

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/ 692/14

/Kol-RB/1563/12 (1563/12) Date 30.04.14

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

To : Mr. C.P. Kakarania
Authorised Signatory
Bengal Ambuja Housing Development Ltd.
Viswakarma Building
86C-Topsia Road (South)
Kolkata-700 046.



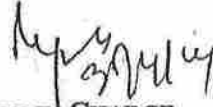
Sub : Fire & Life Safety Recommendation for proposed construction of Residential Building consisting of 2 Blocks-one comprising of 4nos. G+25(G+1+2+22) HIG Residential Tower VIZ. Tower A, B, D & E, one number of (B¹+B²+G+19) mixed used tower marked as tower C & one number G+25 storied LIG/MIG tower at 405, Barakhola, Mukundapur Road, Ward-109, Borough-XII, Kolkata-700 099.

This is in reference to your letter No. Nil dated 12.03.2014 regarding Fire Safety measure for proposed construction of Residential Building consisting of 2 Blocks-one comprising of 4nos. G+25(G+1+2+22) HIG Residential Tower VIZ. Tower A,B, D & E, one number of (B¹+B²+G+19) mixed used tower marked as tower C & one number G+25 storied LIG/MIG tower at 405, Barakhola, Mukundapur Road, Ward-109, Borough-XII, Kolkata-700 099.

The plan drawing 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 Fire Safety Recommendation in favour of the aforesaid building subject to the compliance of the following fire safety measure in cancellation of earlier issued Fire Safety Recommendation vide this office memo no WBFES/3822/Kol/RB/1563/12(1563/12) dated-10-10-2012.

Enclo. :

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


DIRECTOR IN CHARGE
FIRE PREVENTION WING
WEST BENGAL FIRE & EMERGENCY SERVICES

Constituted Attorney
of West Bengal Housing Board



Authorized Signatory

RECOMMENDATION

A. CONSTRUCTION:

1. Materials for rapid flame spread categories including untreated wood fiber board etc. shall not be used. The doors and windows preferably shall be made of metal.
2. The floor area exceeds 750m² shall be suitably compartmented having four hours Fire resisting capacity.
3. The interior finish decoration of the building shall be made with the materials with low flame spread and low smoke and toxic gas generating categories conforming I.S. Specification.
4. All principal staircase shall not be permitted from the Basement.
5. Arrangement shall have made for sealing all the vertical service ducts by the materials of adequate Fire resisting capacity.
6. Fire rating test certificate of all interior finish decoration should be submitted to this office before taking occupancy.
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 and Fire stopped at all floor levels.

B. OPEN SPACE & APPROACH:

1. 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.
2. The approach road and roads surrounding the building shall be sufficiently strong to withstand the load of Fire Engine weighting up to 45 M.T.
3. The width and height of the entry gates to the premises shall not be less than 5m and 6m respectively.
4. Drive way should be free of any type obstruction. No parking will be allowed on the Drive Way.

C. STAIRCASE:

1. Both the staircases 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 staircases. Pressurization shall be maintained round the clock.
2. Both the staircases of the office building shall be enclosed type, entire construction shall be made of brick / R.C.C. type having Fire resisting capacity not less than 4 hours respectively marked in the plan.
3. The staircases 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 area shall have to be provided in the external wall of the building.
4. All the staircases of the building 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.

D. FIRE LIFT:

1. The walls of the lift enclosure of the building shall be at least two hours FIRE resisting type respectively marked in the plan with the event at top of area not less than 0.2m².
2. All lift of the building shall be designed at high speed "Fire Lift" and conspicuously indicated marked in the plan.

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3. One of the lift cars of the 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. All Lifts runs towards basement shall be pressurized 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.

E. REFUGE AREA:

1. Refuge area as per measurement of plan drawing shall be provided on the external wall with cantilever projection or other suitable measure as shown/marked in the plan drawing in different level.
2. The refuge area 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 I.S. Specification.
3. The exit from the basement shall be form open Air and form any points the travel distance shall not exceeds 18.5 M to reach any exit.
4. All the basement shall be protected with Automatic Sprinkler System conforming to I.S. 3844-1989.
5. The staircase of basement shall be of 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 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. In multi-story basements, intake ducts may serve all basement level, but each basement and basement compartment shall have separated smoke outlet duct or ducts.
7. Mechanical extractors shall have an alternative source of supply.
8. Mechanical extractors for smoke venting system shall be provided, the system shall be of such designs to operate in actuation of heat/smoke sensitive detectors or sprinkler an shall have a considerably superior performance compared to the standing units it shall have an arrangement to start it manually

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9. Mechanical extractors shall have an internal locking arrangement, so that extractors shall continue to operate and supply fans shall stop automatically with the actuation of fire detection.

G. FIRE FIGHTING WATER:

1. Water exclusively for Fire Fighting operation shall be ensure minimum 2,00,000 lts. all the time.
2. Over head reservoir of 30,000 ltr. Capacity for each tower incorporated 900LMP Capacity Booster Pump shall have to be provided.
3. The Fire water reservoir shall have overflow arrangement with the domestic reservoir to avert stagnancy of water.
4. Provision of necessary manhole shall be made on the top of the reservoir as per specification.
5. Provision of replenishment at the rate of atleast 2000lts./min. from two separate sources of water supplies shall be made.
6. The deep tube wells for the replenishment of the reservoir shall be incorporated with the auto starting facility with the actuation of auto detection and suppression arrangement of the premises and shall also be connected with dual power supply units.
7. Provision of placing Fire Appliances on the underground water reservoir shall have to be made to draw water in case of emergency.

H. HYDRANT SYSTEM :

- 1 The building shall be provided with Wet Riser at 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 900lts/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.
- 2 Provision for Hose Reel in conjunction with Wet Riser shall be made at each floor level. Conforming the relevant I. S. Specifications.
- 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.

I. Automatic Sprinkler Installation :

150 mm diameter Sprinkler riser incorporated with a separate sprinkler pump capable to discharge 2850 Ltr/min shall have to be provided for the total sprinkler installation of the building.

J. FIRE PUMP :

1. 2850 Lts. per min. giving a pressure not less than 0.3N/m². The pump provided will be of multi stage type with suction and delivery size not less than 15cm. dia with low level riser upto six storied and high level riser delivery for upper floors. A set ball valves to supply the tank with at least 2850 ltrs. Per min. from the fire pump. Alternatively a multistage, multi-outlet pump may be installed.
2. A standby Pump of equal capacity shall be provided on alternative source of supply. Provision of Jockey pump have to be made to keep up the water based system under pressurized condition at all the time.



K. ELECTRICAL DISTRIBUTION SYSTEM:

1. Electrical distribution system of all the building 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 preferably be of F.R.L.S. categories.
2. Electrical distribution System shall conform all the requirements laid down in I.S. 1646-1982.
3. For every 230V wiring above false ceiling 660 grade insulated cable shall be used Transformer Switch Gear H.T., L.T. and other electrical rooms shall be at the ground floor level the other electric rooms shall be at least 4hrs. fire resisting capacity adequate ventilation arrangement shall have to be made in all the rooms, Dry and explosion proof type transformer shall be installed.
4. All electric transformer shall installed of Dry Type with auto shutdown facility.
5. All electrical installation viz. Transformers, Switch Gears, L.T., HT rooms shall be protected with both auto detection and suppression systems as per suitability.
6. All vertical & horizontal electrical ducts must be sealed at each floor level by fire resisting material.

L. AUTO DETECTION AND ALARM SYSTEM :

1. Auto Fire Alarm System which analogue addressable smoke heat detectors as per suitability shall be installed in all floor area of the building except Car parking area.
2. Addressable analogue manual call boxes incorporating with sounders shall be installed in all the floor area of the building in such a manner that maximum travel distance shall not be more than 22.5m in order to reach any of the call point.
3. Both way Public address system linked between all floors and Control Room shall have to be established.
4. 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. pt. IV.

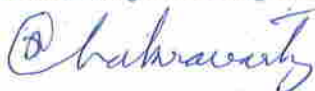
M. MULTI LAYER AUTOMATED MECHANIZED CAR PARKING SYSTEM:

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 CI. 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.

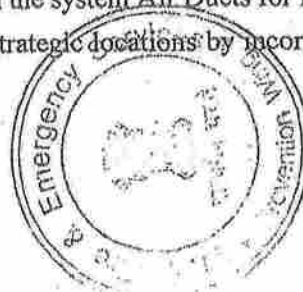
N. AIR CONDITIONING SYSTEM :

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.

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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 arounding 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 fuseable 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. The air handling units room shall not be used for storage of any combustible materials.
16. Inspection panel shall be provided in the main trunking to facilitate the cleaning of ducts of accumulated dust and to obtain access for maintenance of fire dampers.
17. 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 aluminium sheeting) at least 3.2m thick. And which would not readily conduct heat.

O. FIRE DAMPER :

1. Fire damper shall be located in conditional air ducts and return air duct/passages at the following points.
 - a. At the fire separation wall.
 - b. There ducts/passage enter the central vertical shaft.
 - c. Where the ducts pass through floors.
 - d. At the inlet of supply Air Duct and the return air duct of each compartment on every floor.
2. The dampers shall operate automatically and shall simultaneously switch off the air handling fans. Manual operation facilities shall also be provided.
3. Automatic Fire Dampers shall be so arranged so as to close by gravity in the direction of Air movement and to remain rightly closed open operation of a fusible link.



P. FIRST AID FIRE FIGHTING SYSTEM :

1. First Aid Fire fighting arrangement in the style of placing suitable type of portable Fire Extinguishers- I.S.I. mark, Fire Buckets etc. in all floors and venerable locations of the premises shall be made in accordance with I.S. 2190-1992.
2. Special rescue equipment like Smoke Hood, self contained B.A. set portable lights at least two pairs (4sets) shall be made available in the main fire Control Room of the premises.

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. Floor number, directional sign, showing the nearest exit Refuge Area and Fire Points etc. shall have photo luminescent signals at each floor of all blocks of building including shall be made available conforming the relevant I.S. Specification.
3. If diesel oil is stored beyond the specified quantity license shall be accorded from the appropriate authority.
4. The occupants, 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 and means of escapes installed in the building to keep them in perfectly good working conditions at all times by authorized competent agency is this regard.
6. A crew of trained Fireman under the experienced Officer shall be maintained round the clock for safety of the building.
7. Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of building.
8. 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 favor 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 & Life Safety Recommendation will be treated as cancelled.



[Handwritten Signature]
**DIRECTOR IN CHARGE
FIRE PREVENTION WING
WEST BENGAL FIRE & EMERGENCY SERVICES**

**Constituted Attorney
of West Bengal Housing Board**

[Handwritten Signature]

**Authorized Signatory
of Bengal Ambuja Housing Development Limited**

**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/20172018/6555

DATE: 08/08/2018

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

To:
WEST BENGAL HOUSING BOARD
405, BORAKHOLA,
MUKUNDAPUR ROAD, WARD NO-109, BOROUGH-XII, KOLKATA-700099
Kalighat F.S., Survey Park,
Kolkata - 700099 .

Sub :Revised Fire Safety Recommendation for G+XXV storied LIG/MIG Tower, G+XXV Storied Tower A, G+XXV storied Tower B, G+XXV storied Tower D, G+XXV storied Tower E and Podium within a residential complex namely Bengal Ambuja Housing Development Limited at Premises no. 405, Borakhola, Mukundapur Road, Ward No-109, Borough- XII, Kolkata- 700099

This is in reference to your Application No. IND/WB/FES/20172018/6555,dated 08/08/2018, regarding the Fire Safety Measure for G+XXV storied LIG/MIG Tower, G+XXV Storied Tower A, G+XXV storied Tower B, G+XXV storied Tower D, G+XXV storied Tower E and Podium within a residential complex namely Bengal Ambuja Housing Development Limited at Premises no. 405, Borakhola, Mukundapur Road, Ward No-109, Borough- XII, Kolkata- 700099.

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 Revised Fire Safety Recommendation in favour of the aforesaid building subject to the compliance of the following fire safety measure.

Recommendation:

Constituted Attorney
of West Bengal Housing Board



Authorized Signatory
of Bengal Ambuja Housing Development Limited

1. The plan drawing submitted by you was scrutinised by this Office and marked as found necessary from Fire safety point of view. On returning one set of plan drawing, this Office is issuing Revised Fire Safety Recommendation for the above mentioned occupancy. The Fire Safety Recommendation issued earlier vide this Office memo. WBFES/457/15/Kol-RB/1563/12(1563/12) dated. 22.01.2015 will remain same and strictly to be followed.

**Director
West Bengal Fire & Emergency Services**

Signature valid

Digitally signed by ABHIJIT
PANDEY
Date: 2018.08.08 14:19:58 IST

Constituted Attorney
of West Bengal Housing Board
Chakravarty
Authorized Signatory
of Bengal Ambuja Housing Development Limited