

**BRIHANMUMBAI MUNICIPAL CORPORATION**  
**MUMBAI FIRE BRIGADE**

**Sub:** Fire safety requirement for the proposed construction of high-rise residential building (Proposed redevelopment of existing societies known as Prajakta CHSL, Smitanjali CHSL, Shwetdeepmala CHSL & New Gajant CHSL) on plot bearing C.T.S. Nos. 63/2, 3(pt.), 4, 5, 7, 10(pt.) of Magathane Village in R/C Ward, Mumbai.

**Ref:** 1) Online submission from **Mr. Rajesh Vishwanath Surve**  
License Surveyor  
2) Online File No. **P-10955/2022/(63/2 And Other)/R/C**  
**Ward/MAGATHANE R/C-CFO/1/New**

**Mr. Rajesh Vishwanath Surve, License surveyor.**

This is a proposal for the proposed construction of high rise residential building comprising of two wings designate as Wing 'A' & 'B'. Whereas Wing 'A' & 'B' having common ground floor on stilt for car parking + common 1<sup>st</sup> to 3<sup>rd</sup> podium floor for car parking by way of 6.00 mtrs wide two way ramp + 1<sup>st</sup> to 32<sup>nd</sup> upper residential floors with total height 118.25 mtrs measured from general ground level to terrace level as shown on the plan.

**The details of floor-wise use of building i.e WING 'A' & 'B' will be as follows:**

Floor level	Detail of usage/ tenements per floor	
	Wing 'A'	Wing 'B'
Ground floor on stilt	Entrance lobby for Each wing + space fire control room + space for pump room + U.G. water storage tank + space for STP + space for Electric substation + Two wheeler parking & surface car parking in stilt area	
1 <sup>st</sup> & 2 <sup>nd</sup> podium floor	Surface car parking by way of 6.00 mtrs wide two way ramp on each floor	
3 <sup>rd</sup> podium floor	Fitness centre in each wing + space for D.G. set + space for meter room + society office + Surface car parking by way of 6.00 mtrs wide two way ramp	
	Wing 'A'	Wing 'B'
1 <sup>st</sup> to 3 <sup>rd</sup> , 5 <sup>th</sup> to 10 <sup>th</sup> , 12 <sup>th</sup> to 17 <sup>th</sup> , 19 <sup>th</sup> to 24 <sup>th</sup> & 26 <sup>th</sup> to 32 <sup>nd</sup> floor	06 nos. of residential flats on each floor	06 nos. of residential flats on each floor
4 <sup>th</sup> , 11 <sup>th</sup> , 18 <sup>th</sup> & 25 <sup>th</sup> floor	05 nos. of residential flats + Refuge area on each floor	05 nos. of residential flats + Refuge area on each floor
Terrace	open to sky - Treated as Refuge area	

**THE DETAILS OF STAIRCASES FOR WING 'A' & 'B':**

<u>No. of staircase</u>	<u>Type of staircase</u>	<u>Width</u>	<u>From – to</u>
02 nos. in each wing	Each of Enclosed type in each wing	Each of 2.00 mtrs in each wing	Each leading from ground floor to terrace level in each wing

The proposed staircases as shown in plans are Enclosed type. One staircase in each wing is internally located & adequately ventilated to outside air through inner chowk and One staircase in each wing is externally located & adequately ventilated to outside air as shown on the plans.

**THE DETAILS OF LIFTS - FOR WING 'A' & 'B':**

No. of lifts	Type of lifts	Profile
03 Nos. in each wing	Passenger lifts in each wing	Each leading from ground floor to terrace level in each wing
01 No. in each wing	Fireman evacuation lift in each wing	Leading from ground floor to terrace floor level & opening at staircase mid-landing on each floor with smoke check lobby on each floor mid-landing level
One of the passenger lift in each lift bank (excluding fireman evacuation lift) in each wing shall be converted into fire lift. The lift lobby & common corridor at each floor level is directly ventilated to outside air as shown on the plans.		

**THE DETAILS OF OPEN SPACES - FOR WING 'A' & 'B':**

The building abuts on junction of two roads i.e. 9.10 mtrs wide Existing Road on North side and 18.30 mtrs wide Existing D.P. Road on West side as shown on the plan by license surveyor.

**The side open spaces around the building are as under:**

Side	Building Line to podium line	Podium line to plot Boundary	Building line to plot Boundary
North	4.16 mtrs to 5.88 mtrs	4.50 mtrs to 5.81 mtrs + 9.10 mtrs wide Existing Road	8.96 mtrs to 11.75 mtrs + 9.10 mtrs wide Existing Road
South	Flushed	9.00 mtrs to 9.01 mtrs	9.00 mtrs to 9.01 mtrs
East	24.49 mtrs to 24.65 mtrs	4.51 mtrs to 9.00 mtrs	30.08 mtrs to 30.34 mtrs
West	Partly Flushed to 14.71 mtrs	4.50 mtrs to 8.73 mtrs + 18.30 mtrs wide Existing D.P. Road	4.50 mtrs to 23.44 mtrs + 18.30 mtrs wide Existing D.P. Road

**THE DETAILS OF REFUGE AREA - FOR WING 'A' & 'B':**

Refuge Floor	Refuge area in Sq.mtrs				Height of the refuge area from general ground level
	(Required)		(Proposed)		
	Wing 'A'	Wing 'B'	Wing 'A'	Wing 'B'	Wing 'A' & 'B'
4 <sup>th</sup> floor	118.71	118.71	126.56	126.35	24.00 mtrs
11 <sup>th</sup> floor	120.50	120.23	127.72	127.72	46.75 mtrs
18 <sup>th</sup> floor	120.50	120.23	127.72	127.72	69.50 mtrs
25 <sup>th</sup> floor	137.95	137.65	139.78	139.78	92.25 mtrs
In addition to above, common terrace of both wings shall be treated as refuge area. E.E.B.P. (WS) shall verify the refuge area calculation. Excess refuge area, shall be counted in F.S.I. as per DCPR 2034.					

**The proposal has been considered favorably taking into consideration the following:**

- i) The building abuts on junction of two roads i.e. 9.10 mtrs wide Existing Road on North side and 18.30 mtrs wide Existing D.P. Road on West side as shown on the plan.
- ii) There shall be no compound wall on 9.10 mtrs wide Existing Road on North side and 18.30 mtrs wide Existing D.P. Road on West side of the building as shown on the plan.
- iii) License surveyor has proposed refuge area for Wing 'A' & 'B' facing road side i.e. on West side from where fire appliances from this department can be operated in case of emergency as shown on the plan.
- iv) As per norms, 5<sup>th</sup> refuge area is to be provided on 32<sup>nd</sup> floor of each wing. But in this case, Architect has included refuge area calculations for 32<sup>nd</sup> floor of each wing in refuge area calculations on 25<sup>th</sup> floor of each wing and has requested this department to consider terrace above 32<sup>nd</sup> floor of each wing to be treated as refuge area. However, the same is considered by this department.
- v) The building will be protected with advance in built fire-fighting system such as wet riser, hydrant system, fire alarm & sprinkler system, integrated system, voice evacuation system, public address system, BMS system etc.
- vi) The fire resistance rating for staircase F.R.D., Lift lobby / protected lobby & the lift doors as per N.B.C. provisions.
- vii) Automatic sprinkler system will be provided in entire building i.e. in each wing including car parking area on ground floor & each podium floor covering each level of car parking, in each fitness centre, in society office, in each habitable room of each residential flats on each floor of each wing & in lift lobby/ common corridor of each floor level of each wing as per relevant I.S. specifications.
- viii) Feasible active and passive fire protection and fire-fighting requirements or any additional fire recommendation/requirements if any for proposed building will be recommended in future from Mumbai Fire Brigade Officer before final occupation.

In view of above, as far as this department is concerned, there would be no objection for the proposed construction of a high rise residential building comprising of two wings designate as Wing 'A' & 'B'. Whereas Wing 'A' & 'B' having common ground floor on stilt for car parking + common 1<sup>st</sup> to 3<sup>rd</sup> podium floor for car parking by way of 6.00 mtrs wide two way ramp + 1<sup>st</sup> to 32<sup>nd</sup> upper residential floors with total height 118.25 mtrs measured from general ground level to terrace level, as shown on enclosed plan signed in token of approval, subject to satisfactory compliance of the following requirements:

- 1) **ACCESS:**
  - a) There shall be no compound wall on 9.10 mtrs wide Existing Road on North side and 18.30 mtrs wide Existing D.P. Road on West side. However, removable chain link with bollards may be permitted at each road side.
  - b) All access & fire tender access should be free of encumbrances.
  - c) **Entire Nalla shown on west side to be covered as shown on the plan & shall be paved suitably to bear the load of fire engines weighing up to 52 m. tones each with a point load of 10 Kgs. per sq.cms and necessary**

**permission / Nalla remarks shall be obtained from the concern municipal authority.**

- d) Courtyards shall be flushed with the road level.

**2) COURTYARDS:**

- a) The available courtyards/ open space, driveways, paved R.G. on all the sides of the building shall be paved, suitably to bear the load of fire engines weighing up to 52 m. tones each with point load of 10 kg/cm<sup>2</sup>.
- b) All the courtyards shall be in one plane and mandatory open space shall be clear of any obstructions including tree.
- c) The courtyards shall be kept free from obstruction at all times.
- d) No structure of any kind shall be permitted in courtyards of the building.

**3) PROTECTION TO STRUCTURAL STEEL:**

- a) All the structural steel members i.e. columns, beams etc., shall be protected with the 02 hours fire resisting materials and methods as stipulated under IS 1942-1960 as application for the building.
- b) A certificate to that effect that the fire resistance protection has been provided as above shall be furnished from the Structural Engineer as the time of application for occupying the building.

**4) STAIRCASE (FOR EACH WING):**

- a) The flight width of each staircase shall be maintained not less than 2.00 mtrs. as shown in the enclosed plans.
- b) The layout of each staircase shall be of enclosed type as shown in the plan throughout its height and shall be approached (gained) at each floor level at least two hours fire resistant self-closing door (as per NBC provisions) placed in the enclosed wall of the staircase.
- c) Staircases are in each wing shall be internally & externally located & adequately ventilated to outside air as shown on the plan
- d) Open-able sashes or R.C.C. grills with clear opening of not less than 0.5 sq. mtrs. per landing on the external wall of the staircase shall be provided.
- e) No combustible material shall be kept or stored in staircase / passage.

**The each staircase terrace door in each wing shall be provided in the manner:**

- a) The top of portion of the doors shall be provided with louvers.
- b) The single latch lock shall be installed from the terrace side at the height of not more than one mtrs.
- c) The glass front of 6-inch diameter with the breakable glass shall be provided just above the single latch lock, so as to open the latch in case of an emergency by breaking glass.
- d) The door shall either be fitted with magnetic lock or shall be synchronize with fire detection and alarm system.

**5) SURFACE CAR PARKING:**

- a) Car parking shall be permitted in the designated area.
- b) Drainage of the car parking area of all the levels shall be laid independent from that of the buildings & it shall be provided with catch pit & fire trapped before connecting the building drainage or Municipal drainage.

- c) Drainage of the car parking areas at all the levels shall be so laid as to prevent any overflow in the staircase, lift shaft etc.
- d) The parking area shall not be used for dwelling purpose & repairing / maintenance purpose, at any time. Dwelling use of naked light/flame, repairing / maintenance of vehicles shall be strictly prohibited in the parking area.
- e) Repairing / servicing of cars, use of naked light shall not be permitted in the car parking areas.
- f) The drive way shall be properly marked & maintained unobstructed.
- g) Automatic sprinkler system conforming to the standards laid down by T.A.C. and relevant I.S. specification shall be provided in car parking area and same shall be coupled with wet riser system of the building.

**6) PASSENGER LIFT (FOR EACH WING):**

- a) Walls enclosing lift shaft shall have a fire resistance of not less than two hours.
- b) Shafts shall have permanent vent of not less than 0.2 sq. mtrs in clear area immediately under the machine room.
- c) Landing doors and lift car doors of the lifts shall be of steel shuttered with fire resistance of one hour. No collapsible shutter shall be permitted.
- d) One of the lift in each lift bank in each wing shall be converted into fire lift and shall be as per specifications laid down under the regulations.

**7) FIRE LIFT (FOR EACH WING):**

- a) To enable fire services personnel to reach the upper floors with the minimum delay, one lift in each lift bank in each wing shall be provided, and shall be available for the exclusive use of the firemen in an emergency.
- b) The lift shall have a floor area of not less than 1.4 sq. mtrs. It shall have loading capacity of not less than 545 k.g. (8 persons lift) with automatic closing doors of minimum 0.8m.width.
- c) The electric supply shall be on a separate service from electric supply mains in a building and the cables run in a route safe from fire, that is, within the lift shaft.
- d) Light & fans in the elevators having wooden paneling or sheet steel construction shall be operated on 24 volt supply.
- e) Fire lift should be provided with a ceiling hatch for use in case for emergency. So that when the car gets stuck up, it shall be easily openable.
- f) In case of failure of normal electric supply, it shall automatically changeover to alternate supply. For apartment houses, this changeover of supply could be done through manually operated changeover switch. Alternatively, the lift shall be so wired that in case of power failure, it comes down at the ground level and comes to stand-still with door open.
- g) The operation of fire lift should be by a simple toggle or two – button switch situated in glass-fronted box adjacent to the lift at the entrance level. When the switch is on, landing call points will become inoperative and the lift will be on car control only or on a priority control device. When the switch is off, the lift will return to normal working. So this lift can be used by the occupants in normal times.
- h) The words 'Fire lift' shall be conspicuously displayed in fluroscent paint on the lift landing doors at each floor level.

- i) Fire lift shall be constructed as per prevailing Indian & International standard.

**8) FIREMAN EVACUATION LIFT (FOR EACH WING):**

- a) Capacity of Fireman Evacuation Lift shall be of 845 to 1000 kgs. /8 to 15 persons and it shall be terminated on ground floor or podium where facility of assembly or evacuation is available in case of emergency.
- b) Fireman Evacuation Lift shall be housed in a separate core having smoke check lobby with opening on each floor and shall be attached with one of the staircases and required access to the staircase on each landing through fire resistance of two hours rating. Alternatively, firemen evacuation lift shall be provided on every mid- landing of one of the enclosed staircases of the building and the staircase shall be protected with smoke check lobby by means of fire resistance door/ fire curtain or fire resistance glass having two hours rating.
- c) All the requirements pertaining to civil and electrical aspects mentioned in NBC for Fire Lift shall be applicable for Fireman Evacuation Lift.
- d) Fireman Evacuation Lift car doors and landing doors shall have two hours fire resistance and shall have provision of glass vision for both doors of minimum 1 ft. X 2 ft. And the glass shall also have two hours fire resistance.
- e) Fireman Evacuation Lift shall have emergency operation switch which will be only operated by fire brigade personnel. On actuation of the switch the Fireman Evacuation Lift will operate from inside and the lift car door shall not open automatically but shall have control from inside to open it. The emergency operation switch shall also be provided in the ground floor lobby.
- f) The backup electric supply shall be through UPS for at least 30 min and it shall be supported online by another regular and alternate emergency supply.
- g) Two-way communication systems shall be provided in Fireman Evacuation Lift car as well as at every landing level including lobby at ground floor.
- h) All the electrical cable shall be fire retardant with low smoke hazard complying relevant BIS standards.
- i) Fireman Evacuation Lift car shall be of made of non-combustible material including interior having minimum two hours resistance.
- j) Lift maintenance shall be carried out only by Lift Manufacturing or Installation Company.
- k) Fireman Evacuation Lift and the staircase attached to it shall be clearly marked mentioning FIRE ESCAPE LIFT/STAIRCASE at each landing door at each floor level.
- l) The smoke check lobby with evacuation lift shall have positive level difference of minimum 75 mm with respect to staircase landing or mid landing level to avoid ingress of water in fireman lift shaft

**9) PODIUM FLOORS:-**

- i) Each podium shall be used for designated purpose as per shown on the plans.
- ii) All the sides of the stilted car parking shall be kept open except parapet walls of not more than 1.2 meters height.
- iii) Drencher system on the top of each podium floor shall be provided at the podium periphery.
- iv) The driveways shall be properly marked and maintained unobstructed, proper illuminated signage shall be provided for escape route car lifts etc. at prominent location

**10) RAMPS FOR PODIUM PARKING:**

- a) The Ramps for parking as shown in enclosed plan provided entry at the ground level.
- b) The gradient of ramp shall not be steeper than 1:10 for vehicular traffic as per Reg. 37(16) of DCPR 2034.
- c) The access provided to the podium shall be kept unobstructed.

**11) VERTICAL FINS (If provided):**

Vertical fins of non-combustible type shall be provided on podium floors with sufficient openings for adequate natural ventilation and shall be of solid core having fire resistance of not less than one hour.

**12) ESCAPE ROUTE FROM FLAT TO STAIRCASE (FOR EACH WING):**

- a) Corridor / lift lobby at each floor level shall be ventilated to the outside air as shown on the plan & shall be kept free from obstructions at all times.
- b) Permanent ventilation in form of grill provided to the corridor / lift lobby / staircase area shall not be bricked up or closed at any time in the future.

**13) ALL ENTRANCE & KITCHEN DOORS (FOR EACH WING):**

- a) All entrance doors including flat entrance, kitchen doors, fitness centre, society office, refuge area, staircase etc. shall be of solid core having fire resistance of not less than one hour (solid wood of 45 mm thickness.).
- b) The fire resistance rating for staircase F.R.D., Lift lobby / protected lobby & the lift doors as per N.B.C. provisions.

**14) ELECTRIC CABLE / DUCT, SERVICES AND ELECTRIC METER ROOM (FOR EACH WING):**

- a) Electric cable shafts shall be exclusively used for electric cables and should not open in staircase enclosure.
- b) Inspection doors for shafts shall have two hours fire resistance.
- c) Electric shafts shall be sealed at each floor level with non-combustible materials such as vermiculite concrete. No storage of any kind shall be done in electric shaft.
- d) Electric wiring/ cable shall be non-toxic, non-flammable, low smoke hazard having copper core / fire resistance for the entire building with provision of ELCB/MCB.
- e) Electric meter room shall be provided at location marked on the plans. It shall be adequately ventilated & easily accessible.
- f) Electric wiring shall be having copper core having the fire resistance and low smoke hazard cables for the entire bldg., with the provision of ELCB/MCB.
- g) Low and medium voltage wiring running in shaft and in false ceiling should run in separate conduits;
- h) Water mains, telephone lines, intercom lines, gas pipes or any other service line should not be laid in the duct for electrical cables; use of bus bar/solid rising mains instead of cables is preferred.
- i) Separate circuits for essential emergency services such as firefighting pumps, lifts, staircases and corridor lighting shall be provided directly from the main switch gear panel and these circuits shall be laid in separate conduit pipes, so that fuse in one circuit will not affect the others. Such circuits shall be protected at origin by an automatic circuit breaker with its no-volt coil

- removed.
- j) Automatic smoke detection system shall be provided in entire electric duct on each floor as per relevant I.S. specifications
  - k) Master switches controlling essential service circuits shall be clearly labeled.
  - l) Master switch for all the emergency services shall be installed in the common passage at ground floor and shall be easily accessible.
- 15) ESCAPE ROUTE LIGHTING (FOR EACH WING):**  
Escape route lighting (staircase and corridor lighting) shall be on independent circuits as per rules.
- 16) FALSE CEILING (if provided) (FOR EACH WING):**  
False ceiling if provided in the building shall be of non-combustible material. Similarly, the suspenders of the false ceiling shall be of no combustible materials.
- 17) MATERIALS FOR INTERIOR DECORATION/FURNISHING (FOR EACH WING):**  
The use of materials which are combustible in nature and may spread toxic fume/gases should not be used for interior decoration/furnishing, etc.
- 18) SMOKE MANAGEMENT SYSTEM (FOR EACH WING):**
- a) Escape routes like staircase, common corridor, lift lobbies, etc. shall not be used as return air passages.
  - b) Direct expansion system shall not be used.
  - c) The ducting shall be constructed of substantial gauge/metal in accordance with IS: 655:1963 metal air duct (revised).
  - d) Wherever the ducts pass through fire walls or floors, the opening around the ducts shall be sealed with fire resisting material such as vermiculite concrete or glass wool. A. C. ducting shall not pass through staircase well.
  - e) As far as possible metallic ducts shall be used even for return air instead of space above false ceiling.
  - f) The material used for insulating the ducts (inside or outside) shall be of non-combustible type such as glass wool or spun glass with neoprene facing etc.
  - g) A.H.U.s if provided:
    - i) shall be provided of adequate size and shall be separate for each floor and air ducts for each floor/each theatre shall be separate and in no way inter connected with the ducting of any other floor.
    - ii) Automatic fire dampers shall be provided at the inlet of fresh air duct and the return air duct of each compartment on every floor. They shall be so arranged as to close by gravity in the direction of air movement and to remain tightly closed upon operation of a smoke detector.
    - iii) Air filters of A.H.U.s shall be of non-combustible material. A. H. U. room shall not be used for storage of any combustible material and shall be provided with one hour fire resistance door.
    - iv) Inspection panel shall be provided in main trucking to facilitate the cleaning of the duct of accumulated dust and to obtain access for maintenance of fire dampers.



- v) No combustible material shall be fixed nearer than 15 cms. To any duct unless such duct is properly enclosed and protected with non-combustible material (glass wool) or spun glass with neoprene facing wrapped with aluminum foil of at least 3.2 mm thick and which does not readily conduct heat.
- vi) The AHU system shall be switch off automatically when either sprinklers system or detector system operate.
- vii) There shall be adequate no of adequate arrangement of smoke and fire venting and enclosure of service duct etc.

**19) FIRE FIGHTING REQUIREMENTS:**

**A) UNDERGROUND WATER STORAGE TANK (COMMON FOR WING 'A' & 'B'):**

An underground water storage tank of 3,00,000 liters capacity shall be provided at location marked on the plan as per design specified in the rules with baffle wall and fire brigade collecting breaching. The design shall be got approved form H.E.'s department prior to erection.

**B) OVERHEAD WATER STORAGE TANK (FOR EACH STAIRCASE OF EACH WING):**

A tank of 50,000 liters capacity shall be provided at the terrace level above each staircase shaft in each wing. The design shall be got approved form H.E.'s Department prior to erection. The tank shall be connected to the wet riser through a booster pump through a non-return valve and gate valve.

**C) WET RISER (FOR EACH STAIRCASE OF EACH WING):**

Wet risers of internal diameter of 15 cms. of G.I. 'C' class pipe shall be provided in duct and at the locations as shown on the enclosed plan & shall be extended from ground floor to terrace, with twin hydrant outlet and hose reel on each floor in such a way as not to reduce the width of the passage. Pressure reducing discs or orifices shall be provided at lower level so as not to exceed the pressure of 5.5 kgs/sq.cm. Wet riser outlet and hose reel at a distance of 100 ft. shall be provided on periphery of all podium / parking floors.

**D) FIRE SERVICES INLET:**

- a) A fire service inlet on the external face of the building near the tank directly fronting the courtyards shall be provide to connect the mobile pump of the fire service independently to (a) The wet riser cum down comer, (b) Sprinkler system (c) drencher system etc.
- b) Breeching connection inlet shall be provided to refill U.G. tank.
- c) Operating switches of fire pumps shall be also provided in glass fronted boxes at ground floor.

**E) AUTOMATIC SPRINKLERS SYSTEM (FOR EACH WING):**

Automatic sprinkler system shall be provided in entire building i.e. in each wing including car parking area on ground floor & each podium floor covering each level of car parking, in each fitness centre, in society office, in each habitable room of each residential flats on each floor of each wing & in lift lobby/ common corridor of each floor level of each wing as per relevant I.S. specifications.

- F) AUTOMATIC DRENCHER SYSTEM (for each podium floor):**  
Automatic drencher system shall be provided on the periphery of the podium floors & shall be at the external wall at the ceiling level of the podium floors & connected to the main sprinkler pump. The automatic drencher system shall be installed as per the standard laid down by T.A.C. & relevant I.S. specifications.
- G) FIRE PUMP, SPRINKLER PUMP, JOCKEY PUMP (COMMON FOR WING 'A' & 'B') & BOOSTER PUMP (SEPARATE FOR WING 'A' & 'B'):**
- a) Wet-riser cum down comer shall be connected to a fire pump at ground level of capacity of not less than 2800 liters/min. capable of giving a pressure of not less than 3.2 kgs/ sq. cms. at the top most hydrant.
  - b) Booster pump of 900 liters/min. capacity giving a pressure of not less than 3.2 kgs./ sq. cms. at the top most hydrant out let of the wet-riser / down comer shall be provided at the terrace level.
  - c) Sprinkler pump of suitable capacity along with jockey pump shall be provided for automatic sprinkler system.
  - d) Electric supply (normal) to these pumps shall be independent circuit.
  - e) Separate jockey pump shall be provided for Wet riser / down comer system & Sprinklers System to keep system pressurized.
  - f) Operating switches for booster pumps shall be also provided in glass fronted boxes in lift lobbies on every alternate floor at prominent place and on ground floor.
  - g) Operating switches of fire pumps shall be also provided in glass fronted boxes at ground floor.
  - h) Only surface mounted pump or vertical turbine pumps shall be installed for fire- fighting installation with adequate size pump room. Operating switches for all pumps shall be also provided in glass fronted boxes in ground floor.
  - i) All the pumps shall be TAC norms or complied to NFPA-20.
- H) STAND BY PUMP (COMMON FOR WING 'A' & 'B'):**  
A set of all above pumps i.e. Fire main pump, sprinkler pump & jockey pump of suitable capacity as stand by pumps shall be provided to the building or a Diesel -oil driven fire pump of suitable capacity shall be kept as stand by pump as per N.B.C.
- I) EXTERNAL HYDRANTS:**  
External courtyard hydrants shall be provided at the distance of 30 mtrs within the confines of the site on the wet riser on the ground floor & each podium floor.
- J) HOSES & HOSE BOXES (FOR EACH WING):**  
Two Hose Boxes, each with two hoses of 15mts length of 63mm dia along with branch shall be provided near wet riser landing valve on ground floor, podium floor & on each floor of each wing.
- K) AUTOMATIC SMOKE DETECTION SYSTEM (FOR EACH WING):**  
Automatic smoke detection system shall be installed in fire control room, in each fitness centre, in society office, in electric meter room & in lift machine room of each wing as per IS specification. Automatic smoke detection system

shall also be installed in lift lobby/ common passage on each floor of each wing & in each electric duct / shaft at each floor of each wing with response indicator & same should be connected to main console panel/fire control room on ground floor level as per IS specification.

**L) ALTERNATE SOURCE OF POWER SUPPLY (COMMON FOR WING 'A' & 'B'):**

An alternate source of LV/HV supply from a separate substation as well as from a D.G. set with appropriate changeover over switch shall be provided for fire lifts, fire pumps, booster pump, sprinkler pump, jockey pump, staircase and corridor lighting circuits and fire alarm system etc. It shall be housed in separate cabin.

**M) PORTABLE FIRE EXTINGUISHERS (FOR EACH WING):**

- a) Two dry chemical powder type fire extinguisher of 06 kgs. Capacity having BIS certification mark and two buckets filled with dry, clean sand shall be kept in electric meter room and in lift machine room.
- b) One dry chemical powder type fire extinguisher of 06 kgs. Capacity having BIS Certification mark shall be kept in fire control room, society office, fitness centre of the building.
- c) Two dry chemical powder type fire extinguisher of 06 kgs. Capacity having BIS Certification mark and one buckets filled with dry, clean sand shall be kept in lift lobby / common corridor on each floor of each wing & in each refuge area of each wing.
- d) Two dry chemical powder type fire extinguishers of 06 kgs Capacity having BIS Certification mark and two buckets filled with dry, clean sand shall be kept for every 100 sq. mtrs of car parking area on ground floor & each podium floor.

**20) FIRE ALARAM SYSTEM / FIRE DETECTION SYSTEM (FOR EACH WING):**

- a) Entire building shall be provided with intelligent analog addressable fire alarm system with microprocessor based main control panel at ground floor level and addressable call points and hooters at each floor level. The design of fire alarm system shall be in accordance with I.S. specification and based on NFPA 72 guidelines (as per 2010 edition).
- b) The addressable fire alarm system shall be equipped with the latest evacuation features such as digital voice evacuation capabilities; fire fighters telephone system, directional sounders etc. The main entry / exit points shall be provided with fire fighters interactive interface to enable viewing of critical information in event of fire.
- c) Appropriate fire detection system shall be installed in kitchen area.
- d) Access control system, close circuit cameras shall be installed in the entire building & connected to B.M.S. control at reception.

**FIRE ALARM SYSTEM:**

The building shall be provided with manual fire alarm system with main control panel at ground floor level and pill-boxes and hooters at each upper floor level. The layout of fire alarm system shall be in accordance with I.S. specification.

- 21) **BREATHING APPARATUS SET (FOR EACH WING):**  
Two self-contained breathing apparatus sets of 45 mins duration each shall be kept in fire control room & in each refuge area of the building.
- 22) **PUBLIC ADDRESS SYSTEM (FOR EACH WING):**  
Entire building shall be provided with public address system as per the rules with main control operator at console panel at ground floor area.
- 23) **SIGNAGES (FOR EACH WING):**  
Self-glowing/florescent exit signs in green color shall be provided, showing the means of escape for the entire building.
- 24) **FIRE FIGHTING REQUIREMENTS AT THE CONSTRUCTION STAGE OF BUILDING (FOR EACH WING):**  
Following fire protection arrangement shall be provided with the following fire protection measures shall be provided & same shall be maintained in good working condition at all the times.
- a) Dry riser of minimum 10 cm diameter pipe with hydrant outlets on the floor constructed with fire service inlet to boost the water in the dry riser & maintenance should be in accordance with good practice.
  - b) Drums of 200 liters capacity filled with water & two fire buckets shall be kept of each floor.
  - c) Water storage tank of minimum 20,000 liters capacity shall be kept at site ready to use in case of emergency, which may be used for other construction purpose also.
- 25) **INTEGRATED SYSTEM (FOR EACH WING):**  
The entire fire-fighting system shall be of the type “Integrated Building Automation System” combining all the systems. Flasher light shall be installed at the top of the building which will be switched on in case of incident of fire in that building to indicate involvement of building in fire. It will also help the incoming fire brigade appliances to reach the spot in time without delay.
- 26) **VOICE EVACUATION SYSTEM (FOR EACH WING):**  
The voice evacuation system shall be integrated to Fire Alarm system so as to facilitate the co-ordination activities in case of fire emergencies. The actuation of the fire alarm control panel shall automatically activate the Voice Evacuation system. A pre-recorded message shall be broadcast on the affected floor, one floor below & two floors above the affected floor.
- 27) **HEAT DETECTORS (FOR EACH WING):**  
Heat detectors shall be installed in the hot areas i.e. kitchen of each flat on each floor of each wing.
- 28) **GAS DETECTOR SYSTEM (FOR EACH WING):**  
LPG /PNG detector system shall be installed in each kitchen of each flat on each floor of each wing as per relevant I.S. specifications.

**29) FIRE DRILLS / EVACUATION DRILLS (FOR EACH WING):**

Fire Drills & Evacuation drills shall be conducted regularly in consultation with Mumbai Fire Brigade & log of the same shall be maintained.

**30) SERVICE DUCT (IF PROVIDED) (FOR EACH WING):**

- a) All service ducts shall have 2 hr. fire resistance.
- b) Inspection door of the service ducts shall have 2 hr. fire resistance.
- c) Duct for water service, drainage line, shall be separate from that of electrical cable duct.
- d) All service duct shafts shall be sealed at each floor level with non-combustible materials such as vermiculite concrete. No storage of any kind shall be done in the shaft.

**31) BMS / FIRE CONTROL ROOM:**

- a) Separate BMS / Fire control room with well qualified man power shall be established at ground floor.
- b) Plan of each floors indicating means of egress as well escape shall be maintained.
- c) Control panel of fire safety system shall be located in the BMS / Fire control room.

**32) DISASTER MANAGEMENT PLAN (FOR EACH WING):**

- a) Disaster management plan for fire & other emergency shall be prepare and kept ready at the control room.
- b) The mock drill with the designated fire marshal for any operation of disaster management plan shall be carried out regularly after occupation as per National building code.
- c) Emergency exit route plan framed in glass shall be displayed in the common corridor, cross passages, staircase/lift lobbies of each floor level.

**33) BUILDING MANAGEMENT SYSTEM (FOR EACH WING):**

- a) Commercial wing should be provided with intelligent, properly designed / programmed building management system having its main control at near reception on ground floor.
- b) Addressable wireless standalone system with connectivity to nearby fire station shall be provided.

**34) TRAINED OFFICER AND SECURITY GUARD:**

- a) A qualified fire officer / supervisor shall be appointed.
- b) The trained security / fire supervisor having basic knowledge of fire-fighting & fix fire-fighting installation shall be provided / posted in the building round the clock.
- c) Maintenance of all the first aid fire-fighting equipment's, fixed installations & other fire-fighting equipment's / appliance in good working condition at all times.
- d) Imparting training to the occupants of the building in the use of fire-fighting equipment provided on the premises & kept them informed about the fire & other emergency evacuation procedures.
- e) To liaise with the City Fire Brigade on regular & continual basis.

**35) GARBAGE CHUTE (if provided) (FOR EACH WING):**

- i) Hoppers under garbage chute shall be situated in well ventilated position and the duct shall be continued upwards with an outlet above roof level and with an enclosure wall of noncombustible material with fire resistance of not less than 02 hours. The hoppers shall not be located within the staircase enclosure.
- ii) Inspection panels and hopper opening shall be fitted with light fitting, metal doors, covers having fire resistance of not less than one hours. This doors shall be provided with spring loaded hinges and shall remained closed at all the time. Flap doors / covers i.e. push –in or lift up type shall not be permitted.
- iii) Garbage chambers shall have walls and floors or roofs constructed of noncombustible and impervious material and shall have fire resistance of not less than 02 hours. They shall be located at a safe distance from exit routes.
- iv) Garbage chute shall be provided with openings on each floor, Design and specifications of refuse chutes shall be in accordance with provision of IS6924.
- v) Automatic sprinkler system & Automatic smoke detection system shall be provided in the garbage collection room as per relevant I.S. specifications.

**36) ELEVATION FEATURE (FOR EACH WING):**

As shown on plan, elevation feature/treatment shall be given as per the MCGM guidelines, DCPR-2034 and circular u/no. u/no. Ch. Eng./D.P./30449/Gen. Dtd.03.01.2017 and Ch. Eng./D.P./110/Gen. Dtd. 30.01.2020.

**37) D.G. SET:**

- a) For proposed D.G. Set acoustic enclosure will be provided for safe operation.
- b) Entire installation of D.G. Set shall be confirming to the Indian electrical act/rules & practice.
- c) A deep tray shall be kept under the fuel tank of the D.G. Set to collect the spillage & same shall be disposed off daily without fail.
- d) Cable in the cable trenches shall be coated with fire retardant material.
- e) Electrical wiring shall be having copper core having the fire resistant and low smoke hazards cables for the entire building with the provision of ELCB/MCB.
- f) In electrical installation of the building shall be provided for vertical electrical shaft with feeder pillar box of a gap of every 24 mtrs. Height of the building.
- g) Adequate air and ventilation for switchgear room is essential to prevent condensation of moistures.
- h) The capacity of the D.G. Set shall be as per electricity company requirements.
- i) D.G. Set shall be properly grounded.
- j) Exhaust of D.G. Set shall not be directed in to the exit/entrance of any adjoining structure.
- k) Sand bed of 6 inches thickness shall be provided below D.G. Set.
- l) Electrical cable of D.G. Set shall be FRLS type.
- m) Adequate quantity of diesel shall be stored in its original container near D.G. Set, away from electrical switches of source of ignition.
- n) Automatic built in circuit breaker shall be provided to the D.G. Set.
- o) Rubber pad shall be provided to the D.G. Set for absorbed vibrations if any.
- p) The D.G. Set area shall be kept prohibited and no unauthorized shall be allow

to enter the area.

- q) Structural stability of the building regarding absorption of the vibration of D.G. Set shall be checked by Structural Engg. before installation of the D.G. Set.
- r) Two foam type fire extinguisher of 9.00 ltrs. Capacity each with ISI certification mark coupled with 4 buckets filled with dry, clean sand shall be kept in the D.G. Set cabin.

**38) ELECTRIC SUB STATION (Dry type only):**

- a) Only dry type substation shall be installed.
- b) Entire installation of substation including switchgear room, capacitors, transformer etc. shall be confirmed to the Indian Electric Act/Rules in practice.
- c) Cables in the cable trenches shall be coated with fire retardant material. Automatic built-in circuit breakers shall be provided in the substation.
- d) The door of the sub-station shall be of two hours fire resistance.
- e) The capacity of the substation shall be as per service provider's requirements.
- f) Adequate heating ventilation of switch room is essential to prevent condensation of moistures.
- g) The substation area shall be kept prohibited and no unauthorized person shall be allowed to enter in the area.
- h) The proposed substation shall be completely segregated either by brick masonry wall each of 9" thickness or R.C.C 4" thickness from the rest of the premises as shown in the enclosed plans.
- i) The danger signage on the substation fencing along with the electric voltage load shall be installed.
- j) Entrance and exit door provided for transformer fencing shall be under lock and key at all the times.
- k) Two dry chemical power type (ABC stored pressure type) fire extinguishers each of 06 kgs. capacity each with BIS certification mark coupled with four buckets filled with dry clean sand shall be kept in the sub-station at the entrance

**39) REFUGE AREA (FOR EACH WING):**

Refuge area provided as shown on the plan for each wing shall be provided within building line conforming to the following requirements:

**i) Manner of refuge area**

- a) The refuge area shall be so located that it shall preferably face the wider open space on the side of the building perpendicular to the main access road.
- b) The refuge area shall be provided with railing / fire rated glass / parapet of height 1.20 mtrs.
- c) The refuge area shall have a door which 'shall be painted or fixed with a sign in luminous paint mentioning "REFUGEAREA".
- d) The lift/s shall not be permitted to open into the refuge areas.
- e) The refuge area provided within building line shall be accessible from common passage/staircase.

**ii) Use of refuge area:**

- a) The refuge area shall be earmarked exclusively for the use of occupants as temporary shelter and for the use of Fire Brigade Department or any other

- organization dealing with fire or other emergencies when occur in the building and also for exercises/drills if conducted by the Fire Brigade Department.
- b) The refuge areas shall not be allowed to be used for any other purpose and it shall be the responsibility of the owner/occupier to maintain the same clean and free of encumbrances and encroachments at all times.
- iii) **Facilities to be provided at refuge area:**
- a) Adequate emergency lighting facility shall be provided.
- b) Adequate drinking water facility shall be provided in the refuge area.
- iv) **Terrace of the building as a refuge area:**
- a. Necessary facilities like emergency lighting, drinking water shall be provided.
- b. The access door/s from the enclosed staircase/s to the terrace floor shall have louvers at top half portion of the door. The entrance doors to the terrace shall be painted or fixed with sign painted in luminous paint mentioning "REFUGEAREA".
- v) **Excess refuge area shall be counted in FSI as per DCPR 2034.**
- 40) **OTHER NOC /PERMISSIONS:-**  
Necessary permissions for licensable trade activity, Nalla remarks, Addition/ alteration, interior work, etc, if any shall be obtained from competent Municipal Authorities & CFO's Department, if any.

Now, License surveyor vide his letter dated 02/06/2022 has certified the total gross built-up area as 27,386.10 sq.mtrs. for the said buildings and party has paid scrutiny fees of Rs. 22,45,660/- vide Online Challan No. : CHE/BP/84791/22 dated 10/06/2022 & Rs. 1/- vide online Challan No. : CHE/BP/84791/22 dated 13/01/2022.

However, E.E.B.P. (WS) is requested to verify the total built-up area & inform this department, if the same is found to be more for the purpose of levying additional Scrutiny fees, if required.

**As per MFS & LA 2006, u/s. 11(1) & as certified by the License surveyor in the classification of building stated in schedule II/part I/ part III, the party has paid fire service fees of Rs. 4,10,792/- vide Online Challan No. : CHE/CFO/85859/22 dated 15/06/2022 on the total gross built-up area of 27,386.10 sq.mtrs. as certified by the license surveyor vide his letter dated 02/06/2022.**

**Note:**

- 1) The fire-fighting installation shall be carried out by Govt. of Maharashtra approved Licensing Agency.
- 2) The width of abutting road & open spaces are mentioned in plans as submitted by the License surveyor attached herewith and these parameters shall be certified by the License surveyor.
- 3) E.E.B.P. (W.S.) shall examine the proposal in context with the relevant Regulations of DCPR-2034.
- 4) The schematic drawings/plans of automatic sprinkler system, automatic smoke detection system, wet riser system, public address system, manual fire alarm system shall be got approved from CFO.
- 5) The area, size, etc. for the sprinkler system, detection system, fire alarm system, wet riser system, public address system, Fire duct, electrical duct etc. to be verified & examined by MEP Consultant.



- 6) Separate necessary permission for any licensable activity shall be obtained from concerned authorities of MCGM/CFO's department, till then shall not be allowed to use.
- 7) There shall be no any tree located in the compulsory open spaces or in the access way near the Entrance gates.
- 8) This recommendation letter is issued only from Fire Protection & Fire-Fighting requirements point of view on behalf of the online application from License surveyor. If any matter pertaining to authenticity or legality shall be cleared by concerned Owner/Occupier/Developer/License surveyor, etc.
- 9) The plans approved along with this approval are issued from Fire Risk & Life Safety point of view only. Approval of these plans does not mean in any way of allowing construction of the building. It is License surveyor/Developers responsibility to take necessary prior approval from all concerned competent authorities for the proposed construction of the building.
- 10) As per section 3 of Maharashtra Fire Prevention and Life Safety Measures Act 2006, it is the liability of Owner/Occupier to provide the Fixed Fire Fighting installations and shall be maintained in good working order& in efficient condition all the time, in accordance with the provisions of Maharashtra Fire Prevention and Life Safety Measures Act or the rules.
- 11) **Entire Nalla shown on west side to be covered as shown on the plan & shall be paved suitably to bear the load of fire engines weighing up to 52 m. tones each with a point load of 10 Kgs. per sq.cms and necessary permission / Nalla remarks shall be obtained from the concern municipal authority.**
- 12) This approval is issued without prejudice to legal matters pending in court of law, if any.

**Divisional Fire Officer  
(Scrutiny, NOC preparation &  
Primary approval)**

**Deputy Chief Fire Officer  
Final Approval**

**Copy to : E.E.B.P.(W.S.)**