

THANE MUNICIPAL CORPORATION
FIRE BRIGADE THANE

No.: TMC/CFO/M/222/111
Date: 22/02/2017

SUB: NOC stipulating fire protection & fire fighting requirements for Amendment of proposed construction of high rise residential Building B at S. Nos. 170/1, Village Panchpakhadi, Thane.

REF: i) V.P. No. S03/0041/14
ii) Letter from Architect M/s. Saakaar Architects on dated 03/08/2016
iii) Initial NOC No. – TMC/CFO/M- 4331/188 dtd. 16/02/2015
iv) Amended NOC No. TMC/CFO/M- 320/4 dtd. 05/05/2015
v) Amended NOC No. TMC/CFO/M-1572/95 dtd. 20/08/2015
vi) Date of Inspection by Dy.CFO Mr. A.M.Raut on 18/02/2017

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

In this case please refer to this office N.O.C. issued vide Initial NOC No. Initial NOC No. – TMC/CFO/M- 4331/188 dtd. 16/02/2015 for Building – B having Stilt + Podium + 1st to 18th (pt) Floors with a total height of 59.95 mtrs., Amended NOC No. TMC/CFO/M- 320/4 dtd. 05/05/2015 for Building – B having Stilt + 1st to 9th + 10th (pt) Floors with a total height of 30.55 mtrs., Amended NOC No. TMC/CFO/M-1572/95 dtd. 20/08/2015 for Building 'B' having Stilt + 1st to 10th & 11th (pt) floors with a total height of 36.35 mtrs. from general ground level up to terrace level.

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

1. Architect has added 18 nos. floors in the Building 'B'. Now, the Building 'B' having Lower Ground + Ground + Podium + 29th Floors with a total height of 91.90 mtrs. from general ground level up to terrace level.
2. Two ramp of respectively 6.0 M wide and 9.0 M wide are proposed for the said building. Out of these two ramps 6.0 M wide ramp is travels from Top of podium to Ground to Lower ground and vise versa for the car parking and another ramp of 9.0 M wide is travels from Ground to Top Of the Podium.
3. Except above mentioned amendments in a Building 'B' there is no any changes i.e. open spaces around building, Staircases Lifts, plinth, podium etc.

The floor-wise user of the building is as under.

HEIGHT, FLOOR AREA AND OCCUPANCY:

S. No.	Building Type	Floors	User
1	Building 'B'	Lower Ground	Parking
		Ground Floor	Parking
		Podium Floor	Parking & Entrance Lobby
		1 st to 7 th , 9 th , 10 th , 12 th to 15 th , 17 th to 20 th , 22 nd to 25 th , 27 th , 28 th Floors	6 Nos. Residential flats
		29 th Floor	Fitness Center
		8 th , 11 th , 16 th , 21 st , 26 th Floors	05 Residential flats + 01 Nos. Refuge area

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.	'B'	8 th	59.70	103.20	27.50
		11 th	102.08	103.20	36.20
		16 th	102.08	103.20	50.70
		21 st	102.08	103.20	65.20
		26 th	68.55	103.20	79.70
In addition to that terrace of building will be treated as refuge area. Whether to calculate excess Refuge area in FSI or not shall be decided by A.D.T.P.					

OPEN SPACE:- (Building 'B')

The plot approachable by 20.0 M. wide existing Road from North side connected with 9.0 M ramp with 18.0M turning.

S. NO.	SIDE	MIN. OPEN SPACE
01	North	14.50 Mtrs. on Top Of the Podium
02	South	12.30 Mtrs. on Top Of the Podium
03	East	12.00 Mtrs. on Top Of the Podium
04	West	13.90 Mtrs. on Top Of the Podium

THE DETAILS OF STAIRCASES & LIFTS :-

Building	Staircase description	Width of staircase	Nos. of staircase
Bldg. B	Leading from Ground to 29 th Floors	1.50 m. wide	02 Nos.

Building	Lifts Type	Profile	Nos. of lifts
Bldg. B	Passenger lift	Leading from Ground to 29 th Floors	02 Nos.
	Fire lift	Leading from Ground to 29 th Floors	01 Nos.

Except above mentioned amendment in a Building 'B' there is no any changes i.e. open spaces around the building, Staircases, Lifts etc.

In view of the above, as far as this department is concerned, there is no objection from fire safety point of view for the above mentioned amendment for the proposed construction of high rise residential Building 'B' having Lower Ground + Ground + Podium + 29th Floors with a total height of 91.90 mtrs. from general ground level up to terrace level as shown on enclosed amended plans, signed in token of approval subject to compliances of the following additional modified requirements stipulated by this department.

All the fire safety measures stipulated earlier vide Initial NOC No. – TMC/CFO/M-4331/188 dtd. 16/02/2015, Amended NOC No. TMC/CFO/M- 320/4 dtd. 05/05/2015, Amended NOC No. TMC/CFO/M-1572/95 dtd. 20/08/2015 shall be strictly adhered to along with the following additional fire safety requirements.

Flat entrance & kitchen entrance shall be of solid core having fire resistance of not less than one hour (solid wood of 45 mm thickness.) The fire resistance rating for staircase F.R.D., Lift lobby / protected lobby & the lift doors as per N.B.C. provisions.

A) UNDERGROUND WATER STORAGE TANKS:

An underground water storage tank of 2,00,000 liters capacity for building shall be provided as shown in the plan 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 :-

A tank of 30,000 liters capacity shall be provided on each staircase shaft at the terrace level of building. The tank shall be connected to the wet riser through a booster pump through a non-return valve and gate valve.

C) WET RISER CUM DOWN COMER :-

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 podium / parking floors.

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.
- 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:-

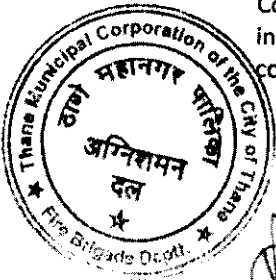
Automatic sprinkler system shall be provided in entire building including lift lobby, common corridor at each floor level of Building and each habitable room of each flat on each floor level, entire fitness center; entire podium, entire car parking area in such a way to cover each car parking at ground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

F) DRENCHER SYSTEM:-

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



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H) HEATRISE DETECTORS :-

Rate of Rise type Heat detectors shall be installed in the hot areas i.e. kitchen of apartments etc. and same shall be connected to main console at ground floor level.

I) FIRE PUMP, BOOSTER PUMP, and SPRINKLER PUMP AND JOCKEY PUMP :-

- 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 terrace level.
- III. Sprinkler pump of suitable capacity along with jockey pump shall be provided for automatic sprinkler system.
- IV. Electric supply (normal) to these pump sets shall be separate LT service circuit.
- V. Separate jockey pump shall be provided to Wet riser system to keep system pressurized.
- VI. Operating switches for fire booster pumps control on/off push buttons hard wired shall be provided at ground floor control room.
- VII. Operating switches of fire pumps control on/off push buttons hard wired shall be provided at ground floor control room.
- VIII. All above pumps should be surface mounted or vertical turbine type (submersible pump not permitted) pump along with adequate size of pump room

J) SET OF STAND BY PUMP:-

Set of standing pump shall be provided as per NBC.

K) 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, podium floor, as well as on each floor of Building near the wet riser outlet.

L) ALTERNATE SOURCE OF POWER SUPPLY:-

An alternate source of LV/HV supply from a separate substation as well as or 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.

M) 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 club house, electric meter room as well as in lift machine room.
- (ii) 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 at ground & level of podium for every 100 sq.mtrs area.

- (iii) 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
- (iv) All above fire extinguishers should be placed on each floor level as per IS: 2190 of 1992.

N) FIRE ALARM SYSTEM / FIRE DETECTION SYSTEM :

- a) Building shall be provided with intelligent analog addressable fire alarm system with microprocessor based main control panel at ground floor level and addressable call points and hooters at each floor level. The design of fire alarm system shall be in accordance with I.S. specification and based on NFPA 72 guidelines (as per 2010 edition).
- b) The addressable fire alarm system shall be equipped with the latest evacuation features such as digital voice evacuation capabilities; fire fighters telephone system, directional sounders etc. The main entry / exit points shall be provided with fire fighters interactive interface to enable viewing of critical information in event of fire.
- c) Building shall be provided with manual fire alarm system with main control panel at ground floor level and pull-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.

O) FIRE CONTROL ROOM :-

- a) Separate Fire Control room as marked in plan, 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 maintained.
- c) Control panel of fire safety system shall be located in the control room.
- d) The size of the control room shall be in accordance with the MEP consultant for the project.

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 ground floor area.

Q) BREATHING APPARATUS SETS :-

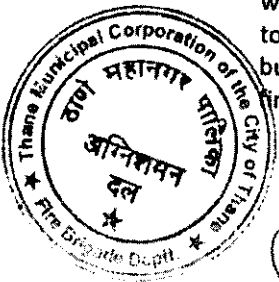
Two Self-contained Compressed Air Breathing Apparatus sets of 45 minutes duration each shall be kept in the fire control room in consultation with C.F.O.

R) VOICE EVACUATION SYSTEM :-

A standalone manual voice evacuation system input to be provided at the control room 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 via stand-alone Public address system on the affected floor, one floor below & two floors above the affected floor.

S) INTEGRATED SYSTEM :-

The entire firefighting system shall be integrated with Fire Alarm System (hard wired through Interface Units). External type strobe 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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T) FIRE DRILLS / EVACUATION DRILLS:-

Fire Drills and evacuation drills shall be conducted regularly in accordance with fire safety plan of building at least once in a three month in consultation with Thane Fire Brigade and log of the same shall be maintained.

U) SERVICE DUCT:-

- 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.

V) QUALIFIED 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.

- 1. Trained security staff & fire staff shall be posted on duty at strategic location around the clock.
- 2. Security / fire staff shall be trained in evacuation procedure & use of firefighting equipment.
- 3. The entire building floors shall be provided with proper standard signage.

W) ASCENDING/DESCENDING DEVICE :-

- a) Controlled lowering device or External evacuation system as approved by CFO shall be provided.
- b) External operated ascending and descending evacuation system having suitable capacity with entry and exit at each floor level which is connected to common lobby (staircase/lift)
- c) The lowering device shall be installed on the external face of the building from terrace with guide line, along with cabin & should use for ascending & descending.

X) DISASTER MANAGEMENT PLAN :-

- i) Disaster management plan for fire & other emergency shall be prepare and kept ready at the control room.
- ii) 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.
- iii) Emergency exit route plan framed in glass shall be displayed in the common corridor, staircase/lift lobbies.

Y) FIRE CONTROL ROOM (BMS ROOM):-

- Separate Fire Control room as marked in plan, shall be established on ground floor.
- Plan of each floors indicating means of egress as well escape shall be maintained.
- Control panel of fire safety system shall be located in the control room.
- The size of the control room shall be in accordance with the MEP consultant for the project.
- The location of control room shall be kept closer to the main entrance to direct fire appliances responding to any emergency.

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

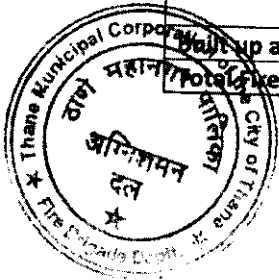
If any discrepancies observed about the DCR during construction, then above said NOC will be revoked by chief Fire Officer.

No other changes except mentioned above as shown on the plan shall be carried out in the building unless / until permitted by this department. Otherwise NOC's issued by this department will be revoked by Chief Fire Officer.

At the time of Final NOC or during construction if any irregularity is observed, then above NOC will be revoked by Chief Fire Officer, Thane.

Fire Premium Charges, Fire Infrastructure Charges & Fire Safety Charges to be paid are as follows: Building 'B' having Lower Ground + Upper Ground + Podium + 29th Floors

Upto 0.00 M. to 36.00 M. height				
Sr. No.	Building No./Floor No.	Built Up Area (Sq.M.)	Floor Height from Ground	Fire Charges
1.	Lower Ground	-	-	3600.06 x 300/- = 10,80,018/-
2.	Ground Floor	-	3.00	
3.	Podium Floor	-	4.20	
4.	1 st Floor	409.79	2.90	
5.	2 nd Floor	409.79	2.90	
6.	3 rd Floor	409.79	2.90	
7.	4 th Floor	409.79	2.90	
8.	5 th Floor	409.79	2.90	
9.	6 th Floor	409.79	2.90	
10.	7 th Floor	409.79	2.90	
11.	8 th Floor	321.74	2.90	
12.	9 th Floor	409.79	2.90	
Total		3600.06	33.30	
Built up area upto 0 to 36.00 M. height = 6527.29 Sq.m. - (A)				10,80,018/-
13.	10 th Floor	409.79	2.90	731.53 x 600 /- = 4,38,918/-
14.	11 th Floor	321.74	2.90	
Total		731.53	39.10	
Built up area upto 36.00 to 40.00 M. height = 731.53 Sq.M. - (B)				4,38,918/-
Total Fire Premium Charges (A+B)				15,18,936/-



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Sr. No.	Building No./Floor No.	Built Up Area (Sq.M.)	Floor Height from Ground	Fire Charges
15.	12 th Floor	409.79	2.90	2780.48 x 700/- = 19,46,336/-
16.	13 th Floor	409.79	2.90	
17.	14 th Floor	409.79	2.90	
18.	15 th Floor	409.79	2.90	
19.	16 th Floor	321.74	2.90	
20.	17 th Floor	409.79	2.90	
21.	18 th Floor	409.79	2.90	
Total		2780.48	59.40	
Built up area upto 40.00 M. to 60.00 M. height = 2780.48 Sq.M. – (C)				19,46,336/-
22.	19 th Floor	409.79	2.90	2780.48 x 800/- = 22,24,384/-
23.	20 th Floor	409.79	2.90	
24.	21 st Floor	321.74	2.90	
25.	22 nd Floor	409.79	2.90	
26.	23 rd Floor	409.79	2.90	
27.	24 th Floor	409.79	2.90	
28.	25 th Floor	409.79	2.90	
Total		2780.48	79.70	
Built up are upto 60.00 M. to 80.00 M. height = 2780.48 Sq.M. – (D)				22,24,384/-
29.	26 th Floor	409.79	2.90	1141.32 x 900/- = 10,27,188/-
30.	27 th Floor	409.79	3.20	
31.	28 th Floor	321.74	3.20	
32.	29 th Floor	--	2.90	
Total		1141.32	91.90	
Built up area upto 80.00 M. to 92.00 M. height = 1141.32 Sq.M. (E)				10,27,188/-
Total Fire Infrastructure Charges (C+D+E)				51,97,908/-

Fire Premium Charges

Bldg. No.	Built up Area (Sq.mt.)	Charges (In Rs.)
Bldg. B – (Lower Ground + Upper Ground + Podium + 29 th Floors)	13961.10	15,18,936.00
Already paid charges (Receipt No. FIR/HQ/001899/2014 Dt. 16/02/2015)		8,80,328.00
To be paid charges		6,38,608.00

Fire Premium Charges - Rs. 6,38,608/-
 Receipt No. - TMC/HQ/0009846/16-17 Dt. 18/02/2017

Fire Infrastructure Charges

Bldg. No.	Built up Area (Sq.mt.)	Charges (In Rs.)
Bldg. B – (Lower Ground + Upper Ground + Podium + 29 th Floors)	13961.10	51,97,908.00
Already paid charges (Receipt No. FIR/HQ/001898/2014 Dt. 16/02/2015)		10,56,396.00
To be paid charges		41,41,512.00

Fire Premium Charges - Rs. 41,41,512/-
Receipt No. - TMC/HQ/0009847/16-17 Dt. 18/02/2017

Fire Service Fee

Bldg. No.	Built up Area (Sq.mt.)	Charges (In Rs.)
Bldg. B – (Lower Ground + Upper Ground + Podium + 29 th Floors)	13961.10	1,39,611.00

Fire Service Fee - Rs. 1,10,339/-
Receipt No. - TMC/HQ/0009848/16-17 Dt. 18/02/2017

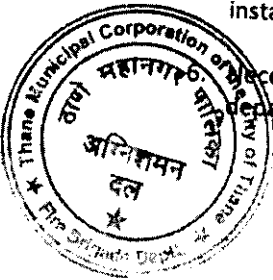
Fire Service Fee - Rs. 29,272/-
Receipt No. - TMC/HQ/0009849/16-17 Dt. 18/02/2017

Architect has certified the area & accordingly paid the various fees. Architect has certified & submitted the table of area along with fees paid, if any differences in fees paid & if any queries objected by the auditor then balance fees to be paid by Architect / developer, 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 & regulation.

However, A.D.T.P., TDD, TMC, Thane 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:-

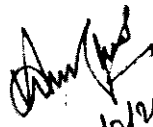
1. The firefighting installation shall be carried out by licensed approved agency.
 2. The area calculation / fees paid shown in the enclosed plan is as well as certified by Architect shall be checked by the A.D.T.P.
 3. A.D.T.P. (T.D.O.) is requested to scrutinize the plans as per DCR, & verify Civil work and all other requirements pertaining to civil Engineering side including open spaces, corridors, ventilation, staircases, amendments, height, refuge area in Sq. mtrs. And floor occupancy of the building. And if these plans, given open spaces are not approvable then this NOC shall be referred back to this department for revised NOC.
 4. This NOC is issued from fire risk point of view only.
 5. The schematic drawings/plans of sprinkler system, smoke detection system, wet riser system, public address system, etc. shall be got approved from CFO prior to installation.
- Necessary permission for any licensable activity shall be obtained from concerned department and TMC / CFO's department till then such activity shall not be allowed.



7. There shall be no tree to be located in compulsory open spaces.
8. 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.
9. The schematic drawings/plans of Sprinkler system, smoke detection System, Wet riser system, Public Address system etc. shall be got approved from CFO prior to installation.
10. If any discrepancies observed about the DCR during construction then above NOC will be revoked by C.F.O.


Chief Fire Officer
Thane Fire Brigade

✓ To : M/s. Saakaar Architects


22/2/2017


Chief Fire Officer
Thane Fire Brigade