TAMIL NADU FIRE AND RESCUE SERVICES DEPARTMENT

From
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To
The Member Secretary,
Chennai Metropolitan Development Authority,
No.1, Gandhi Irwin Road,
Egmore, Chennai – 600 008.

R.Dis.No.10970/C1/2024 Dated.21.08.2024
PP NOC No.157/2024

Sir,

Sub : Tamil Nadu Fire and Rescue Services – Directorate – High Rise Building – Issue of Revised Planning Permission NOC requested– Inspection at M/s. Cyber City Builders & Developers Pvt Ltd, S.No.765/29B2C, 765/29B1, 389/2(pt), 384, 398/2 (pt), 397/2, 390(pt), 391, 380, 379, 392 of Mangadu Village, Kundrathur Main Road, Chennai - Reg.

Ref : 1) The applicant letter dated:03.07.2024.
2) The Joint Director, Northern Region, Report Rc.No.3350/C/2024, Dated:20.08.2024.

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Kindly refer to the letter cited above. The MSB inspection committee of the Northern Region has inspected the site of M/s. Cyber City Builders & Developers Pvt Ltd, S.No.765/29B2C, 765/29B1, 389/2(pt), 384, 398/2 (pt), 397/2, 390(pt), 391, 380, 379, 392 of Mangadu Village, Kundrathur Main Road, Chennai for which the Revised PP NOC has been requested. The committee has made certain observations with regard to fire and life safety, which are reproduced below:-

Observation:

It is a Revised Planning Proposal for Group Development of Residential Apartment Building for **Towers (1, 2 & 3)** consisting of combined extended double basement floor + Ground floor + 19th floors with the equal height of 59.50m. **Club House – 01** consists of combined extended double basement

floor + Ground floor + 2nd floor + swimming pool at terrace floor + Roof top with height of 16.10 (FGL roof top). **Towers (6, 7, 8, 9 & 10)** consisting of Extended Double Basement floor + Ground floor + 19th floor with the equal height of 59.50m. **Club House – 03 consists** of Combined Extended Double Basement floor + Ground floor + 3nd floor + swimming pool at terrace floor + Roof top with height of 16.10 (FGL roof top). The proposal site of total plot area is 108816.72 square meters. The total built up area is 240084.91 square meters. The building has side setback provision of 12 meters at all sides. The building is classified to come under Group A Residential Building, Sub Division A-4 Apartments Building as per the classification of the National Building Code of India Part IV Fire and Life Safe -2016.

The following Fire & Life Safety measures should be provided individually for each block in the proposed building before the issue of compliance certificate as listed below:

i. There should be a Wet-riser along with hose reel assembly per thousand square meters area covering all floor areas with landing valves along with delivery hoses. The raiser should be fully charged with adequate pressure at all times & should have both automatic and manual operation. To feed the wet-riser and sprinkler system an underground static water tank of minimum capacity 150000 liters should be provided with refilling facilities. A terrace level tank of capacity 10000 liters also should be provided. To charge the wet riser system and the sprinkler system one set of pumps shall be provided for each 100 hydrants or part thereof with a maximum of two sets. In case of more than one pump set installation, both pump sets shall be interconnected at their delivery headers. One set of pump contains two electrical pumps of capacity 2280 LPM and equal capacity of one Diesel Pump and two electrical pumps of each capacity of 180 LPM as a Jockey pump should be provided near the underground water tank. The pumps should be capable of developing pressure of 3.5 kg/cm^2 at terrace level

hydrant point. Where more than one set of pump provided water capacity should be doubled.

2. Hose reel assembly should be covering each floor area.
3. Manually operated electric fire alarm system also includes talk back system to be provided at all floors.
4. Yard hydrant should be provided all around the building.
5. Public Address System should be provided connecting all the floors.
6. Automatic sprinkler system should be provided at all floors.
7. Lightning arrester should be provided.
8. Alternative & Independent power systems should be provided to Fire pumps, Emergency Lighting system and fire lift.
9. Fire escape staircase should be pressurized as per the clause 4.4.2.5 of the requirements of National Building Code of India.
10. Fire Exit - Internal staircases and External staircase:

Two staircases are provided for each block and Club Houses. Both the staircases are internal staircases with external wall and naturally ventilated. The natural ventilation requirement of the staircase be achieved through opening at each landing not less than area 0.5 m^2 in the external wall. A cross ventilated staircase shall have 2 such openings in opposite / adjacent walls or the same shall be cross-ventilated through the corridor.

Residential Building:

As per clause 4.4.2.4.3.2 of the National Building Code of India part IV Fire and Life safety 2016 – The staircases shall have minimum width of 1.25 meters without railing. The minimum width of tread without nosing shall be 250 mm for residential Building and the tread shall be constructed and maintained in a manner to prevent slipping. The maximum height of riser shall be 150 mm for Residential Building and the number shall be limited to 12 per flights.

Club House:

As per clause 4.4.2.4.3.2 of the National Building Code of India part IV Fire and Life safety 2016 – All the staircases / corridors shall have minimum width of 2.00 meters without railing. The minimum width of tread without nosing shall be 300 mm for Assembly and the tread shall be constructed and maintained in a manner to prevent slipping. The maximum height of riser shall be 150 mm for Assembly Building and the number shall be limited to 12 per flights.

Every exit, exit access or exit discharge shall be continuously maintained free of all obstructions or impediments to full use in the case of fire or other emergency.

All exits shall provide continuous means of egress to the exterior of a building or to an exterior open space leading to a street.

Exits shall be so arranged that they may be reached without passing through another occupied unit.

As per clause 4.4.2.4.3.4 of the National Building Code of India part IV fire and life safety 2016- All external stairs shall be directly connected to the ground.

Entrance to the external stairs shall be separate and remote form the internal staircase.

Care shall be taken to ensure that no wall opening or window opens on to or close to an external stairs.

The route to the external stairs shall be free of obstructions at all times.

The external stairs shall be constructed of non-combustible materials and any doorway leading to it shall have the required fire resistance.

No external staircase, used as a fire escape, shall be inclined at an angle greater than 45°from the horizontal.

d) Fire lifts: As per clause of the National Building Code of India part-8 fire and life safety 2016- Where applicable, fire lifts shall be provided with a minimum capacity for 8 passengers and fully automated with emergency switch on ground level. In general, buildings 15m in height or above shall be provided with fire lifts.

As per clause of the National Building Code of India part -8 fire and life safety 2016- In case of fire, only fireman shall operate the fire lifts. In normal course, it may be used by other persons.

As per clause of the National Building Code of India part -8 fire and life safety 2016- Each fire lift shall be equipped with suitable inter-communications equipment for communicating with the control room on the ground floor of the buildings.

As per clause of the National Building Code of India part-8 fire and life safety 2016- The number and location of fire lifts in a building shall be decided after taking into consideration various factors like building population, floor area, compartmentation, etc.

11. The applicant should not provide any obstruction like transformer yard, generator, ramp to basement, swimming pool, Landscape, LPG bank etc., in the setback area, so as to facilitate the easy movement and operation of an aerial ladder platform vehicle during emergency. The setback area slop gradient should not be elevated from the ground level. The entry, movement and exit of the setback should have no slope and should be hard paved and support the operation of the Aerial Ladder Platform.
12. Any Ramp should not be exceed the building line and should not obstruct the side set back area at all around the building for the easy movement of an aerial ladder platform vehicle operation during emergency.
13. The swimming pool should be constructed as per G O NO.97 municipal administration and water supply (MA 1) Department Dated.07.07.2015.
14. The First aid firefighting equipments should be provided at all floors in accordance with the IS 2190: 2010 requirements.
15. The basement shall have the following requirements:
    - I) Design criteria:

      As basements lack natural light and ventilation, their access points and integrating them into a building plan must be thoroughly studied. Ramps with very steep slopes should not be allowed and gradient of 1 in 8 or more should alone be permitted. Ramps should not be

constructed affecting the open space adjacent to the building. It should meet the following criteria; access, ventilation, firefighting and escape provisions. Brightly lit, colour coded sections are must to identify the different sections of the basements.

- II) Flooding in basements: Water logged and catchment areas should be thoroughly studied prior to permitting basements in particular areas. Limiting of basement area with reference to plot coverage should be ideal.

a) Every basement shall be in every part at least 2.4m in height from the floor to the underside of the roof slab or ceiling.

b) Adequate ventilation shall be provided for the same as required by the particular occupancy according to byelaws. Any deficiency may be met by providing adequate mechanical ventilation in the form of blowers, exhaust fans, air-conditioning systems, etc.

c) The minimum height of the ceiling of any basement shall be 0.9m and the maximum, 1.2m above the average surrounding ground level;

d) Adequate arrangements shall be made such that surface drainage does not enter the basement;

e) The walls and floors of the basement shall be watertight and be so designed that the effects of the surrounding soil and moisture, if any are taken into account in design and adequate damp proofing treatment is given; and

f) The access to the basement shall be separate from the main and alternative staircase supply from the licensee's service and alternative supply cables. The door/doors provided for the

g) Services room shall have fire resistance of not less than two hours.

16. Basement:

- Basements shall be separately ventilated. Vents with cross-sectional area (aggregate) not less than 2.5 percent of the floor area spread evenly round the perimeter of the basement shall be provided in the

form of grills, or breakable stall board lights or pavement lights or by way of shafts.

Alternatively, a system of mechanical ventilation system may be provided with following requirements.

a) Mechanical ventilation system shall be designed to permit 12 air changes per hour in case of fire or distress call. However, for normal operation, air changes schedule shall be as given in part 8 'Building Services, Section 3 Air conditioning. Heating and Mechanical Ventilation' of the Code.

b) In multi-level basements, independent air intake and smoke exhaust shafts (masonry or reinforced concrete) for respective basement level and compartments therein shall be planned with its make –up air and exhaust air fans located on the respective level and in the respective compartment. Alternatively, in multi-level basements, common intake masonry (or reinforced cements concrete) shaft may serve respective compartments aligned at all basement levels. Similarly, common smoke exhaust / outlet masonry (or reinforced cement concrete) shafts may also be planned to serve such compartments at all basement levels. All supply air fans on respective levels shall be installed in fire resisting level shall be installed in fire resisting room of 120 min. Exhaust fans at the respective level shall be provided with back draft damper connection to the common smoke exhaust shafts ensuring complete isolation and compartmentation of floor isolation to eliminate spread of fire and smoke to the other compartments / floors.

c) Due consideration shall be taken for ensuring proper drainage of such shafts to avoid insanitation condition. Inlets and extracts may be terminated at ground level with stall board or pavement lights as before. Stall board and pavements lights should be in positions easily accessible to the fire brigade and clearly marked 'AIR INLET'

or 'SMOKE OUTLET' with an indication or area served at or near the opening.

d) Smoke from any fire in the basement shall not obstruct any exit serving the ground and upper floor of the building.

e) The smoke exhaust fans in the mechanical ventilation system shall be fire rated, that is 250^0 C for 120 min.

f) The smoke ventilation of the basement car parking areas shall be through provision of supply and exhaust air ducts duly installed with its support and connected to supply air and exhaust fans. Alternatively, a system of impulse fans (jet fans) may be used for meeting the requirement of smoke ventilation complying with the following.

- Structural aspects of beams and other down stands / services shall be taken care of in the planning and provision of the jet fans.
- Fans shall be fire fated, that is 250^0 C for 120 min.
- Fans shall be adequately supported to enable operations for the duration as above.
- Power supply panels for the fans shall be located in fire safe zone to ensure continuity of power supply.
- Power supply cabling shall meet circuit integrity requirements in accordance with accepted standard [4(13)].
- Supply air shall be not be less than 5 m from any exhaust discharge openings.

- The staircase of basements shall be of enclosed type having fire resistance of not less than 2 h 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 serving the ground and upper stores of the building and shall communicate with basement through a lobby provided with fire resisting self-closing doors of 1 h resistance. For travel distance to be provided as per National Building code of India 2016. If the travel

distance exceeds as per National Building code of India 2016 an additional staircases shall be provided at proper places.

- All floors shall be compartmented with area of each compartment not exceeding 3000m^2. Compartmentation shall be achieved by means of fire resisting wall of 2h rating or fire curtain of 2 h rating or water curtain. In case of water curtain, existing water storage shall be supplemented by water demand for water curtain nozzles for 60 min considering the largest size of compartment. The water supply for the water curtain nozzles shall be through independent electric pump of adequate capacity (flow and head) with piping / riser for the water supply to the nozzles.

Basement should not be used for the following purposes:

1. The basement should not be used for residential purposes.
2. Basement should not be used for the custody and care of children, classroom purposes, convalescents, home for aged, infirm and aged people.
3. No service duct shafts should be extended in the basement level.
4. Basement should not be used for assembly halls, exhibition halls, club rooms, gymnasiums and restaurants.
5. Kitchens, canteen, pantry or dining are not allowed in the basement.
6. Basement should not be used for having substation or Oil transformer.
7. Basement should not be used for combustible material storages.
8. Any material which involves highly corrosive, toxic or noxious alkalis, acids or other liquids or chemicals producing flame, fumes, and explosive, poisonous irritant or corrosive gases should not be kept in the basements.

17. **Fire Fighting pump house**

As per clause 5.1.2.2 of the National Building Code of India part IV fire and life safety 2016

a) The pump house is provided at the 1st Basement level. Pump house shall be situated so as to be directly accessible from the surrounding ground level.

b) Pump housing shall be installed not lower than the second basement. When installed in the basement, staircase with direct accessibility (or through enclosed passageway with 120 min fire rating) from the ground, shall be provided. Access to the pump room shall not require to negotiate through other occupancies within the basement.

c) Pump house shall be separated by fire walls all around and doors shall be protected by fire doors (120 min rating).

d) Pump house shall be well ventilated and due care shall be taken to avoid water stagnation.

e) No other utility equipment shall be installed inside the fire pump room.

f) Insertions like flexible couplings, bellows, etc., in the suction and delivery piping shall be suitably planned and installed.

g) Installation of negative suction arrangement and submersible pumps shall not be allowed.

h) Pump house shall be sufficiently large to accommodate all pumps and their accessories like PRVs, installation control valves, valves, diesel tank and electrical panel.

i) Battery of diesel engine operated fire pump shall have separate charger from emergency power supply circuit.

j) Exhaust pipe of diesel engine shall be insulated as per best engineering practice and taken to a safe location at ground level, considering the back pressure.

k) Fire pumps shall be provided with soft starter or variable frequency drive starter.

18. Illuminated exit signage's should be provided with alternative source of power supply or battery back – up with "GLOW TYPE".

19. Service ducts and shafts: As per clause 3.4.5.4 of the National Building Code of India part IV fire and life safety 2016.
20. Fire lift, Electrical Installation and Wiring, AC Duct & other Service Ducts should meet the requirements of NBC of India, Part 8, 2016.
21. The width and height of any arch or gate, if any, should have the clearance of not less than 4.5 m and 5 m respectively.
22. The compulsory open space as per DCR set back area all around the building should be designed to with stand a weight of 45 tons at any point of operation for the use of Hydraulic platform vehicle. In any case, no ramp, landscape garden and swimming pool shall be allowed in the setback are. The entire setback area earmarked shall be hard paved or provided with reinforced concrete so as to withstand the weight of the Aerial Ladder platform.
23. The Service ducts such as power cables, communication cables, A/C ducts etc. should be protected with proper fire sealing/fire dampers.
24. The Cable gallery should be routed through fire resistant duct or fire protected tray. Suitable detectors shall be provided along the lines of the cable gallery.
25. As per section 3.2 of BIS 12459, 1988 – code of practice for fire safety in cable regularization, 1m transparent fire retardant coatings shall be applied to all cables at termination points in electrical panels and all cables inside the distribution boxes.
26. Fire Resistant and Low Smoke Emission Cable should be used.
27. Assembly points should be designated at the ground floor as per the requirements of fire and life safety measures.
28. Dos and Don'ts laminated hanging pads should be available in all floors in Prominent places.
29. Evacuation route plan should be displayed in each floor at prominent places.
30. If the construction is done with prefabricated materials, sufficient natural vent / mechanized ventilation system should be provided.

31. A trained Fire Officer with a crew shall be arranged to maintain as well as to operate the fire protection systems in case of any need.

32. Glass of facade used in external walls shall comply with the following:

    a. For fully sprinklered buildings having fire separation of 9 m or more, tempered glass in a non-combustible assembly with ability to hold the glass in place, shall be provided. It shall be ensured that sprinklers are located within 600 mm of the façade glass providing full coverage to the glass.

    b. All gaps between floor slabs and façade assembly shall be sealed at all levels by approved fire resistance sealant material of equal fire rating as that of floor slab to prevent fire and smoke propagation from one floor to another.

    c. Facade glass at each floor shall have means to open at least 10 percent of the total facade area to exhaust smoke during emergencies. Such openings, with sill level at 1.2 m, shall be in the form of openable panels of size not less than 1500 mm x 1000 mm opening outwards.

33. During construction of the building the following fire protection measures should be provided in good working conditions:

    1) Dry riser minimum 100 mm diameter pipe with hydrant outlets on the floors constructed with a fire service inlet to boost the water in the riser from fire service pumps.

    2) Drums filled with water of 2000 liters capacity with two fire buckets on each floor.

    3) A water storage tank of minimum 20000 liters capacity, which may be used for other construction purposes also.

The MSB inspection team has recommended to issue of revised planning permission / no objection certificate to the proposed building subject to the fulfillment of the above mentioned conditions.

In view of compliance with the above said facts a revised PP/NOC is issued from the fire service point of view so as to accord planning permission for the above said proposed building subject to fulfillment of all the above said conditions, as recommended by the MSB committee. After completion of this project the compliance certificate should be obtained to ensure fire safety measures.

for Director,
Fire and Rescue Services,
Tamil Nadu.



To: M/s. Cyber City Buildsers & Developers Pvt Ltd.,
No.123/1, Mangadu – Kundrathur Main Road,
Mangadu, Chennai – 600 122.

Copy to: The Joint Director, Fire and Rescue Services,
Northern Region, Chennai.