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

Memo. No. : WBFES/ A168/14 /Kol/RB/459/14 (459/14) *Date* 16.09.14

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

To : Mr. Raj Kumar Jalan,
Constituted Attorney of
Damodar Ropways & Infra Ltd.,
& 8 Others Co.
1/A, Vansittart Row,
Kolkata-700 001.

Sub : **Fire Safety Recommendation for proposed construction of G+XXIII storied Residential Building at premises No.- 14A, Debendra Lal Khan Road, K.M.C. Ward No-71, Borough-IX, Kolkata-700 025.**

This is in reference to your letter No. WBFES/01/4/DLKR dated 01.01.2014 regarding Fire Safety measure for proposed construction of G+XXIII storied Residential Building at premises No.- 14A, Debendra Lal Khan Road, K.M.C. Ward No-71, Borough IX, Kolkata 700 025.

The plan drawings submitted by you were scrutinized and marked as found necessary from fire safety point of view. In returning one set of plan with recommendation, this office is issuing Fire Safety Recommendation in favour of the aforesaid building subject to the compliance of the following fire safety measure.

Enclo. :

1. One set of plan.
2. Recommendation placed in this file.

16/9/14
DIRECTOR IN CHARGE
FIRE PREVENTION WING
WEST BENGAL FIRE & EMERGENCY SERVICES

RECOMMENDATION

A. CONSTRUCTION :

1. The whole construction of the proposed building shall be carried out as per approved plan drawings conforming the relevant building rules of local Municipal Body of Kolkata Municipal Corporation.
2. The floor area exceeds 750m^2 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 all the vertical ducts by the materials of adequate Fire resisting capacity.

B. OPEN SPACE & APPROACH :

1. The open space surrounding the building shall conform the relevant building rules as well as permit the accessibility and maneuverability of Fire appliance with turning facility.
2. The approach roads 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 – 5 M respecting abutting the road.

C. 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 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 staircase shall be extended up to terrace of the building and shall be negotiable to each floor.
5. 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 openable in the direction of escape.

D. LIFT :

1. The walls of the lift enclosure shall be at least two hours Fire resisting type. Collapsible gate shall not be permitted.
2. One of the lift shall be designed for Fire Lift. The word "FIRE LIFT". Shall conspicuously written at ground floor.

E. REFUGE AREA :

1. Refuge area is not less than 15 Sqm. Shall be provided on the external wall with cantilever projection or other suitable means at 26.75M, 42.20M, 57.95M & 73.70M levels of the building as shown in the drawings.

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

3. The position of Refuge areas shall be such so that they are negotiable by the Fire Services Ladder from the Ground and also to be always kept clear open to sky for easy operation of Hydraulic Platform from the ground level.

F. HALL:

1. The doors/aisles/gangway/cross gangways/seating arrangement/corridors in Hall etc. shall be made as per good practices of national building code, Part-IV Fire protection.

G. BASEMENT:

1. The basement shall be adequately ventilated.

2. Additional staircase from the open air as shown in the drawing shall be constructed beside the ramps conforming relevant I.S. Specification.

3. The basement shall be protected with hose reel system etc.

4. The stair case of Basement shall be enclosed type having fire resistance of not less than 4 hrs. and shall be situated at the periphery of the basement to be entered at ground level only from the open air ad in such position that smoke from any fire in the basement shall not obstruct any exit having the ground and upper floor of the building.

H. FIRE FIGHTING WATER :

Underground water reservoir having water capacity of 1,50,000 ltrs. and overhead reservoir of 25,000 ltrs. capacity exclusively for Fire fighting purpose with replenishing arrangements @ 1000 ltr./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 :

a. Ringmain Hydrant System:

i. 150 mm dia Ringmain water layout arrangement covering the entire premises of the project with provision of piller 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 buildings with adequate numbers 3 way fire service inlet 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 min. 2850 ltrs./min. at the pressure 3.5kg/sq.cm. at any point.

b. Wet Riser & Hose Reels System:-

i. The building shall be provided with Wet Riser and Hose Reel unit with provision of outlets in each floor at the staircases landings/half landings as per suitable at the rate of one such unit of Wet Riser and Hose Reel per 1000sq.m. of floor area.

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

1st Stage Ground floor to 8th floor 200mm dia twin Hydrant outlet.
2nd Stage 8th Floor to Top Floor 150mm. Dia. Twin Hydrant outlet.

iii 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 office building.

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

J. SPRINKLER INSTALLATION:

1. The automatic Sprinkler installation shall be provided in Basement, 1st floor community hall area and all floor living rooms, lift lobby and corridors areas of the building as per I.S. 9972. Alarm gang to be incorporated along with the sprinkler system.

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

A Separate Fire pump shall preferably be made for the total Sprinkler Installation of the Building. Provision of Jockey Pump shall also have to be made to keep the Water based 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 be positive type.

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 & horizontal electrical ducts shall be supply sealed at each floor level.

3 The electrical installation shall be adequately protected with CO_2/D.C.P. Fire Extinguishers.

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 Alarm System, etc. and also for illuminating the Staircase, corridors etc. and other places of assembly of the building incase of normal power failure.

M. INTELLIGENCE ANALOGUE SYSTEM :

1. Auto Fire Alarm System with analogue addressable smoke / Heat detector as per suitability shall be installed in 1st floor area, all floor living rooms, lift lobby, corridor, store room area and electrical sub station 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 mtrs. 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 systems shall be made available in all floors of the building. The system shall be connected to the Main Control Room.

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.

N. 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.

O. MULTI LAYER AUTOMATED MECHANIZED CAR PARKING SYSTEM:

1. **Structural design:-** The M.L.C.P. shall be constructed of structural steel construction.
2. **Vertical Deck Separation:-** For M.L.C.P. having Multi Car Parking level, vertical Fire separation between the upper and lower decks by using a non-perforated and non-combustible materials (Structural Steel Plate) shall be provided. This is to minimize direct impingement of flame to the Car in the upper deck and also to prevent dripping of any possible leaking fuel to the lower deck. 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.
3. **Fire Engine Accessway:-** Accessway shall be provided for the Fire Engine to gain access to the car park entrance and exit.
4. **Fire Hydrant:** Fire hydrants are to be provided in accordance with Cl. 4.4.
5. **Natural Ventilation:-**Each car parking deck shall be provided with at least 50% external ventilation openings of the perimeter wall areas and uniformly distributed.
6. **Sprinkler & Detection System:-** Open Modular Type Sprinkler along with detectors shall be provided in all M.L.C.P. areas as per relevant I.S. Specification.
7. Cross zone wise sprinkler system shall have to be implemented.
8. **Operating System:-** Both Mechanical and Manual type operating system shall have to be provided.

P. 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.

Q. GENERAL RECOMMENDATIONS :

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

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 employees and security staff shall be conversant with installed Fire Fighting equipements 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 the 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 participation of all occupants of building.

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, Final N.O.C. 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.

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