THANE MUNICIPAL CORPORATION
FIRE BRIGADE THANE

No. TMC/CFO/M/HRC/08108
Date : 22/05/2019

SUB: NOC stipulating fire protection & fire fighting requirements for **Amendment** of proposed development of high rise residential Building No. 5 (Eucalyptia) & building no. 6(Fennelia) on Plot bearing G. No. 61/1/1, 2,3,4,61/2/1, 2, 3 of Village Chitalsar, Manpada, Tal. & Dist. Thane for M/s. Acme Housing India Pvt. Ltd.

REF: i) V.P. No. 88/142
ii) Letter dt. 02/05/2019 from M/s. Scapes Architect
iii) Initial NOC No. TMC/CFO/M/2608/114 Dt. 27/12/2013
iv)Amended permission No. TMC/TDD/97, Dt. 07/08/2013 (up to 22nd floor)
v) Date of inspection by STO Mr. M. U. Mulla on dt. 03/05/2019

A.D.T.P. (TMC) Thane

In this case please refer to this office N.O.C. issued vide Initial NOC No. TMC/CFO/M/2608/114 Dt. 27/12/2013 for Building No. 5 & 6 having 3 level Podium + Stilt + 27th Floors with a total height of 91.80 M. from general ground level up to terrace level. Amended permission was issued wide TMC/TDD/97, Dt. 07/08/2013 (CC issued for Bldg. No. 5 from Stilt + 22nd floor & Bldg. No. 6 from Gr(pt)/stilt + 22nd floor)

Now, Architect has submitted the amended plan & proposed the following amendments.

- Architect has added 02 level basements & 09 nos. of floor for Building No. 5 (Eucalyptia) Now Building No. 5 (Eucalyptia) having 2 level basement + 3 level podium + Stilt + 1st to 19th floor + Fire Check Floor + 20th to 36th (pt) floor with total height of 121.77 Mt. from general ground level up to terrace level.

- Architect has added 02 level basements & 09 nos. of floor for Building No. 6 (Fennelia) Now Building No. 6 (Fennelia) having 2 level basement + Ground (pt.)/ 1st level podium (pt.) + Mezzanine (pt) / 2nd level podium (pt) + 3rd level podium + Stilt + 1st to 19th floor + Fire Check Floor + 20th to 36th floor with total height of 121.77 Mt. from general ground level up to terrace level.

THE FLOOR-WISE USER OF THE BUILDING No. 5 (Eucalyptia)

Floors	Users
Basement 2	Parking
Basement 1	Parking
3 level podium	Parking
Stilt	Parking, Meter room, Society Office, CCTV room
1st floor	05 nos. of Residential Flats
2nd to 4th, 6th to 9th, 11th to 14th, 16th to 19th, 21st to 24th, 26th to 29th, 31st to 34th floor	07 nos. of Residential Flats on each floor

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5th, 10th, 15th, 20th, 25th, 30th & 35th	06 nos. of Residential flats on each floor & Refuge area
Fire check floor Between 19th & 20th floor	Fire check Floor with Break Pressure Tank (30,000 liters)
36th floor	06 nos. of Residential Flats on each floor

THE FLOOR-WISE USER OF THE BUILDING No. 6 (Fennelia)

Floors	Users
Basement 2	Parking
Basement 1	Parking, store
Ground (pt.)/ 1st level podium (pt.)	06 Nos. Shops, Meter room for shop, Parking
1st level Podium (pt)	06 Nos. Shops, Parking
Mezzanine (pt) / 2nd level podium (pt)	Parking, 06 Nos. Shops
3rd level podium	Parking
Stilt	Parking, Society Office, Meter room, CCTV room & Fitness center
1st floor	05 nos. of Residential Flats
2nd to 4th, 6th to 9th, 11th to 14th, 16th to 19th, 21st to 24th, 26th to 29th, 31st to 34th floor	07 nos. of Residential Flats on each floor
5th, 10th, 15th, 20th, 25th, 30th & 35th	06 nos. of Residential flats on each floor & Refuge area
Fire check floor Between 19th & 20th floor	Fire check Floor with Break Pressure Tank (30,000 liters)
36th floor	06 nos. of Residential Flats on each floor

THE DETAILS OF STAIRCASES & LIFTS

Building No.	Staircase description	Width of staircase	Nos. of staircase
5 (Eucalyptia) & 6 (Fennelia)	Leading from Basement 2 to terrace	1.52 m. wide	01 No. for each building
	Leading from Basement 2 to terrace	2.00 m. wide	01 No. for each building

Building No.	Lifts Type	Profile	Nos. of lifts
5 (Eucalyptia) & 6 (Fennelia)	Passenger lift	Leading from Basement 2 to terrace	02 No. for each building
	Fire lift	Leading from Basement 2 to terrace	01 No. for each building
	Service lift	Leading from Basement 2 to terrace	01 No. for each building
	Evacuation lift	Leading from Ground Floor to terrace	01 No. for each building

The proposed staircases having flight width of 1.50 M. & 2.00 M. as shown in plans are enclosed type and are externally located & adequately ventilated to outside air above ground level. One of the lift from each lift bank of each building will be converted into Fire lift. The lift

lobby & common corridor at each floor level is directly ventilated to outside air as shown on the plan.

THE DETAILS OF RAMPS

Building No.	Ramp description	Width of Ramp	Nos. of Ramp
5 (Eucalyptia), 6 (Fennelia)	Leading from Ground to 2nd podium level	9.0 m. to 10.5 m. wide with 16.50 mt. turning circle, upto first level more than 6.0 M. height for fire engine movement & then after 6.0 M. open to sky	01 Nos.
5 (Eucalyptia), 6 (Fennelia)	Leading from basement 2 to Ground floor	6.0 M wide for car parking	02 Nos.

REFUGE AREA :

Sr. No.	Building No.	Floor	Required Area (In Sq.M.)	Provided Area (In Sq.M.)	At the height from ground level (In M.)
1.	**5 (Eucalyptia)**	5th	81.72	81.87	26.47
		10th	81.72	81.87	40.97
		15th	81.72	81.87	55.47
		20th	81.72	81.87	72.47
		25th	81.72	81.87	86.97
		30th	81.72	81.87	101.47
		35th	81.72	81.87	115.97
In addition to that terrace of building will be treated as refuge area. Between 19th & 20th Floor at height of 69.97 Mt. from Ground level with 1.8 M height below beam bottom and break pressure tank with 30,000 liter capacity will be treated as Fire Check Floor. Whether to calculate excess Refuge area and Fire Check Floor in FSI or not shall be decided by A.D.T.P.					

Sr. No.	Building No.	Floor	Required Area (In Sq.M.)	Provided Area (In Sq.M.)	At the height from ground level (In M.)
1.	**6 (Fennelia)**	5th	82.52	83.22	26.47
		10th	82.52	83.22	40.97
		15th	82.52	83.22	55.47
		20th	82.52	83.22	72.47
		25th	82.52	83.22	86.97
		30th	82.52	83.22	101.47
		35th	82.52	83.22	115.97
In addition to that terrace of building will be treated as refuge area. Between 19th & 20th Floor at height of 69.97 Mt. from Ground level with 1.8 M height below beam bottom and break pressure tank with 30,000 liter capacity will be treated as Fire Check Floor. Whether to calculate excess Refuge area and Fire Check Floor in FSI or not shall be decided by A.D.T.P.					

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The A.D.T.P. is requested to scrutinized the plans as per DCR & verify civil work and all other requirements pertaining to civil Engineering side including open spaces, R.G.s, corridors, staircases, amendments, height, refuge area in sq.m. & floor occupancy of the building. If any changes in the plans other than mentioned above then A.D.T.P. shall refer back the proposal to this department for revised NOC till then further process shall not be permitted.

THE OPEN SPACES :

Plot is approachable by 20.00 M. wide Existing DP road from north side.

Building No.	North	South	East	West
5 (Eucalyptia)	Attached to Bldg. No. 6	24.13 M on top of the podium	17.46 M on top of the podium	13.27 M on top of the podium
6 (Fennelia)	5.00 m at ground + 20.00 M wide Existing DP road	Attached to Bldg. no. 5	13.12 M on top of the podium	12.23 M on Ground

The proposal has been considered favorably in view of the fact that;

i) There shall be no tree/canopy/arch/car parking to be located in compulsory open spaces. No compound wall shall be constructed on all road side & joint open spaces all around the building where open spaces is less than 12.00 M.

ii) Plot is approachable by 20.00 M. wide Existing DP road from north side

iii) Architect has proposed operational area for firefighting at top of the stilt level. Hence, entire 12.00 M. open space on top of the stilt & ramp shall be paved, suitably to bear the load of fire engines having 68 ton load with point load of 10 kgs./sq. cms.

iv) Controlled Lowering Device for evacuation or External Evacuation System as approved by CFO shall be provided.

v) Automatic sprinkler system shall be provided in entire lift lobby, common corridor of each floor level and each habitable room of each flat of each floor level of the each building; entire all level podium, surface car parking area in such a way to cover each car parking of entire all level podium floor as per the standards lay down by TAC or relevant IS specification.

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

vii) Break pressure tank of 30,000 litres capacity with 900 LPM booster pump shall be provided in each fire check floor of building.

viii) Main Pump and Jockey pump should not be less than 300 Hp.

ix) Automatic smoke detection system shall be provided in lift lobby & common corridor at each floor level, electric meter room & each lift machine room, Control / BMS Room and in electric shaft at every floor level with response indicator.

x) If built up area 10 Lakh sq.ft or more than that in single building or in group, proponent should hand over one Water Brouser cum High Rise Building fire Fighting vehicle free of cost to Fire Brigade Department. Hence one vehicle to be provided as per specification with following equipments :- 1. Light mast 2. Trust type ladder 3. Hook ladder 4. Hose 5. Suction hose 5. B.A.Set 6. Hydraulic cutting tools 7. Wood Cutters (petrol) 8. Fire Extinguishers 9.Various branches 10.Water tower monitor etc. Water Brouser cum High Rise Building fire Fighting vehicle before applying for NOC to O.C. And copy of the work order should be submitted within a week after approval of HRC.

xi) During construction stage and before the final occupation party agreed to comply additional requirement stipulated by Thane Fire Brigade Officer.

xii) If any discrepancies observed about the DCR during construction Thane Fire Brigade officer may changed the requirement as the rules.

In view of above, as far as this department is concerned there is no objection from Fire safety point of view for the construction of high rise **Now,** Building No. 5 (Eucalyptia) having 2 level basement + 3 level podium + Stilt + 1st to 19th floor + Fire Check Floor + 20th to 36th (pt) floor with total height of 121.77 Mt. from general ground level up to terrace level, Building No. 6 (Fennelia) having 2 level basement + Ground (pt.)/ 1st level podium (pt.) + Mezzanine (pt) / 2nd level podium (pt) + 3rd level podium + Stilt + 1st to 19th floor + Fire Check Floor + 20th to 36th floor with total height of 121.77 Mt. from general ground level up to terrace level. As per details shown on enclosed plans; signed in taken of approval, subject to satisfactory compliance of the following requirements.

All the fire safety measures stipulated earlier vide Initial NOC No. TMC/CFO/M/2608/114 Dt. 27/12/2013 shall be strictly adhered to along with the following additional fire safety requirements.

1. ACCESS:

i) All access & fire tender access should be free of encumbrances.

ii) Courtyards shall be flushed with the road levels.

iii) Entrance gate provided shall be of not less than 6.00 meters width each shall be provided, at locations marked on the plan. Archways, if any over the entrance gates, shall have height clearance of not less than 6.00 mtrs.

2. PROTECTION TO STRUCTURAL STEEL:

i) 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 residential building.

ii) 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.

3. OPEN SPACES (AND PODIUM, RAMP IF PROVIDED) :

i) The provided open space on all the sides of the building shall be paved, suitably to bear the load of fire engines having 68 ton load with point load of 10 kgs./sq. cms.

ii) All the open spaces shall be in one plane and mandatory open space shall be clear of any obstructions including tree.

iii) The open spaces shall be kept free from obstruction at all times.

4. STAIRCASE:

i) The flight width of staircases shall be maintained as shown in the enclosed plans.

ii) The layout of staircases shall be 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 placed in the enclosed wall of the staircase.

iii) Externally located staircases and lobbies adequately ventilated to outside air.

iv) Permanent vent at the top equal to 5% of the cross sectional area of the staircase shall be provided.

v) Open able sashes or R.C.C. grills with clear opening of not less than 0.5 sq.m. per landing on the external wall of the staircase shall be provided.

vi) No combustible material shall be kept or stored in staircase / passage and shall be kept unobstructed all time.

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TERRACE STAIRCASE:

The terrace door shall be provided in following manners:

a. The top of portion of the door 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 meter.

c. The glass front of 6 inch dia. with the breakable glass shall be provided just above the single latch lock, as to open the latch in emergency.

d. The door shall either be fitted with magnetic lock or shall be synchronize with fire detection and alarm system.

5. CORRIDOR / LIFT LOBBY :

i) Corridor / lift lobby at each floor level shall be naturally ventilated as shown in plan.

ii) The common corridor / lift lobby at each floor level shall be kept free from obstructions at all times.

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

iv) Portable lights / insta lights shall be provided at strategic locations in the staircase and lift lobby.

6. PRESSURIZATION OF LIFT LOBBIES :

The lift lobbies shall be provided with pressurized system as per mentioned in this NOC.

7. STAIRCASE AND CORRIDOR LIGHTINGS:

i) 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.

ii) Staircase and corridor lighting shall also be connected to alternate supply.
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.

iii) Emergency lights shall be provided in the staircases/corridors.

8. FLAT/ KITCHEN ENTRANCE & EXIT / ENTRANCE STAIRCASE:

i) Flat entrance and kitchen doors shall be of solid core having fire resistance of not less than one hour (solid wood of 45 mm thickness.)

ii) The fire resistance rating for staircase F.R.D., Lift lobby / protected lobby & the lift doors as per N.B.C. provisions.

9. ELECTRIC CABLE SHAFTS, ALL SHAFTS, SERVICES & METER ROOM:

i) Electric cable shafts shall be exclusively used for electric cables and should not open in staircase enclosure.

ii) Inspection doors for shafts at the each floor level shall have two hours fire resistance.

iii) Electric shafts and each shaft 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.

iv) 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.

v) Electric meter room shall be provided at the location shown in the plan. It shall be adequately ventilated & easily accessible.

vi) Low and medium voltage wiring running in shaft and in false ceiling should run in separate conduits;

Vii) 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.

viii) Preferably bus bar system shall be installed from ground to all upper floors main supply.

ix) Separate circuits for firefighting pumps, lifts, staircases and corridor lighting and blowers for pressurizing system 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.

x) Automatic smoke detector system shall be provided in each electric shaft on each floor along with response indicator which shall be connected to main consol panel board on ground floor level and each floor level.

xi) Master switches controlling essential service circuits shall be clearly labeled and shall be placed at control room on ground floor.

10. 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.

11. 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.

12. LIFTS:-

A. PASSENGER LIFT :-

i) Walls enclosing lift shaft shall have a fire resistance of not less than two hour.

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 two hours fire resistance glass (as per VidhanParishad Resolution No. 135). No collapsible shutter shall be permitted.

iv) Fire lift shown in the plan 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.

vi) All lifts well shall be pressurized including fire lift.

B. FIRE LIFT :-

i) Walls enclosing lift shafts shall have two hours fire resistance.

ii) The shafts shall have permanent vent equal 0.2 sq.m. clear area under the Lift Machine room.

iii) Landing doors and lift car doors of the lifts shall be of two hours fire resistance glass (as per Vidhan Parishad Resolution No. 135). No collapsible shutter shall be permitted.

iv) To enable fire services personnel to reach the upper floor with the minimum delay, one fire lift shall be provided and shall be available for the exclusive use of the firemen in an emergency and the directly accessible to every dwelling of each floor.

v) The lift shall have a floor area of not less than 1.4 sq. m. with a minimum dimension of 1.12 m. It shall have loading capacity of not less than 545 k.g. (8 persons lift) with automatic closing doors.

vi) There shall be an alternate electric supply of an adequate capacity apart from the normal electric supply the building and the cables run in a route safe from fire, i.e. within the lift shaft. In case of failure normal electric supply, it shall automatically trip over to alternate supply.

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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 priority control device. When the switch is off, the lift will return to normal working. This lift can be used by the occupants in normal times.

viii) The words 'Fire lift' shall be conspicuously displayed in florescent paint on the lift landing door at each floor level & Threshold of noncombustible material shall be provided at the entrance of each landing door.

ix) Except Service Lifts, other lifts shall be converted into Fire Lifts conforming to relevant regulations.

13. FIRE EVACUATION LIFT TO BE PROVIDED :-

1) "Fire Evacuation Lift" other than regular passenger lifts and fire lift/s. The requirement of "Fire Evacuation Lift" shall be decided on the basis of travel distance in line with requirement of number of staircases as per prevailing D.C.R./N.B.C.
2) Capacity of "Fire Evacuation Lift" shall be of 800 to 1000 kg/8-15 persons and it shall be terminated on ground floor or podium where facility of the assembly of evacuation available in case of emergency and shall not commute to the Basement.
3) "Fire Evacuation Lift" core (Lift shaft) shall have minimum internal clear space of 2.0 sq. meter OR as per above mentioned weight carrying capacity.
4) "Fire Evacuation Lift" shall be housed in a separate core having smoke check lobby with opening on each floor shall be adjacent to one of the enclosed staircase and required access to the staircase on each landing through fire resistance door of 2 hrs. rating. (If building is constructed as per previous approval and not possible to give on mid-landing).
5) For the new buildings Fire evacuation lift shall be provided on every mid-landing of one of the enclosed staircase of the building and the said staircase shall be protected with smoke check lobby by means of Fire resistance door/Fire curtain/Fire resistance Glass having 2 hrs fire resistance. (for all new proposal).
6) The "Fire Evacuation Lift" along with the enclosed staircase shall be marked as "Fire Escape Lift/Staircase" at each landing door terminating to the lobby.
7) All the requirements pertaining to civil and electrical aspects mentioned in National Building Code for "Fire Lift" shall be applicable for "Fire Evacuation Lift". In addition to that following fire safety measures shall be incorporated.
8) "Fire Evacuation Lift" car doors and Landing doors shall have at least two hours fire resistance and shall have provision of Glass vision for both doors of minimum 1 feet x 2 feet and the glass should also have two hours fire resistance.
9) Landing door on each floor shall have provision to open manually by using key. This key shall be placed in breakable safety glass case located at 7 feet from floor level.
10) Two way communication systems shall be provided in "Fire Evacuation Lift" car as well as at every landing level including ground floor lobby with following features.
    i. Calling floor number shall appear on display inside lift cabin to the operator.
    ii. Lift present floor level shall appear on calling floor panel to the caller.
    iii. Additional operating console shall be provided at bottommost landing. This operating console shall have display showing calling floor number, lift present floor level and voice communication control to all floor.
11) For operation of "Fire Evacuation Lift" wired remote shall be provided inside of the lift cabin for regular operation and second wireless remote shall be provided inside the cabin as a standby.
12) Bund wall of 150mm (6 inches) shall be provided at every landing door opening to

avoid water logging.

13) "Fire Evacuation Lift" car shall have emergency operation switch which will be only operated by Fire Brigade personnel. On actuation of this switch, the "Fire Evacuation Lift" will only 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 Podium floor lobby.
14) The backup electric supply shall be provided with UPS and it should be online supported by another regular and alternate emergency supply.
15) All the electric cables shall be fire retardant with low smoke hazard complying relevant BIS standards.
16) "Fire Evacuation Lift" car shall be made of non-combustible material including interior having minimum 2 hrs. fire resistance.
17) Lift maintenance shall be carried out only by Manufacturing / Installation Company.
18) "Fire Evacuation Lift" shall have independent wiring at outside of dead wall of Building and have independent circuit to Podium floor / Stilt Floor
19) The separate switch (125 AMP or capacity to run) for the "Fire Evacuation Lift" shall be provided at ground floor.
20) "Fire Evacuation Lift" shall have mass SMS messaging system to alert occupants on each floor of building and nearest fire brigade station in fire emergency condition.
21) Separate alternate source of electricity i.e. D.G.Set shall be provided for the "Fire Evacuation Lift" as well as arrangement shall be made to connect the "Fire Evacuation Lift" to the Generator of Fire Vehicle.
22) Lift Machine Room shall be provided at Ground level between the ground floor and 1st floor or lift machine room can be alternatively provided between top of the podium floor and above floor.
23) Third party inspection shall be done and accordingly certificate shall be submitted.

14. <u>BASEMENT</u>

i) Basement shall be adequately ventilated. Vents with cross, sectional area (Aggregate) not less than 2.5 percent of the floor area spread evenly around the perimeter of the basement shall be provided in the form of grills or breakable stall boards lights or pavement lights or by way of shafts. Alternatively, a system of air inlets shall be provided at basement floor level and smoke outlets at basement ceiling level. Inlets and outlets may be terminated at ground level with stall boards or pavement lights as before but ducts to convey fresh air to the basement floor level shall have to be laid. Stall boards and pavement lights should be in position easily accessible to the fire Brigade personal and rescue teams and clearly marked 'SMOKE OUTLET' or 'AIR INLET' with an indication of area served at or near the opening.

ii) The basement shall be used for designated purpose only as shown in the plan.

iii) The basement shall be provided with natural ventilations through the ventilators, open cut outs as shown in the plan.

iv) The staircase of the basement shall be of enclosed type and entry to basement areas shall be through two hours fire resistance self-closing door provided in the enclosed wall of the staircase .

v) The ducts of the mechanical ventilations system shall be of substantial metal gauge as per the relevant I.S. standard.

vi) The operating switches of the mechanical ventilation shall be located in the fire control room with appropriate zonal indications.

vii) Exhaust duct shall be provided to draw out exhaust at ground level of the basement.

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viii) Suitable signages shall be provided in the basement showing exit direction, way to exits etc.

ix) Automatic sprinkler system shall be provided in entire basement & water spray projector system/double line sprinkler system shall be provided in stack car parking area. These systems shall be installed as per the standard laid down by T.A.C. and relevant I.S. specifications

x) Smoke check lobby, Staircases, common passages & escape routes of the entire building shall be painted with fire retardant paint.

xi) One Dry Chemical Powder fire extinguisher ABC type of 06 kgs. capacity each shall be kept for every 100 sq. mtrs. area in each basement.

xii) Staircase and lift lobby shall have illuminated by inverter operated exits signs with IP 54 enclosure. Luminance of the signages shall be such that they are visible from a distance of 12 to 16 meters.

xiii) The staircase of the basement & the associated lift lobbies shall be pressurized in the event of fire. The pressure in this enclosed staircase and enclosed lift lobbies shall be maintained not less than 5m.m. W.G. & 2.5 mm W.G. for lift lobbies.

xiv) CO Detector with audible alarm system shall be provided to all the basement areas and the circuit of the same shall be given / connected to mechanical ventilation system to start automatically on actuation of CO detector and the other detectors provided in the basement.

xv) Ventilation system shall start automatically on actuation of detector provided in the basement area.

xvi) Exhaust duct, mechanical ventilation duct should not pass through exit or entry.

xvii) Basement area shall be divided in compartments as per NBC regulations.

xviii) The ventilation and area of ventilation and compartmentation if required shall be checked by ADTP.

xix) The interconnectivity between (exit / entrance) between two compartments shall be protected by fire curtain having two hours fire resistance.

15. FIRE FIGHTING REQUIREMENTS :

A) UNDERGROUND WATER STORAGE TANKS :(for Building No. 5, 6)

An common underground water storage tank of 7,50,000 liters capacity for the Building No. 5 (Eucalyptia) & 6 (Fennelia) shall be provided as per design specified in the rules with baffle wall and fire brigade collecting breaching. The layout of which shall be got approved from Water department prior to erection. The tanks shall be connected to sprinkler system.

B) OVERHEAD WATER STORAGE TANK :(Separate for Each Building)

A tank of 30,000 liters capacity shall be provided on each staircase shaft at the terrace level of the building. The tank shall be connected to the wet riser through a booster pump through a non return valve and gate valve. And Break pressure tank of 30,000 liters capacity with 900 LPM booster pump shall be provided in a fire check floor at 69.97 Mt.

C) WET RISER CUM DOWN COMER:(Separate for Each Building)

Wet riser cum down comer of internal dia. of 15 cms. of G.I. 'C' Class pipe shall be provided in the duct adjoining each staircase with double hydrant outlet & hose reel at each floor in such a way as not to reduce the width of the common corridor. Pressure reducing discs or orifices shall be provided at lower level, so as not to exceed the pressure of 5.5 kgs. per sq. cms. The wet risers shall be extended from ground floor up to terrace level. Wet riser outlet and hose reel at a distance of 100 ft. shall be provided on periphery of all R.G. / parking floors. Wet riser extended from lower basement to terrace/top floor level.

D) **FIRE SERVICE INLET :**

i) 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 to (a) The wet riser (b) Sprinkler system & (c) drencher system.

ii) Breeching connection inlet shall be provided to refill U.G. tank.

iii) Operating switches of fire pumps shall be also provided in glass fronted boxes at ground floor.

E) **AUTOMATIC SPRINKLERS SYSTEM :(Separate for Each Building)**

Automatic sprinkler system shall be provided in entire building including lift lobby, common corridor at each floor level of building and each habitable room of each flat on each floor level of each building, fitness canter entire surface car parking area of entire parking, podium n such a way to cover each car parking at Stilt /parking. As per the standards lay down by TAC or relevant IS specification.

F) **DRENCHER SYSTEM:(Separate for Each Building)**

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

G) **AUTOMATIC SMOKE DETECTION SYSTEM :**

Automatic smoke detection system shall be provided in lift lobby & common corridor at each floor level of each building, each electric meter room & each lift machine room, Control / BMS Room and in electric shaft at every floor level with response indicator; same should be connected to main console panel on ground floor level in BMS Room, as per IS specification.

H) **HEATRISE DETECTORS :**

Heat rise detectors system shall be installed in the hot areas i.e. kitchen etc. and same shall be connected to main console at ground floor level.

I-1) **FIRE PUMP, BOOSTER PUMP, SPRINKLER PUMP AND JOCKEY PUMP :**
(Separate for Each Building)

i) Wet-riser cum down comer shall be connected to a fire pump at ground level of capacity of not less than 3200 liters/min. capable of giving a pressure of not less than 3.2 kgs/ sq. cms. at the top most hydrant.

(ii) 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 fire check floor of immediate after 70 M. and 140 M.

(iii) 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.

(iv) Main Pump and Jockey pump should not be less than 300 Hp.

(iv) Sprinkler pump of suitable capacity along with jockey pump shall be provided for automatic sprinkler system.

(v) Electric supply (normal) to these pumps shall be independent circuit.

(vi) Separate jockey pump shall be provided to Wet riser system to keep system pressurized.

(vii) Operating switches for booster pumps shall be also provided in glass fronted boxes in lift lobbies on each floor at prominent place.

(viii) Operating switches of fire pumps shall be also provided in glass fronted boxes at ground floor.

(ix) All above pumps should be surface mounted or vertical turbine type (submersible pump not permitted) pump along with adequate size of pump room.

I-2) **STAND BY PUMP: (Separate for Each Building)**
Set of standing pump shall be provided as per mentioned in this NOC.

J) **EXTERNAL HYDRANTS.**
Courtyard hydrants shall be provided at distance of 30.00 mtrs each within the confines of the site of the wet riser-cum-down comer. Hose box with two non-percolating ISI marked hoses (length not less than 15 mtrs) & branch shall be equally distributed on ground floor, R.G. floor, as well as on each floor of each wing near the wet riser outlet.

K) **ALTERNATE SOURCE OF POWER SUPPLY. (Separate for Each Building)**
An alternate source of LV/HV supply from a separate substation as well as from a diesel generator with Auto/Manual changeover over switch shall be provided for fire pumps, booster pump, sprinkler pump, jockey pump, staircase and corridor lighting circuits and fire alarm system, detection system, public address system, voice evacuation system etc. It shall be housed in separate cabin.

L) **PORTABLE FIRE EXTINGUISHERS :**

(i) One dry chemical powder type fire extinguisher of 09 kgs. capacity having I.S.I. certification mark and two sand buckets filled with dry cleaned sand shall be kept in each electric meter room as well as in each lift machine room.
(ii) One dry chemical powder type fire extinguisher of 06 kgs. capacity having I.S.I. certification mark shall be kept on each floor level at prominent place & refuge area
(iii) All above fire extinguishers should be placed on each floor level as per IS:2190 of 1992.

M) **FIRE ALARM SYSTEM / FIRE DETECTION SYSTEM :**

a) Building No. 5 (Eucalyptia) & 6(Fennelia) 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) Building No. 5 (Eucalyptia) & 6(Fennelia) 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.
d) Access control system, close circuit cameras shall be installed in the entire building & connected at the control room.
e) Trained security staff & fire staff shall be posted on duty at strategic location around the clock.
f) Security / fire staff shall be trained in evacuation procedure & use of fire fighting equipment.
g) The entire building floors shall be provided with proper standard signage.

N) **CONTROLLED LOWERING DEVICE**
Controlled Lowering Device for evacuation or External Evacuation System shall confirm the relevant NFPA Codes and certified by U.L. and as approved by CFO shall be provided.

O) **FIRE OFFICER:**
A qualified fire officer, with minimum qualification of either B.E. (fire) or Advanced diploma in Divisional officer's course from National Fire Service College or its equivalent and having at least 3 years working experience in a regular a Metropolitan Fire Service shall be appointed on

full time basis for looking after the fire prevention, evacuation, escapes, repairs, drills, maintenance and upkeep of fire protection and firefighting equipment, as also to train the security staff and selected persons using the premises.
The qualified officer as mentioned above shall be appointed simultaneously with the occupation of the premises and the selection of the officer shall be made in consultation with the Chief Fire Officer, Thane Fire Brigade.

P) PUBLIC ADDRESS SYSTEM :
The entire building shall be provided with public address system as per the rules with main control operator at console panel at Podium floor area.

Q) BUILDING MANAGEMENT SYSTEM:
i)The entire building should be provided with intelligent, properly designed / programmed building management system having its main control at near reception on Podium floor.
ii)Addressable wireless stand alone system with connectivity to nearby fire station shall be provided.

R) FIRE DRILLS / EVACUATION DRILLS:
Fire Drills and evacuation drills shall be conducted regularly in consultation with Thane Fire Brigade and log of the same shall be maintained.

S) SIGNAGES:
Self glowing/fluorescent exit signs in green color shall be provided showing the means of escape for each building.

T) 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.

U) BREATHING APPARATUS SETS:
Two Self-contained Compressed Air Breathing Apparatus sets of 45 minutes duration each shall be kept in the fire control room & refuge area.

V) INTEGRATED SYSTEM:
The entire firefighting 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.

W) DETECTOR SYSTEM:
L.P.G. / P.N.G. detector system shall be installed in kitchen area of each building.

X) Fire Check Floor:
A high rise building having height more than 70 m, shall be provided with fire check floor (entire floor) at every 70 m level. Height of the fire check floor shall not be more than 1.8 mts.(below beam bottom)The fire check floor shall not be used for any 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. Periphery of the Fire Check floor shall not be enclosed. Fire Drenchers shall be provided at the periphery of the each fire check floor.

Y) Sub-STATION / swimming pool/ club house:
swimming Pool should be open to sky and a separate No Objection Certificate shall be obtained from this department for the swimming pool / Sub Station/club house.

Z) REFUGE AREA:
Refuge area shall be conforming to the following requirements:

i) Manner of refuge area

a) The refuge area shall be so located that it shall preferably face the access road/s or otherwise 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 / parapet of 1.20 mtrs.
c) The cantilevered refuge area shall necessarily be of RCC Type. If approved earlier.
d) R.C.C. covering shall be provided above the cantilever refuge area. If approved earlier.
e) The refuge area shall have a door which shall be painted or fixed with a sign in luminous paint mentioning "REFUGE AREA"
f) The lift/s shall not be permitted to open into the refuge areas.

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.

iv) To allow or to count excess refuge area in FSI shall be discretion of Building Proposal Department. This department is not responsible for providing excess refuge area.

v) Terrace floor as a refuge floor:

a. The necessary facilities such as emergency lighting, drinking water etc. 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 "REFUGE AREA".

Building no. 5 (Eucalyptia) - Basement 2 + Basement 1 + 3 level podium + 1st to 19th floor + Fire Check Floor + 20th to 36th floor with total height of 121.77 Mt. from general ground level up to terrace level.

Floors	B/U Area	Floor Ht. (Mt.)	Rate per sq.mt.	Fire Charges Total Area x Rs.	Total Amt.
Ground floor	**0.00**	**3.77**			
1st level parking	**0.00**	**3.20**			
2nd level parking	**0.00**	**3.05**			
Stilt level parking	**0.00**	**4.85**			
1st flr.	293.30	2.90	Rs. 300/-	1110.34 x Rs. 300/- = Rs. 3,33,102/-	Fire premium = Rs. 3,33,102/-
2nd flr.	408.52	2.90			

3rd flr.	408.52	2.90			
Total	**1110.34**	**23.57**			**Rs. 3,33,102/-**
4th flr.	408.52	2.90	Rs. 600/-	8702.89 x Rs. 600/- = Rs.52,21,734/-	Fire infrastructure = **Rs. 52,21,734/-**
5th flr. – Ref.	351.61	2.90			
6th flr.	408.52	2.90			
7th flr.	408.52	2.90			
8th flr.	408.52	2.90			
9th flr.	408.52	2.90			
10th flr. – Ref.	351.61	2.90			
11th flr.	408.52	2.90			
12th flr.	408.52	2.90			
13th flr.	408.52	2.90			
14th flr.	408.52	2.90			
15th flr. – Ref.	351.61	2.90			
16th flr.	408.52	2.90			
17th flr.	408.52	2.90			
18th flr.	408.52	2.90			
19th flr.	408.52	2.90			
Fire Check floor	-	2.50			
20th flr. - Ref.	351.61	2.90			
21st flr.	408.52	2.90			
22nd flr.	408.52	2.90			
23rd flr.	408.52	2.90			
24th flr.	408.52	2.90			
25th flr. – Ref.	351.61	2.90			
Total	**8705.89**	**89.87**			**Rs. 52,23,534/-**
26th flr.	408.52	2.90	Rs. 1000/-	4322.99 x Rs. 1000/- = Rs. 43,22,990/-	Fire infrastructure = **Rs. 43,22,990/-**
27th flr.	408.52	2.90			
28th flr.	408.52	2.90			
29th flr.	408.52	2.90			
30th flr.	351.61	2.90			
31st flr.	408.52	2.90			
32nd flr.	408.52	2.90			
33rd flr.	408.52	2.90			
34th flr.	408.52	2.90			
35th flr.	351.61	2.90			
36th flr.	351.61	2.90			
Total	**4322.99**	**31.90**			**Rs. 43,22,990/-**
Total	**14136.22**	**121.77**			Fire infrastructure = **Rs. 95,46,524/-**

Already paid Charges

Bldg. no.		Receipt no.	Amt. (Rs.)
Bldg. 5 (Eucalyptia)	Fire Premium	TMC/FIR/HQ/001020/2013Dt. 04/12/2013	8,10,420/-
	Fire Infrastructure	TMC/FIR/HQ/001019/2013Dt.04/12/2013	34,03,260/-

Charges to be paid

Bldg. no.	Head	Area in sq.mt.	Previous paid amt.	Current Amt.	Difference Amt. (Rs.)
Bldg. 5 (Eucalyptia)	Fire Premium	1110.34	8,10,420/-	3,33,102/-	**NIL** (Excess paid amt. 4,77,318/-)
	Fire Infrastructure	13028.88	34,03,260/-	95,46,524/-	**Rs. 61,43,264/-** TMC/HQ/FIR/000127/19-20, Dt. 07/05/2019

Fire Service Fee	
3,47,863/-	TMC/HQ/FIR/000126/19-20, Dt. 07/05/2019

Bldg. no. 6 (Fennelia) - Basement 2 + Basement 1 + 3 level podium + 1st to 19th floor + Fire Check Floor + 20th to 36th floor with total height of 121.77 Mt. from general ground level up to terrace level.

Floors	B/U Area	Floor Ht.	Rate per sq.mt.	Fire Charges Total Area x Rs.	Total Amt.
Ground floor	**0.00**	**3.77**			
1st level parking	**0.00**	**3.20**			
2nd level parking	**0.00**	**3.05**			
Stilt level parking	**0.00**	**4.85**			
1st flr.	296.41	2.90	Rs. 300/-	1121.65 x Rs. 300/- = Rs. 3,36,495/-	Fire premium = Rs. 3,36,495/-
2nd flr.	412.62	2.90			
3rd flr.	412.62	2.90			
Total	**1121.65**	**23.57**			**Rs. 3,36,495/-**
4th flr.	412.62	2.90	Rs. 600/-	8785.19 x Rs. 600/- = Rs.52,71,114/-	Fire infrastructure = **Rs. 52,71,114/-**
5th flr. – Ref.	354.13	2.90			
6th flr.	412.62	2.90			
7th flr.	412.62	2.90			
8th flr.	412.62	2.90			
9th flr.	412.62	2.90			
10th flr. – Ref.	354.13	2.90			
11th flr.	412.62	2.90			
12th flr.	412.62	2.90			
13th flr.	412.62	2.90			
14th flr.	412.62	2.90			
15th flr. – Ref.	354.62	2.90			
16th flr.	412.62	2.90			
17th flr.	412.62	2.90			
18th flr.	412.62	2.90			
19th flr.	412.62	2.90			
Fire Check floor		2.50			
20th flr. - Ref.	354.13	2.90			
21st flr.	412.62	2.90			
22nd flr.	412.62	2.90			
23rd flr.	412.62	2.90			
24th flr.	412.62	2.90			

25th flr. – Ref.	354.13	2.90			
Total	**8785.19**	**89.87**			**Rs. 52,71,114/-**
26th flr.	412.62	2.90	Rs. 1000/-	4363.35 x Rs. 1000/- = Rs. 43,63,350/-	Fire infrastructure = **Rs. 43,63,350/-**
27th flr.	412.62	2.90			
28th flr.	412.62	2.90			
29th flr.	412.62	2.90			
30th flr.	354.13	2.90			
31st flr.	412.62	2.90			
32nd flr.	412.62	2.90			
33rd flr.	412.62	2.90			
34th flr.	412.62	2.90			
35th flr.	354.13	2.90			
36th flr.	354.13	2.90			**Rs. 43,63,350/-**
Total	**4363.35**	**31.90**			
Total	**14270.19**	**121.77**			Total Fire infrastructure = **Rs. 96,34,464/-**

Already paid Charges

Bldg. no.		**Receipt no.**	**Amt. (Rs.)**
Bldg. no. 6 (Fennelia)	Fire Premium	TMC/FIR/HQ/001020/2013Dt. 04/12/2013	9,19,086/-
	Fire Infrastructure	TMC/FIR/HQ/001019/2013Dt.04/12/2013	38,48,031/-

Charges to be paid

Bldg. no.	**Head**	**Area in sq.mt.**	**Previous paid amt.**	**Current Amt.**	**Difference Amt. (Rs.)**
Bldg. no. 6 (Fennelia)	Fire Premium	1121.65	9,19,086/-	3,36,495/-	**NIL** (Excess paid amt. 5,82,591/-)
	Fire Infrastructure	13148.54	38,48,031/-	96,34,464/-	**Rs. 57,86,433/-** TMC/HQ/FIR/000128/19-20, Dt. 07/05/2019

Fire Service Fee	
2,68,910/-	TMC/HQ/FIR/000129/19-20, Dt. 07/05/2019

Below Fennelia - Basement + Ground + Mezzanine Commercial (Pt.) only (12.95 Ht.)

Floors	**B/U Area**	**Floor Ht.**	**Rate per sq.mt.**	**Fire Charges Total Area x Rs.**	**Total Amt.**
1st Basement	613.83	5.98	Rs. 160/-	**1180.98** x Rs. 160 = Rs. 1,89,916.80	Fire premium Rs. 1,89,916.80 Min. **Rs. 4,00,000/-**
Ground + Mezzanine floor	573.15	6.97			
Total	**1180.98**	**12.95**			**Rs. 4,00,000/-** TMC/HQ/FIR/000130/19-20, Dt. 07/05/2019

Architect has certified the area & accordingly paid the various fees, Architect has verified & submitted the table of area along with fees paid. If any differences in fee paid or any queries objected by the auditor then balance fees to be paid by the Licensed engineer / Developer or After payment of the said fees then only any amended NOC or final NOC for Occupation will be issued or recovered legally as per rules and Regulation. At the time of submission if any wrong or irregularity submitted and observed late on during construction, then above said NOC will be revoked by Chief Fire Officer, Thane.

Above mentioned built up area has been verified by Architect. However, The A.D.T.P.is requested to verify the total built-up area and inform this department, if the same is found to be more for the purpose of levying additional Scrutiny fees, if required.

Note:

1. The fire fighting installation shall be carried out by licensed approved agency.
2. The area calculation shown in the enclosed plan shall be checked by the A.D.T.P.
3. The A.D.T.P. is requested to scrutinized the plans as per DCR &verify civil work and all other requirements pertaining to civil Engineering side including open spaces, R.G., corridors, staircases, amendments, height, refuge area in sq. m. & floor occupancy of the building. And if these plans, given open space is not approvable then this NOC shall be refer back to this department for revised NOC also till then further process of issuing IOD & C.C. shall not be permitted.
4. This N.O.C. is issued from fire risk point of view only.
5. The schematic drawings/plans of Sprinkler system, smoke detection System, Rate of rise detection system, Wet riser system, Public Address system etc. and specification of Water Bowser cum High Rise Building fire Fighting vehicle are applicable and copy of the work order should be submitted within a week after approval of HRC & shall be got approved from CFO prior to installation.
6. Necessary permission for fitness center, shops as well as any licensable activity shall be obtained from concerned department & T.M.C. / C.F.O.'s department till then shall not be allowed to use.
7. During construction stage and prior to final occupation party agreed to comply with additional requirements stipulated by Thane Fire Brigade Officer if any in future.
8. There shall be no tree/car parking to be located in compulsory open spaces, No compound wall shall be constructed on all road side and joint open spaces all around the building.
9. The area, size is to be consulted as per relevant I.S. Standards and Codes with consultant for the sprinkler system, detection system, fire alarm system, wet riser system, public address system, electrical duct, etc. to be verified & examined.
10. If any discrepancies observed about the DCR during construction, then above said NOC will be revoked by chief Fire Officer.
11. **This NOC is subject to approval of H.R.C. & Hon. Municipal Commissioner Sir.**

Sd/-

Chief Fire Officer
Thane Fire Brigade

Copy To: 1. High rise Committee
2. M/s. Scapes Architect

Thane Municipal Corporation of the City of Thane * Fire Brigade Dept. *

Chief Fire Officer
Thane Fire Brigade