TAMIL NADU FIRE AND RESCUE SERVICES DEPARTMENT

From
Thiru. Abhash Kumar, I.P.S.,
DGP / Director,
Tamil Nadu Fire and Rescue Services,
No.17, Rukmani Lakshmipathi Salai,
Egmore, Chennai – 600 008.

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

R.Dis.No.10129/C1/2023 Dated.03.07.2023
PP NOC No.97/2023

Sir,

Sub : Tamil Nadu Fire and Rescue Services – Directorate – High Rise Building – Issue of Planning Permission NOC requested – Inspection at M/s. Prestige Pallavaram Ventures, Pallavaram Radial Road, Zamin Pallavaram Village, Tambaram, Chennai - Reg.

Ref : 1) The CMDA letter No.CMDA/PP/S/0298/2023, dated:15.06.2023.
2) The Joint Director, Northern Region, Report Rc.No.3106/C/2023 Dated:23.06.2023.

****

Kindly refer to the letter cited above. The MSB inspection committee of the northern region has inspected the site of M/s. Prestige Pallavaram Ventures, Pallavaram Radial Road, Zamin Pallavaram Village, Tambaram, Chennai for which the 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 an application for the proposed construction of residential building blocks-1 to block-13 consist of combined extended double basement floor + ground floor + 14 floors with the height of 45.40 meters. (Totally 2069 dwelling units) block -14 ground floor + 5 floors (club house with gym, yoga, play area, spa, mini theatre, swimming pool, pharmacy, badminton court,

part hall & departmental store). The plot area is 88617.95 sq. mtrs and the total build-up area is 284052.26 sq. mtrs. The proposal has side setback of 10 meters at all around the building. The proposal occupancy is classified to come under Group A Residential Building, Sub-Division A-4 Apartment as per the classification of the National Building Code of India Part IV fire and life safety – 2016.

The following fire & life safety measures should be provided in the proposed residential & club house building before the issue of compliance certificate as listed below:

1. 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. In this proposal 14 numbers of blocks are going to construct with 2069 dwelling units. So, pump and water capacity is suggested based on the dwelling units. To feed the wet-riser and sprinkler system an underground static water tank of minimum capacity 200000 liters should be provided with refilling facilities. A terrace level tank of capacity 10000 liters also should be provided in respective towers. 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 pumps are contains an electrical pump of capacity 2850 LPM for hydrants, an electrical pump of capacity 2850 LPM for sprinkler system, an equal capacity of a 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.
2. Fire service inlets fitted with NRV at ground level should be provided.

3. Manually operated electric fire alarm system including talk back system to be provided at all floors.
4. The first aid firefighting equipment's should be provided at all floors in accordance with the IS 2190: 2010 requirements.
5. Automatic sprinkler system should be provided at basements and club house.
6. Public address system should be provided connecting all the 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. BMS should be provided and automatic detection should be integrated to the BMS system and be manned 24X7.
10. Number of ramp, exit, location and its width should be conforms to the requirements of NBC of India, Part 4, Second Revision 2016.
11. Fire exit - internal staircases and external staircase:

    Each blocks/core provided with two staircases at residential building and at least one staircase should be designated as fire escape staircase. Two staircases are provided at the 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 – The staircases shall have minimum width of 1.25 meters for residential building and two meter for club house without railing. The minimum width of tread without nosing shall be 250 mm for residential building and the minimum width of tread without nosing shall be 300 mm for club house 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 business & mercantile 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 degrees from the horizontal.

- Fire lifts: As per clause 4.4.2.4.3 (h) (6) of NBC 2016. Lift shall not open in staircases.

At least one lift should be designated as Fire lift. 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.

In case of fire, only fireman shall operate the fire lifts. In normal course, it may be used by other persons.

Each fire lift shall be equipped with suitable inter-communications equipment for communicating with the control room on the ground floor of the buildings.

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.,

12. **Firefighting shaft (fire tower):** An enclosed shaft having protected area of 120 min fire resistance rating comprising protected lobby, staircase and fireman's lift, connected directly to exit discharge or through exit passageway with 120 min fire resistant wall at the level of exit discharge to exit discharge. These shall also serve the purpose of exit requirement / strategy from the occupants. The respective floors shall be approachable from fire fighting shaft enable the fire fighters to access the floor and also enabling the Fire fighters to assist in evacuation through fireman's lift. The fire fighting shaft shall be equipped with 120 min fire doors. The fire fighting shaft shall be equipped with fireman talk back, wet riser and landing valve in its lobby, to fight fire by fire fighters.
13. Entry ramp number 2, 4 and exit ramp number 1 & 3 should be modified. Other entry and exit ramps to the basement is shown within the building line in the submitted plan.
14. **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 should not have any slope / gradient and not be elevated from the ground level.**
15. **Vehicular access within the site –** Internal vehicular access way including passage if any within the site shall have a clear width of 7.2m.

16. The basement shall have the following requirements:

- I) Design criteria:

  Ramps with very steep slopes are not allowed and gradient of 1 in 8 or more alone is permissible. Ramps should not be constructed affecting the open space adjacent to the building. It should meet the following criteria; access, ventilation, fire fighting and escape provisions. Brightly lit, colour coded sections are must to identify the different sections of the basements.

- II) Flooding in basements:

  Basement shall be constructed in such a way that there should not be any water logging EB room / generator/ etc., shall not be installed in the basement.

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

17. **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) 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.

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

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

  e) 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.
- All floors shall be compartmented with area of each compartment not exceeding 3000^{m2}. Compartmentation shall be achieved by means of fire barrier wall of 2h rating or water curtain nozzle (K - 23). 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. Separate pump to be provided for water curtain.

18. **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 provided at the Basement level. Pump house shall be situated so as to be directly accessible from the surrounding ground level.

b) 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.

19. Fire pumps shall be provided with soft starter or variable frequency drive starter.
20. 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.
21. Fire lift, electrical installation and wiring, AC duct & other service ducts should meet the requirements of NBC of India, Part 8, 2016.
22. The width and height of any arch or gate, if any, should have the clearance of not less than 7 m respectively.
23. The compulsory open space as per DCR set back area all around the building should be designed to with stand a weight of 64 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.
24. The service ducts such as power cables, communication cables, A/C ducts etc., should be protected with proper fire sealing/fire dampers.
25. 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.
26. 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.
27. Fire resistant and low smoke emission cable should be used.
28. Assembly points should be designated at the ground floor as per the requirements of fire and life safety measures.
29. Dos and don'ts laminated hanging pads should be available in all floors in prominent places.
30. Evacuation route plan should be displayed in each floor at prominent places.

31. If the construction is done with prefabricated materials, sufficient natural vent / mechanized ventilation system should be provided.
32. 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.
33. During construction of the building the following fire protection measures should be provided in good working condition:

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 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 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. Prestige Pallavaram Ventures,
No.471, Top Floo, Prestige Polygon,
Anna Salai, Nandanam, Chennai – 600 035.

TAMILNADU FIRE AND RESCUE SERVICES
DIRECTORATE
CHENNAI-8

Copy to:

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