



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.9382/C1/2024

Dated. 04.07.2024

PP NOC No.113/2024

Sir,

Sub : Tamil Nadu Fire and Rescue Services – Directorate – High Rise Building – Issue of Planning Permission NOC requested– Inspection at M/s. Sanjay Jain (GPA of kanchikarpooram Ltd), Old door no. 19 & 20, New door no.14 & 16, Raja Annamalai Road, Purasaiwalkkam, Chennai - 600084 R.S.No.20/26 & 20/2, Block No. 2 of Purasaiwalkkam village, Chennai - Reg.

Ref : 1) Online application token No.193953 and applicant letter from M/s. Sanjay Jain, Chennai dated.06.06.2024.
2) The Joint Director, Northern Region, Report Rc.No.2733/C/2024, 2846/C/2024, Dated:28.06.2024.

Kindly refer to the letter cited above. The MSB inspection committee of the Northern Region has inspected the site of M/s. Sanjay Jain (GPA of kanchikarpooram Ltd), Old door no. 19 & 20, New door no.14 & 16, Raja Annamalai Road, Purasaiwalkkam, Chennai - 600084 R.S.No.20/26 & 20/2, Block No. 2 of Purasaiwalkkam village, 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 Planning Permission for the construction of Residential cum Commercial Building consisting of Extended Combined Double Basement floor [Basement - 1 floor (parking) + Basement - 2 floor

(parking with 2 pit stack mechanical parking)] + ground floor (shops) + 1st floor (shops, indoor games and gym) + 2nd floor to 11th floor Residential with 30 dwelling units with 36 m height. The plot area is 1642.33 Sq.m and total buildup area is 6493.46 Sq.m. The proposal has side setback of 8 m at all around the building. The building is classified to come under Group "A"- Residential Building, sub division "A-4" Apartment and Group F Mercantile Building sub division F-2 Shops 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 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. To feed the wet-riser and sprinkler system an underground static water tank of minimum capacity 75000 liters should be provided with refilling facilities. A terrace level tank of capacity 5000 liters also should be provided in respective towers. To charge the wet riser system and the sprinkler system one set of pump contains one electrical pump of capacity 2280 LPM and equal capacity of one diesel Pump and an electrical pump of 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/cm² 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 all basements(including all slots of pit parking) and all shops area.
6. Automatic detector system should be provided at all shops, Indoor games and Gym area.
7. Public Address System should be provided connecting all the floors.
8. Lightning arrester should be provided.

9. Alternative & Independent power systems should be provided to Fire pumps, Emergency Lighting system and fire lift.
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:

Two staircases are provided. Both the staircases are internal staircases with external wall. The natural ventilation requirement of the staircase be, achieved through opening at each landing of an 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.

For 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.

For Mercantile Building:-

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 shall have minimum width of 1.50 meters without railing. The minimum width of tread without nosing shall be 300 mm for Mercantile 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 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 from 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.

❖ Fire lifts: As per clause 4.4.2.4.3 (h) (6) of NBC 2016. A staircase shall not be arranged round a lift shaft. 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 Firefighting shaft enable the Fire fighters to access the floor and also enabling the Fire fighters to assist in evacuation through fireman's lift. The firefighting shaft shall be equipped with 120 min fire doors. The firefighting shaft shall be equipped with fireman talk back, wet riser and landing valve in its lobby, to fight fire by fire fighters.

13. Ramp 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, 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. 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, firefighting 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.

16. **Basement:**

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 cement 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°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 rated, that is 250°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.

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) 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.

17. Pit Stack Mechanical Car Parking:

As per Annex (H) H-5 Automated Car Parking utilizing mechanical or computerized / Robotic means:

- a) Automated car parking structure can be of open parking type or enclosed types.
- b) Automated car parking facilities pose more hazard compared to manual parking due to following reasons:
 - ❖ High density of cars due to lose stacking – one over another.
 - ❖ Lack of provision on fire separation/ compartmentation – horizontal or vertical leading to rapid fire spread.
 - ❖ Non – availability of any person to notice/control the fire in initial stages.
 - ❖ Limited access to firefighting personnel.
 - ❖ Extensive height and depth involved with highly combustible load.
- c) Fire escape staircases, at least 1250 mm wide shall be provided at appropriate locations so that no place is more than 45 m from the nearest staircase. Horizontal walkways, at least 1000 mm wide for access to all the areas shall be provided at every parking level.
- d) Travel distance and means of egress shall be governed by the respective sections of this code.
- e) The hazardous areas like DG sets, transformers, HT/LT panels for the parking lot shall be suitably segregated from other areas as per requirements given in this Code and all such areas shall be protected by suitable automatic fire suppressions systems.

The following Fire & Life safety measures should be provided in MLCP:

1. Fire Extinguisher should be provided in MLCP.

2. Automatic Sprinkler system should be provided at MLCP for each slot.
 3. Wet Riser system with Hose Reel should be provided at MLCP.
 4. Yard Hydrant should be provided at MLCP.
 5. Manually Operated Fire Alarm system should be provided at MLCP.
18. 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.
 19. Fire lift, Electrical Installation and Wiring, AC Duct & other Service Ducts should meet the requirements of NBC of India, Part 8, 2016.
 20. The width and height of any arch or gate, if any, should have the clearance of not less than 7 m respectively.
 21. 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 area. 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.
 22. The Service ducts such as power cables, communication cables, A/C ducts etc. should be protected with proper fire sealing/fire dampers.
 23. 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.
 24. 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.
 25. Fire Resistant and Low Smoke Emission Cable should be used.
 26. Assembly points should be designated at the ground floor as per the requirements of fire and life safety measures.
 27. Dos and Don'ts laminated hanging pads should be available in all floors in Prominent places.
 28. Evacuation route plan should be displayed in each floor at prominent places.
 29. If the construction is done with prefabricated materials, sufficient natural vent / mechanized ventilation system should be provided.

30. 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.

31. 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.

LB
8/7/24

for Director,
Fire and Rescue Services,
Tamil Nadu.

To: M/s. Sanjay Jain, (GPA of Kanchi Karpooram Ltd.,)
Door No, 1278A, Flat No.3152, 3rd Block, 15th Floor,
TVH Lumbini Square, Bricklin Road,
Purasawalkkam, Chennai – 600 007.

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

