 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 landings. 3. The position of refuge Areas shall be such that they are negotiable by the Fire service Aerial Ladder from the ground floor.

14. WATER LAYOUT SYSTEM: 1 The buildings shall be provided with separate Wet Riser for sprinkler & hydrant of 150 mm. internal diameter Pipe Line each 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 furthest outlet. In both cases the running pressure shall not be less than 3.5 Kgs/Sq.cm. All other requirements shall be conforming I.S. 3844 – 1989. 2 Provision for Hose Reel units on swivelling drum in conjunction with Wet Riser shall be made near each landing valves. 3 Yard Hydrant / Ring Main Hydrant with provision of adequate numbers of Pillar type Hydrant shall be installed surrounding the buildings in accordance with relevant I.S. specifications. 4 Provision of suitable Fire Service Inlet shall be made as per relevant I.S specification.

15. 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 respective pump room for Residential Towers. One such pump shall always be kept on stand-by of diesel driven type.

Provision of separate pump for sprinkler system to be made to keep the Water based system under pressurized condition at all the time and shall be installed. 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 Number and type of fire pumps shall be as per provision of N. B. C. Part

– IV, 2016.

16. SPRINKLER INSTALLATION: The automatic Sprinkler installation shall be provided in the Basement, Podium Parking, all covered parking, MLCP, all Assembly areas and in all floor areas of the building, as per I.S. 9972 and alarm gong to be incorporated along with the sprinkler system.

17. ELECTRICAL INSTALLATION & DISTRIBUTION: 1 The electrical installation including transformers, Switch Gears, L. T., H. T. Rooms, panel rooms , 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 & horizontal ducts shall be sealed at all floor level by approved fire resisting materials. 3 The electrical installation shall be adequately protected with automatic fire detection and suppression system as per provision of N. B. C. Part– IV, 2016 and relevant I. S. specification. 4 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 Detection and Alarm System, signage etc. and also for illuminating the Staircase, corridors etc. and other places of assembly of the building incase of normal power failure.

**Director**
**West Bengal Fire & Emergency Services**

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