

OFFICE OF DY. CHIEF FIRE OFFICER (REGION IV)  
 MUMBAI FIRE BRIGADE  
 Bonivall Regional Command Centre  
 Link Road X Gorai Road Junction  
 Bonivall (West), Mumbai - 400 091.

**MUNICIPAL CORPORATION OF GREATER MUMBAI**  
**MUMBAI FIRE BRIGADE**

No. FB/HR/R4/24  
 Date: 30/07/2020

Subject: NOC stipulating fire-fighting & fire protection requirements for the proposed construction of High rise Residential building (Building No. 12) known as Dindoshi Shivkrupa CO Op HSG SOC on plot bearing C.T.S. No. 147 (Part), Shivdham complex, at village Dindoshi, Malad (E), Mumbai.

- Ref: 1. Letter from Mr. Jigar Nagda, Licensed Surveyor.  
 2. M.F.B. No. HR/R-4/24 Dated 27/07/2020.

**E.E.(B.P. Cell), MHADA**

This is a proposal for the construction of a High rise Residential building No. 12 having Basement + Ground floor + 1<sup>st</sup> to 6<sup>th</sup> Podium floor by means of 03 nos. of car lifts on each floor + 7<sup>th</sup> to 38<sup>th</sup> upper residential floors with total height of 119.93 mtrs. measured from general ground level up to terrace level.

**FLOOR WIDE USE OF THE BUILDING IS AS:**

Floors	Occupancy of Floors
Basement (- 02.40 mtrs.)	Pump room + U.G. tanks
Ground floor	01 No. of Shop with storage + Surface car parking + Double height Entrance Lobby + Electric meter panel room + Space for DG set + Space for Electric substation + Fire control room
1 <sup>st</sup> Podium floor	Fitness center + Society office + Electric meter panel room
2 <sup>nd</sup> to 6 <sup>th</sup> Podium floor	Two wheeler, Surface & 02 tier stack car parking with the provision of 03 nos. of car lifts
7 <sup>th</sup> , 14 <sup>th</sup> & 21 <sup>st</sup> floor	05 Nos. of Residential flats + Refuge area on each floor
8 <sup>th</sup> to 13 <sup>th</sup> , 15 <sup>th</sup> to 20 <sup>th</sup> , 22 <sup>nd</sup> to 27 <sup>th</sup> , 29 <sup>th</sup> to 34 <sup>th</sup> & 36 <sup>th</sup> to 38 <sup>th</sup> floor	08 Nos. of Residential flats on each floor
Terrace	Gazebo + Play area + Sitting area + Part terrace open to sky (treated as refuge area)

**OPEN SPACE:**

The building abuts 09.00 mtrs. wide Existing road (Proposed to be widened 12.00 mtrs. as per layout) on North, East & West side and further connected to 45.70 mtrs wide D.P. Road (Goregaon Mulund link Road on south side & 18.30 mtrs wide D.P. Road at 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	Flushed	03.00 mtrs. to 03.15 mtrs.	03.00 mtrs. to 03.15 mtrs. + 09.00 mtrs. wide Existing road (Proposed to be widened 12.00 mtrs. as per layout)
South	01.39 mtrs. to 02.69 mtrs.	01.52 mtrs. to 01.68 mtrs.	03.01 mtrs. to 09.56 mtrs.

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East	Flushed	03.01 mtrs. to 03.71 mtrs.	03.01 mtrs. to 03.71 mtrs. + 09.00 mtrs. wide Existing road (Proposed to be widened 12.00 mtrs. as per layout)
West	Flushed	03.00 mtrs. to 03.03 mtrs.	03.00 mtrs. to 03.03 mtrs. + 09.00 mtrs. wide Existing road (Proposed to be widened 12.00 mtrs. as per layout)

#### REFUGE AREA :-

Refuge floor	Refuge area in sq. mtrs.		At the height of refuge floor from ground level in mtrs.
	Required	Proposed	
7 <sup>th</sup> floor	96.42	105.37	+ 27.45 (1 <sup>st</sup> Habitable floor)
14 <sup>th</sup> floor	96.42	105.37	+ 47.68
21 <sup>st</sup> floor	94.91	105.37	+ 67.91
28 <sup>th</sup> floor	94.45	101.67	+ 88.14
35 <sup>th</sup> floor	53.85	61.22	+ 108.37

In addition to that, terrace floor of the building will be treated as refuge area. Excess refuge area shall be counted towards FSI as per amended DCPR 2034.

#### THE DETAILS OF STAIRCASES:

No. of staircase	Type of staircase	Width	From - to
One	Enclosed	02.00 mtrs.	Leading from Ground floor to terrace level
One	Enclosed	02.00 mtrs.	Leading from Basement to terrace level

The proposed staircases of the building as shown in plans are enclosed type and are externally located & adequately ventilated to outside air. The staircase leading from basement to terrace level which terminate at ground floor & then is diverted to upper floors.

#### THE DETAILS OF LIFTS:

No. of lifts	Type of lifts	Profile
04 Nos.	Passenger lifts	Leading from Ground floor to terrace floor level
01 No.	Fireman Evacuation lift	Leading from Ground floor to top floor level
03 Nos.	Car lifts	Leading from ground floor to 6 <sup>th</sup> podium floor

Two passenger lift leading from ground to terrace floor level shall be converted into fire lift as per norms. The lift lobby & common corridor at each floor level is directly ventilated to outside air as shown on the plans.

The proposal is considered favorably as,

- The building abuts 09.00 mtrs. wide Existing road (Proposed to be widened 12.00 mtrs. as per layout) on North, East & West side and further connected to 45.70 mtrs wide D.P. Road (Goregaon Mulund link Road on south side & 18.30 mtrs wide D.P. Road at West side as shown on the plan by Licensed Surveyor.
- There shall no compound wall on road side i.e. 09.00 mtrs. wide Existing road (Proposed to be widened 12.00 mtrs. as per layout) on North, East & West side.
- Automatic sprinkler system shall be provided in each habitable room of each residential flat on each floor, in shop on ground & in entire Car parking area on ground & each podium floor covering each car parking as well as in lift lobby / common corridor at each floor level.

- d. Automatic smoke detection system shall be provided in shop, in society office, in fitness center, in each electric meter room & in lift machine room of the building.
- e. The lift lobby / common passage are ventilated to outside air.
- f. The Licensed Surveyor has also been directed to provide alternate source of power supply for fire-fighting systems from a separate electric substation as well as D.G. set.
- g. The Building will be protected with advance in-built fixed firefighting system, such as wet riser system, automatic sprinkler system, voice evacuation system, Fire alarm & detection system, fireman evacuation lift etc.
- h. During construction stage and prior to final occupation party agreed to comply with additional requirements stipulated by Mumbai Fire Brigade Department.

In the view of the above, as far as this department is concerned, there would be no objection to construct a High rise Residential building No. 12 having Basement + Ground floor + 1<sup>st</sup> to 6<sup>th</sup> Podium floor + 7<sup>th</sup> to 38<sup>th</sup> upper residential floors with total height of 119.93 mtrs. measured from general ground level up to terrace level, as per the details shown on enclosed plan signed in token of approval, subject to satisfactory compliances of the following requirements.

**1. ACCESS :**

Entrance / exits sliding gates of min. 9.00 mtrs. shall be provided at each road side as shown on the plans. Archways, if provided shall have height not less than 6.00 mtrs. Courtyards shall be flushed with the road level.

**2. COURTYARDS :**

- i) The entire available courtyards on all the sides of the building shall be paved suitably to bear the load of fire engines weighing up to 48 m. tones each.
- ii) All the courtyards shall be in one plane.
- iii) The courtyards shall be kept free from obstruction at all times.
- iv) Parking shall not be permitted in compulsory open spaces.
- v) 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 & methods as stipulated under IS 1942-1960 as application for residential building.
- b) A certificate for as stated above shall be furnished from the Structural Engineer as the time of application for occupying the building.

**4. STAIRCASE:**

- i) The layout of both the staircases shall be enclosed type as shown in the plan throughout its height.
- ii) The flight width of the staircases shall not be less than 2.00 mtrs throughout its height.
- iii) Permanent vent at the top equal to 5% of the cross sectional area of the staircase shall be provided.
- iv) 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.
- v) Nothing shall be kept or stored in staircase / passage.

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

- a) The top half portion of the doors shall be provided with louvers.
- b) The glass front of 6 inch diameter with the breakable glass shall be provided just above the latch lock, so as to open the latch in case of an emergency by breaking glass.
- c) The latch-lock shall be installed from the terrace side at the height if not more than 1 mtrs.
- d) The door shall either be fitted with magnetic lock connected to console & detection system or shall be synchronized with fire detection and alarm system.

**5. SURFACE/ STACK CAR PARKING :**

- i) The designated parking shall be used for car parking only.
- ii) The drainage of the car parking areas shall be separate from that of the building and shall be provided with catch with fire trap before connecting to Municipal Sewer.
- iii) Repairing / servicing of cars, use of naked light shall not be permitted in the car parking areas.
- iv) The parking area shall not be used for dwelling purpose and repairing / maintenance of vehicles, storage, trade activity etc, at any time and use of naked light / flame shall be strictly prohibited.
- v) Vertical deck separation shall be provided between the upper & lower decks of stack parking by using the non-perforated and non combustible materials. (structural steel plate) This is to minimize direct impingement of flame to the car in the upper deck and also to prevent dripping of any possible leaking fuel to the lower deck.
- vi) Elements of the stack car parking structure shall have 1 hr. fire resistance.
- vii) Each car parking deck shall have 1 hr. fire resistance.
- viii) Parking area shall be accessible by trained staff when carrying out the maintenance work.
- ix) Entire stack car parking shall be provided with sprinkler system covering all levels of parking.
- x) The parking system is to be ceased during the maintenance operation.
- xi) The drive ways shall be properly marked & maintained unobstructed. Proper illuminated signage's for escape routes, ramps, etc. shall be provided at prominent locations.

**6. BASEMENT :-**

- a. The basement shall be used for designated purpose i.e. Pump room only.
- b. Entry to pump room of the basement shall be gained through enclosed type staircase as shown on the plan.
- c. The basement shall be provided with natural / Mechanical ventilations through cut outs as shown in the plan.
- d. Two Dry Chemical Powder fire extinguisher ABC type of 06 kgs. Capacity each shall be kept in basement

**7. PODIUM FLOORS:**

- a. External sides of the each podium floor shall be provided with parapet wall of height 01.10 mtrs. and shall be open above it. The open sides of the podium floor shall not be enclosed.
- b. Wall drenchers shall be provided at external sides at each podium floor.

- c. All the sides of the stilted / covered car parking shall be kept open except parapet walls of not more than 0.75 meters height.
- d. Automatic sprinkler system to the each podium floor shall be provided.
- e. The driveways shall be properly marked and maintained unobstructed, proper illuminated signage shall be provided for escape route, ramps etc. at prominent location.
- f. Vertical fins provided to the podium floors shall be of non combustible material & shall have sufficient openings for adequate ventilation.

**8. CORRIDOR / LIFT LOBBY:**

- a. Corridor & lift lobby at each floor level shall be naturally/mechanically ventilated.
- b. The common corridor & lift lobby at each floor level shall be kept free from obstructions at all times.
- c. Proper signages for way to staircase, escape routes, staircase, floor nos. etc. shall be provided at each floor of building.
- d. Portable lights / insta lights shall be provided at strategic locations in the staircase and lift lobby.

**9. STAIRCASE AND CORRIDOR LIGHTINGS:**

- a) The staircase and corridor lighting shall be on separate circuits and shall be independently connected so that they could be operated by one switch installation on the ground floor control room easily accessible to fire fighting staff at any time irrespective of the position of the individual control of the light points, if any.
- b) Staircase and corridor lighting shall also be connected to alternate supply.
- c) Double throw switches should be installed to ensure that lighting in the staircase and the corridor do not get connected to two sources of supply simultaneously. A double throw switch shall be installed in the service room to terminate the stand-by-supply.
- d) Emergency lights shall be provided in the staircases/corridors.

**10. ENTRANCE DOORS:**

All entrance doors including flat entrance door, Kitchen doors etc. shall be of solid core having fire resistance of not less than half an hour (solid wood of 45 mm. thicknesses).

**11. LIFT :**

- i) Walls enclosing lift shaft shall have a fire resistance of not less than two hours.
- ii) Shafts shall have permanent vent of not less than 0.2 sq. mtrs in clear area immediately under the machine room.
- iii) 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.
- iv) 02 of the lifts of the passenger lift shall be converted into fire lift and shall be as per Specifications laid down under the regulations, a toggle switch shall be provided to this lift for the use of Firemen.
- v) Threshold of non combustible material shall be provided at the entrance of each landing door.

**12. FIRE LIFT:**

- i) To enable fire services personnel to reach the upper floors with the minimum delay, 02 Nos. of fire lift shall be provided, and shall be available for the exclusive use of the firemen in an emergency.

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- ii) 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 0.8 m. width.
- iii) 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.
- iv) Light & fans in the elevators having wooden paneling or sheet steel construction shall be operated on 24 volt supply.
- v) 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.
- vi) 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.
- vii) 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.
- viii) The words 'Fire lift' shall be conspicuously displayed in fluroscent paint on the lift landing doors at each floor level.
- ix) Fire lift shall be constructed as per prevailing Indian & International standard.

### **13. FIREMEN EVACUATION LIFT :**

- 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 available in case of emergency and shall not communicate to the basement.
- 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 midlanding of one of the enclosed staircases of building and the staircase shall be protected with smoke check lobby by means of fire resistance door/fire curtain/fire resistance glass having two hours fire resistance.
- 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 for 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 lobby ground floor.
- f. The back up electric supply shall be supported by another regular and alternate emergency supply.
- g. Two way communication system 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 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 level of smoke check lobby of Fireman Evacuation Lift shall be 75mm higher than the mid-landing/landing level of the staircase to avoid ingress of water in fireman Lift Shaft

#### **14. CAR LIFT:**

- a. All the structural steel members of the car lift well i.e. columns, beams etc shall be protected with the fire resisting/ retardant materials and methods as stipulated under relevant IS specification. A certificate to that effect shall be furnished from chartered structural Engineer.
- b. The electrical cables used internally shall be fire retardant and heat resistant of capacity 105 degree centre grade.
- c. Emergency stop switch shall be installed inside the auto parking system at the top of the car lift, near the driving unit and on the main control panel for activation in case of any emergency, for the power cut off to the main motor and all operations to stop.
- d. Blue & Red display lamps indicating whether system is ready to accept the car shall be installed at the entry point of the car. When the red lamp is on, car should not enter into the tower.
- e. Threshold of non-combustible material shall be provided at the entrance of each landing door.

#### **15. ELECTRIC CABLE DUCT AND ELECTRIC METER ROOM/PANEL:**

- a) Electric cable duct shall be exclusively used for electric cables and should not open in staircase enclosure.
- b) Inspection doors for duct shall have two hours fire resistance.
- c) Electric ducts 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, fire retardant, 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 plan. It shall be adequately ventilated & easily accessible.
- f) Low and medium voltage wiring running in shaft and in false ceiling should run in separate conduits;
- g) 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
- h) Separate circuits for 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.
- i) Automatic smoke detector system shall be provided in each electric shaft on each floor along with response indicator which shall be connected to main console panel board on ground floor level and each floor level

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- j) Master switches controlling essential service circuits shall be clearly labeled in the building.

**16. ELECTRIC SUB STATION (dry type):**

- 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 of 4" thickness from the rest of the premises as shown in the enclosed plans.
- i) The danger signage shall be provided on the substation fencing along with the electric voltage load.
- 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 09 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.

**17. D.G. SET :-**

- a. D.G. set with appropriate change over switch shall be provided for fire pumps, sprinkler pump, booster pump, staircase and corridor lighting circuits, manual fire alarm system & Fire lift.
- b. For proposed D.G. Set acoustic enclosure will be provided for safe operation.
- c. Entire Installation of D.G. Set shall be conforming to the Indian Electrical Act / Rules in practice.
- d. A deep tray shall be kept under the fuel tank of the D.G. Set to collect the spillage and the same shall be disposed off daily without fail.
- e. Cables in the cable trenches shall be coated with fire retardant material.
- f. Electric wiring shall be having copper core having the fire resistance and low smoke hazard cables for the entire building with provision of ELCB/MCB.
- g. In electrical installation of the building Bus Bar System shall be provided for vertical electrical shaft with feeder pillar box after a gap of every 24.00 metres height of building.
- h. Adequate air and ventilation for Switchgear Room is essential to prevent condensation of moistures.
- i. The capacity of the D.G. Set shall be 40 KVA and as per BEST's requirements.
- j. The door of D.G. Set room shall be of two hours fire resistance.
- k. The D.G. Set shall be properly grounded.
- l. Exhaust of D.G. set shall not be directed in to the exit / entrance of any adjoining structures.
- m. Sand bed of 6 inches thickness shall be provided below the D.G. Set.
- n. Electric cable of the D.G. Set shall be of FRLS type.
- o. Adequate quantity of spare diesel shall be stored in its original container near the D.G. Set, away from the electric switches of source of ignition.



- p. Automatic built-in circuit breaker shall be provided to the D.G. Set.
- q. Rubber pad shall be provided to the D.G. set for absorb vibration, if any.
- r. The D.G. Set area shall be kept prohibited and no unauthorized person shall be allowed to enter in the area.
- s. Structural stability of the building regarding absorption of the vibrations of D.G. set shall be checked by Structural Engineer before installation of D.G. set.
- t. Two Foam type fire extinguishers of 9 litres capacity each with ISI certification mark coupled with four buckets filled with dry, clean sand shall be kept in the D.G. Set Cabin.

**18. FALSE CEILING (if provided):**

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

**19. MATERIALS FOR INTERIOR DECORATION/FURNISHING:**

The use of materials which are combustible in nature and may spread toxic fume/ gases should not be used for interior decoration/furnishing, etc.'

**20. FIRE-FIGHTING REQUIREMENTS :**

**A) UNDERGROUND WATER STORAGE TANK:**

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):**

A tank of 50,000 liters capacity shall be provided at the terrace level. 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 both the staircases):**

Wet riser of internal diameter of 15 cms. of G.I. 'C' class pipe shall be provided in duct as shown on the enclosed plan, 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. A fire service inlet on the static tank directly fronting courtyards shall be provided to connect the mobile pump of the fire service to the wet riser & Sprinkler system.

**D) FIRE SERVICES INLET:**

- a) Fire service inlet shall be provided to refill U.G. tank as well as to feed riser system by passing the fire pump & to feed i) Automatic sprinkler system ii) Automatic drencher system iii) wet risers.
- b) Operating switches of fire pumps shall be also provided in glass fronted boxes at ground floor

**E) AUTOMATIC SPRINKLERS SYSTEM:**

Automatic sprinkler system shall be provided in car parking area on ground floor & each podium floor covering each level of car parking, in shop on ground floor, in fitness center, in society office, in each habitable room of each residential flat on

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each floor, in fire control room & in lift lobby/common corridor at each floor level of the building as per relevant I.S. standards

**F) FIRE PUMP, BOOSTER PUMP, SPRINKLER PUMP AND JOCKEY PUMP:**

- a) Wet-risers 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. The fire pump shall be coupled with jockey pump of sufficient capacity. Separate jockey pump shall be provided to Wet riser system of the building to keep system pressurized.
- 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 shall be provided at the terrace level of the building.
- 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) Operating switches for booster pumps shall be also provided in glass fronted boxes in lift lobbies on each floor of the building at easily accessible place.
- f) Operating switches of fire pumps shall be also provided in glass fronted boxes at ground level.
- g) All above pumps should be surface mounted or vertical turbine type (submersible pump not permitted) along with adequate size of pump room.
- h) All the pumps shall be TAC norms or complied to NFPA-20.

**G) STANDBY PUMP:**

A separate set of 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

**H) 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.

**I) FIRE FIGHTING REQUIREMENTS AT THE CONSTRUCTION STAGE OF BUILDING:**

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 2000 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.

**J) HOSES & HOSE BOXES:**

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 & each podium.

**K) AUTOMATIC SMOKE DETECTION SYSTEM:**

Automatic smoke detection system shall be installed in Fitness centre, society office, in shop, in each Lift machine room and in each electric meter room as per IS

specifications. Also Automatic smoke detection system shall be provided on each floor with response indicator & same should be connected to main console panel on ground floor level, as per IS specification.

**L) ALTERNATE SOURCE OF POWER SUPPLY:**

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. It shall be housed in separate cabin

**M) PORTABLE FIRE EXTINGUISHERS:**

- a) One dry chemical powder type fire extinguisher of 09 kgs. Capacity having BIS certification mark and two buckets filled with dry, clean sand shall be kept in each electric meter room and in each lift machine room.
- b) Two dry chemical powder type fire extinguisher of 09kgs. Capacity having BIS certification mark shall be kept at for every 100 sq. mtrs of car parking area on ground & on each podium floor.
- c) Two dry chemical powder type fire extinguisher of 09kgs. Capacity having BIS certification mark shall be kept at on each floor & in Each Refuge area.

**21. DRENCHER SYSTEM: (For all Podium floors)**

Automatic Drencher system should be provided on the periphery of the each podium floor and should be connected to the main sprinkler pump as per the standard laid down in relevant I.S. Specifications

**22. FIRE ALARM SYSTEM :**

Entire building shall be provided with manual fire alarm system with main control panel at ground floor level and pillbox and hooters at each of the upper floors. The layout of the fire alarm system shall be in accordance with Indian Standard Specification.

**23. PANEL BOARD OF FIREFIGHTING SYSTEM:**

Fire alarm system, public address system, alternate supply, etc. panels shall be installed on ground floor at the location shown in the plans & which shall be manned 24 hrs.

**24. PUBLIC ADDRESS SYSTEM:**

The entire building shall be provided with the public address system in common areas with main control panel at ground floor reception area.

**25. SIGNAGES:**

Self glowing/florescent exit signs in green color shall be provided, showing the means of escape for the entire building.

**26. INTEGRATED SYSTEM :**

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.

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**27. FIRE CONTROL ROOM:**

- a. Separate Fire Control room with well qualified man power shall be established on ground floor.
- b. Plan of each floors indicating means of egress as well escape shall be provided on each floor as well as in Fire Control room.
- c. The Master switches controlling essential service circuits shall be provided in the Fire Control room and shall be clearly labeled and operations of the same shall be carried out only by trained personnel or Fire Brigade personnel.
- d. The manual control for the changeover switch from main to D.G. Set/ other substation alternate supplies shall be provided in the Fire Control room.
- e. Emergency electrical services / switches shall be provided in the Fire Control room.

**28. DISASTER MANAGEMENT PLAN :**

- 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.

**29. BREATHING APPARATUS SET:**

Two Self-contained Compressed Air Breathing Apparatus sets of 45 minutes duration each shall be kept in the fire control room & two Self-contained Compressed Air Breathing Apparatus sets of same capacity shall be kept in refuge area in consultation with C.F.O.

**30. SERVICE DUCT (If Provided):**

- 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. ELEVATION FEATURE:**

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

**32. FIRE DRILLS / EVACUATION DRILLS:**

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

**33. VOICE EVACUATION SYSTEM :**

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.

### **34. OTHER NOC/PERMISSIONS:**

Necessary permission for NOC, addition/alteration, trade activity, etc. shall be obtained from competent municipal authorities/CFO department if any.

### **35. TRAINED OFFICER / SECURITY GUARDS:**

- a) A qualified fire officer / supervisor shall be appointed.
- b) The trained security / fire supervisor having basic knowledge of firefighting & fix firefighting installation shall be provided / posted in the building round the clock.
- c) Maintenance of all the first aid firefighting equipment's, fixed installations & other firefighting 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.

### **36. REFUGE AREA:**

- A. The Refuge area for the building is provided on 7<sup>th</sup>, 14<sup>th</sup>, 21<sup>st</sup>, 28<sup>th</sup> & 35<sup>th</sup> floor level as shown on the plan. The refuge area is provided within the building line and same shall confirm to the following requirements.
  - i) The layout of refuge area shall not be changed / modified at any time in future.
  - ii) The refuge area shall be provided with railing / parapet of 1.10 mtrs. height on open side and shall be of sound construction.
  - iii) There shall not be any opening/s into the refuge area from any portion of the occupied premises.
  - iv) Refuge area shall be segregated by brick masonry partition wall of 9" thickness or concrete block wall of 6" thickness and access to the refuge area shall be gained through half an hour fire resistance self closing door.
  - v) The refuge area shall be earmarked exclusively for the use of occupants as temporary shelter and for the use of fire brigade or any other organization dealing with fire or other emergency when it occurs in the building and also for exercises / drills, if conducted by the Fire Brigade Department.
  - vi) The refuge area shall not be allowed to be used for any other purpose and it shall be responsibility of the owner / occupier to maintain the same clean and free of encumbrance and encroachments at all times.
  - vii) The entrance door to the refuge area shall be painted or fixed with a sign painted in luminous paint mentioning "REFUGE AREA IN CASE OF EMERGENCY".
  - viii) Adequate drinking water facility shall be provided in the refuge area.
  - ix) Adequate emergency lighting facility connected to the electric circuit to the staircase, corridor / passage etc. lighting shall be provided in the refuge area.
- B. In addition to above the terrace of the building shall be treated as refuge area and shall be provided as under:
  - i) The entrance door to the refuge area shall be painted or fixed with a sign painted in luminous paint mentioning "REFUGE AREA IN CASE OF EMERGENCY".
  - ii) Adequate drinking water facility shall be provided in the refuge area.
  - iii) Adequate emergency lighting facility connected to the electric circuit to the staircase, corridor / passage etc. lighting shall be provided".

The party has paid scrutiny fee of Rs. 11,68,200/- vide Receipt No. 3554860, 3554861 & 3554862 (SAP DOC NO: 1003878860) dated 29/07/2020 on the gross built-up area of 19,800.00 sq. mtrs. as certified by the Licensed surveyor.

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30/07/2020

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30/07/2020

However, E.E.(B.P. Cell), MHADA is requested to verify the gross built up area and inform this department if the same is found to be more for levying the additional scrutiny fees if any.

The width of the Abutting road / Access road, Open spaces mentioned in this N.O.C. are as per plans submitted by the Licensed Surveyor, attached herewith. E.E.(B.P. Cell), MHADA shall verify these parameters, civil work and all other requirement pertaining to Civil Engineering side including abutting road / access road width, open space, staircase, travel distance, common corridor, floor occupancy/ floor wise users, height of building, lobby ventilation etc as per DCPR 2034. If the same is not as per DCPR2034, this proposal shall be referred back to this department.

This N.O.C is issued for the proposed building from Fire Risk / Fire Safety point of view only. The plans approved along with this N.O.C. are approved from Fire Risk / Fire Safety point of view only. Approval of this plan does not mean in any way of allowing construction of the building. It is the Licensed Surveyor / Developer's responsibility to take necessary prior approval from all concerned competent authorities for the proposed construction of the building.

**Note:**

1. The Area Calculation submitted by the Licensed Surveyor in the plans shall be verified by E.E.(B.P. Cell), MHADA & if any change from the proposal shall be referred back to this department.
2. There shall be no tree or any obstruction allowed in the compulsory open spaces and the same shall be kept free of obstruction all times for maneuvering of fire-appliances. Further, necessary permissions shall be obtained from Sup. of Garden Dept./ Tree Officer & competent Municipal Authorities regarding shifting / replanting of the existing trees (if any) in the compulsory open space of the building.
3. The fire-fighting installation shall be carried out by approved Licensed Agency.
4. E.E.(B.P. Cell), MHADA shall verify civil work and all other requirement pertaining to Civil Engineering side including abutting road / access road width, open space, staircase, travel distance, common corridor, floor occupancy/ floor wise users, height of building, lobby ventilation etc as per DCPR 2034 & orders of Hon. Supreme Court. If the same is not as per DCPR2034, this proposal shall be referred back to this department.
5. Architect has directly submitted documents and plans to this Department for obtaining N.O.C. from fire safety point of view but all the documents & plans should be scrutinized by E.E.(B.P. Cell), MHADA and get it conformed, if anything wrong, refer back to this Department and actual width of Road in layout shall be scrutinized.
6. As this dept. is issuing N.O.C. as per request from Mr. Jigar Nagda, Licensed Surveyor & plans are directly submitted to this department but not scrutinized by your department prior to submission. One copy of N.O.C. forwarded to you as competent authority for further approval & one copy to Mr. Jigar Nagda, Licensed Surveyor but after your approval this department shall be intimated that whatever action is taken in this regards i.e. approval /rejection/ pending shall be intimated to this department with remarks. If no intimation is received to this department then it will be considered as authority is not willing to intimate this department. No any deviation is allowed by this department.
7. This N.O.C. is subject to approval & verification of concerned authority of E.E.(B.P. Cell), MHADA till then further process shall not be permitted.

8. The plans are signed only from Fire Safety Point of view. No any violation, deviation, contravention, irregularities etc. are approved by this department.
9. The NOC for Occupation Certificate shall be granted only after the 12.00 mtrs. wide Layout road at North, East & West side of the building is fully developed on site.
10. This N.O.C is issued from Fire Safety Point of view only.

*Belkarnumy*  
*30/7/2020*

Dy. Chief Fire Officer  
Mumbai Fire Brigade.

*Prasad*  
*30*  
*30/07/2020*