

**Office of the Director General
of Police & Director General
Karnataka State Fire & Emergency
Services and State Disaster
Response Force**

No. 1, Annaswamy Mudaliar Road

Bengaluru - 560 042
No. GBC(1)190/2011



Phone : 25570733

22971501

Fax : 22971512

18-12-2019

To,
The Commissioner,
Bruhat Bengaluru Mahanagara Palike,
N.R. Square,
Bengaluru - 560 002.

Sir,

Sub: Issue of Revised No Objection Certificate for constructed of high rise Residential building i.e Tower-2 with 05 wings at Property No..14-1-1, No.1, Industrial Suburb, Ward No. 67, Nagapura, Opp Vivekananda college, Dr.Rajkumar road, Bangalore.

Ref: 1) This office Revised NOC No.GBC(1)190/2011.dated:17-02-2014.

2) This office Clearance certificate No.GBC(1)190/2011 dated 10-08-2018.

3) This office corrigendum dated 04-04-2019

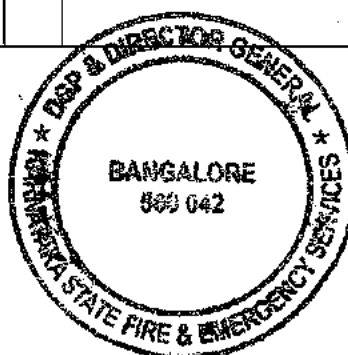
4) Letter.dated:25-10-2019 of the Authorized Signatory,
M/s Palladium constructions Pvt Ltd, Bangalore.

In the reference, cited at (1) above, the revised NOC for the construction of High Rise Residential Building i.e. Tower-2 comprising of 4 Basements ground & 31 upper floors at Property No.14-1-1, No.1, Industrial Suburb, Ward No.67, Nagapura, Opp. Vivekananda College, Dr.Rajkumar Road, Bangalore was issued. Subsequently in reference (2) clearance certificate was issued. Further in reference (4) corrigendum was issued for conversions of some duplex flats into simplex flats. Now the applicant in his letter, cited at (4) above, has informed about change the plans and requested to issue a revised NOC. Accordingly the Chief Fire Officer, Bangalore West Zone, Bangalore of this department has re-inspected the already constructed and cleared High Rise Residential building with reference to the revised drawings, submitted by the applicant and has furnished the details as follows:-

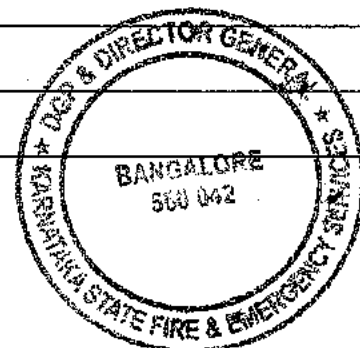
Part-A: General Building requirements.

Sl. no.	Details	:	General Requirements
1.	Name of the applicant.	:	The Authorized Signatory, M/s Palladium constructions Pvt Ltd, No.01, Industrial Suburb, Ward No.14, Nagapura, Opp Vivekananda college, Dr.Rajkumar road Bangalore.

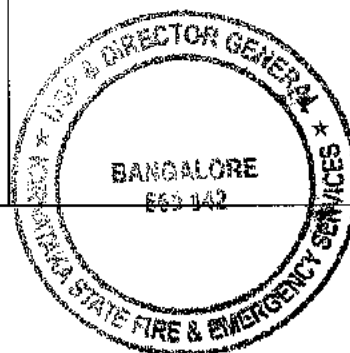
2.	Address of the Premises	:	Property No..14-1-1, No.1, Industrial Suburb, Ward No. 67, Nagapura, , Opp Vivekananda college, Dr.Rajkumar road Bangalore
3.	Number of Buildings.	:	01 building, i.e Tower-2 with 5 wings, i.e Wing-A, B, C, D & E.
4.	Number of floors	:	03 Basements, Ground and 30 Upper floors.
5.	Type of Occupancy Part 4, Fire and Life Safety of Part-IV of NBC of 2005. 2.53 Occupancy or Use Group — The principal occupancy for which a building or a part of a building is used or intended to be used; for the purposes of classification of a building according to occupancy; an occupancy shall be deemed to include subsidiary occupancies which are contingent upon it. <u>Sub-division A-4 Apartment houses (flats) —</u> These shall include any building or structure in which living quarters are provided for three or more families, living independently of each other and with independent cooking facilities, for example, apartment houses, mansions and chawls.	:	Residential. (Sub Division A-4 Apartment)



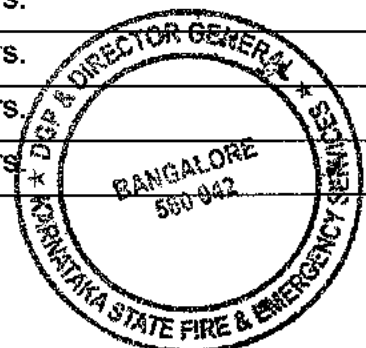
6.	<u>Floor wise details of the occupancy :-</u>		
	<u>Tower-2 with 5 wings.</u>		
	Basement-3	:	For parking 224 cars, 01 Panel room, 01 pump room, and 01 STP.
	Basement-2	:	For parking 223 cars & 01 Panel room.
	Basement-1	:	For parking 204 Cars, 01 DG room, 01 communication room & 01 Panel room.
	Ground floor	:	01 Multipurpose hall, 01 Association office, Practice Squash room, 05 reception lobbies, 01 Pantry, 01 Cafe, 02 Business centre, 01 Billiard/Cards room, 1 Mini theatre, 01 TT room, 1 Kids play area, 01 Music room, Virtual Golf, Library and 05 Electrical room.
	1st floor	:	07 Flats.
	2nd floor	:	7 Flats, out of Which 01 flat is duplex type.
	3rd floor	:	06 Flats.
	4th floor	:	07 Flats.
	5th floor	:	07 Flats
	6th floor	:	07 Flats.
	7th floor	:	07 Flats.
	8th floor	:	7 Flats, out of Which 01 flat is duplex type.
	9th floor	:	06 Flats.
	10th floor	:	07 Flats.
	11th floor	:	07 Flats.
	12th floor	:	07 Flats.
	13th floor	:	07 Flats.
	14th floor	:	07 Flats.



	15 th floor	:	07 Flats
	16 th floor	:	07 Flats
	17 th floor	:	07 Flats
	18 th floor	:	7 Flats, out of Which 01 flat is duplex type.
	19 th floor	:	06 Flats
	20 th floor	:	7 Flats, out of Which 01 flat is duplex type.
	21 st floor		06 Flats
	22 nd floor	:	07 Flats
	23 rd floor	:	07 Flats
	24 th floor	:	7 Flats, out of Which 01 flat is duplex type.
	25 th floor	:	06 Flats
	26 th floor	:	7 Flats, out of Which 01 flat is duplex type.
	27 th floor	:	06 Flats
	28 th floor	:	07 Flats
	29 th floor	:	07 Flats
	30 th floor	:	Banquette hall, Indoor pool, lounge, Gym/Spa and Game room.
	Total.	:	197 flats.
7.	Height of the building. As per Part 3 Development Control Rules and General Building Requirements clause 2.10 of NBC 2005 Building, Height of – The vertical distance measured in the case of flat roofs, from the average level of the ground around and contiguous to the building or as decided by the Authority to the terrace of the last livable floor of the building adjacent to the external wall; and in the case of pitched roofs, up to the point where the external surface of the outer wall intersects the finished surface of the sloping roof;		108.00 mtrs.



	and in the case of gables facing the road, the mid-point between the eaves level and the ridge. Where the building is located in a sloped terrain, height shall be determined from the lowest level (that is approachable by the fire service vehicles) to the terrace level. Architectural features serving no other function except that of decoration shall be excluded for the purpose of measuring heights.		
8.	Site Area. As per Part 3 Development Control Rules and General Building Requirements clause 2.74 of NBC 2005 Site (Plot) — A parcel (piece) of land enclosed by definite boundaries.	:	67,488.073.Sq. Mtrs.
9.	Built up area of each floor.(Block wise)	:	
	<u>Wing-D & E</u>		
	Basement-3	:	9.869.45 Sq.mtrs
	Basement-2	:	9,755.67 Sq.mtrs
	Basement-1	:	9,489.03 Sq.mtrs
	Ground floor	:	3,244.71 Sq.mtrs
	1 st floor	:	3,624.30 Sqmtrs.
	2 nd floor	:	2,883.33 Sqmtrs.
	3 rd floor	:	2,799.90 Sqmtrs.
	4 th floor	:	2,859.09 Sqmtrs.
	5 th floor	:	2,865.43 Sqmtrs.
	6 th floor	:	2,883.33 Sqmtrs.
	7 th floor	:	2,865.43 Sqmtrs.
	8 th floor	:	2,843.16 Sqmtrs.
	9 th floor	:	2,799.90 Sqmtrs.
	10 th floor	:	2,883.33 Sqmtrs.

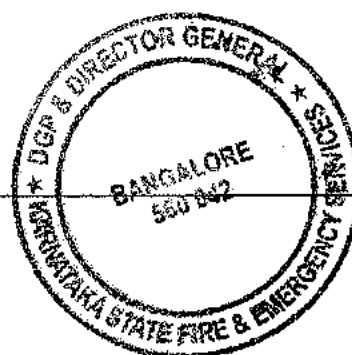


	11 th floor	:	2,865.43 Sqmtrs.
	12 th floor	:	2,859.09 Sqmtrs.
	13 th floor	:	2,865.43 Sqmtrs.
	14 th floor	:	2,883.33 Sqmtrs.
	15 th floor	:	2,865.43 Sqmtrs.
	16 th floor	:	2,859.09 Sqmtrs.
	17 th floor	:	2,865.43 Sqmtrs.
	18 th floor	:	2,883.33 Sqmtrs.
	19 th floor	:	2,799.90 Sqmtrs.
	20 th floor	:	2,843.16 Sqmtrs.
	21 st floor	:	2,799.90 Sqmtrs.
	22 nd floor	:	2,883.33 Sqmtrs.
	23 rd floor	:	2,865.43 Sqmtrs.
	24 th floor	:	2,843.16 Sqmtrs.
	25 th floor	:	2,799.90 Sqmtrs.
	26 th floor	:	2,883.33 Sqmtrs.
	27 th floor	:	2,799.90 Sqmtrs.
	28 th floor	:	2,859.09 Sqmtrs.
	29 th floor	:	2,834.68 Sqmtrs.
	30 th floor	:	1,696.70 Sqmtrs.
10.	Total Built-up area.	:	1,17,521.11 Sq.Mtrs.
11.	Surrounding Properties.		
	Front(East)	:	24.00 mtrs Dr.Rajkumar road,
	Rear (West)	:	Iscon Temple
	Side (North)	:	Government office building of Ground & 2 upper floors.
	Side (West)	:	Open land belongs to The BWSSB.



B. Structural details indicating the fire prevention, fire fighting and evacuation measures to be indicated in the drawings.

Sl.	Details	: General Requirements
1.	<i>Width of the road to which the building abuts and whether it is hard surfaced to carry the weight of 45000 kgs.</i> As per Part 3 Development Control Rules and General Building Requirements clause 2.82 of NBC 2005 Street : Any means of access, namely, highway, street, lane, pathway, alley, stairway, passageway, carriageway, footway, square, place or bridge, whether a thoroughfare or not, over which the public have a right of passage or access or have passed and had access uninterruptedly for a specified period, whether existing or proposed in any scheme, and includes all bunds, channels, ditches, storm-water drains, culverts, sidewalks, traffic islands, roadside trees and hedges, retaining walls, fences, barriers and railings within the street lines.	Name of the Road: 24.00 mtrs wide Dr.Rajkumar road located on eastern side and the road is harden to carry weight of 45,000 Kgs. Width of the Road: 24.00 mtrs. Type of Road :- Asphalted road. Is road a Dead end: No
2.	<i>Number of entrances and width of each entrance to the premises & height clearance over the entrance.</i> As per Part 3 Development Control Rules and General Building Requirements clause 4.6 (C) of NBC 2005 1) The main entrance to the plot shall be of adequate width to allow easy access to the fire engine and in no case shall it measure less than 6 m. 2) The entrance gate shall fold	2 entrances each of 6.00 mtrs. width. From 24.00 mtrs wide Dr.Rajkumar road have been provided on eastern side. Is Entrance gate provisioned: Yes. Is any Parabola planned : No.



	back against the compound wall of the premises, thus leaving the exterior access way within the plot free for movement of fire tender. 3) If the main entrance at the boundary wall is built over, the minimum clearance shall be 4.5 m. A turning radius of 9m shall be provided for fire tender movement.	
3.	Width of open space (Setbacks) As per Part 3 Development Control Rules and General Building Requirements of NBC 2005 An area, forming an integral part of the plot, left open to the sky. Note: The open space shall be the minimum distance measured between the front, rear and side of the building and the respective plot boundaries. 2.57 Open Space, Front — An open space across the front of a plot between the building line and front boundary of the plot. 2.58 Open Space, Rear — An open space across the rear of a plot between the rear of the building and the rear boundary of the plot. 2.59 Open Space, Side — An open space across the side of the plot between the side of the building and the side boundary of the plot. FIG. 6 Note: The above requirements shall be read along with the provision of Clause 4.6 (b) of the code. As per NBC 2005 Part 3 Development control rules and General Building Requirements, Table 2 Side and Rear Open	height of the building is 108 Mtrs. Setback space left: Front (North) : Minimum 16.00 Mtrs. Rear (South) : Minimum 16.00 Mtrs. Side (East) : Minimum 16.00 Mtrs. Side (West) : Minimum 16.00 Mtrs. Driveway space left: Minimum 8.00 Mtrs wide fire driveway has been provided all around building from the building line with a turning radius of 9.00 Mtrs. for the easy movement fire vehicles.



spaces for Difference Height of Buildings (Clause 8.2.3.1).

Sl No.	Height of the Building	Side and rear open spaces to be left around the building
1.	10	3
2.	15	5
3.	18	6
4.	21	7
5.	24	8
6.	27	9
7.	30	10
8.	35	11
9.	40	12
10.	45	13
11.	50	14
12.	55 and above	16

NOTES

1 For buildings above 24 m in height, there shall be a minimum front open space of 6 m.

2 Where rooms do not derive light and ventilation from the exterior open space, the width of such exterior open space as given in col 3 may be reduced by 1 m subject to a minimum of 3 m and a maximum of 8 m. No further projections shall be permitted.

3 If the length or depth of the building exceeds 40 m, add to col (3) 10 percent of length or depth of building minus 4.0 m

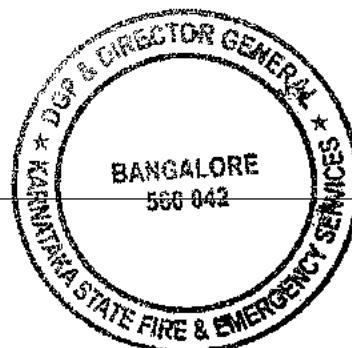
Front ()

Rear ()

Side ()

Side ()

Note:- Abutting 12.00 mtrs road is not considered as a setback. This road meant for public utility. Separate required setback should be provided in-between compound wall to building as per above table



recommended for rear & 2 sides.
As per Part-3 Development Control Rules and General Building Requirements Clause 4.6 b) b) The approach to the building and open spaces on all its sides up to 6 m width and the layout for the same shall be done in consultation with the Chief Fire Officer of the city and the same shall be hard surface capable of taking the mass of fire engine, weighing up to 45 tonnes. The said open space shall be kept free of obstructions and shall be motorable.
 c) A turning radius of 9 m shall be provided for fire tender movement. The compulsory open spaces around the building shall not be used for parking.

4. Width of means of access
As per Part 3 Development Control Rules and General Building Requirements of NBC 2005

4.3 Width of Means of Access

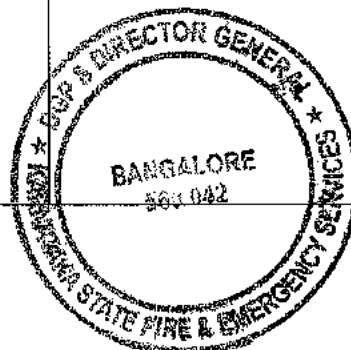
The plots shall abut on a public means of access like street/road. Plots which do not abut on a street/road shall abut/front on a means of access, the width and other requirements of which shall be as given in Table 1.

Table 1 Width and Length of Means of Access (Clause 4.3)

Sl no.	Width of means of access	Length of means of access
(1)	(2)	(3)
i.	6.0	75
ii.	7.5	150
iii.	9.0	250
iv.	12.0	400
v.	18.0	1000
vi.	24.0	Above

Street/ Road width:- 24.00 mtrs wide Dr.Rajkumar road .

The Premises is directly abutting from 24.00 mtrs wide Dr.Rajkumar road located on eastern side



		1000		
	Note: If the development is only on one side of the means of access, the prescribed widths may be reduced by 1 m in each case.			
5.	Arrangement for parking the cars and ramps. As per Part 3 Development Control Rules and General Building Requirements of NBC 2005 Clause 2.62: Parking Space — An area enclosed or unenclosed, covered or open, sufficient in size to park vehicles, together with a drive-way connecting the parking space with a street or alley and permitting ingress and egress of the vehicles. 9.6.3.2 The basement may vary between 33.33 to 50 percent of the plot area and is to be used for parking, servicing and for essential household storage without counting in FAR. 9.6.3.3 One car parking space for every two flats up to 90 m² floor area and one for every flat for 100 m² or more shall be provided. 9.6.4 With a view to providing adequate parking for occupancies and the vehicular load, appropriate off street parking provisions have to be made in the building/on-site. This could also be permitted in basement areas and the footprint for the basement parking can exceed the ground coverage of the building subject to no basement building construction to cross the building line and all other safety features for structural, fire, health and public safety being ensured. 10.9 Apart from parking at ground level, provision of underground or multistoreyed parking may be permitted. The parking of vehicles			Provision has been made to park 224 cars at Basement-3 parking area, 223 cars at Basement-2 parking area and 204 cars at Basement-1 parking area, Width of Ramp:- 2 ramps, each of 6.00 mtrs width have been provided for the cars to reach each existing basement parking area ground floor. Type of Ramp: Each Single ramp. Ramp width: Each of 6.00 mtrs. width. Location of Ramp: Ramps are located on the Eastern side. Gradation : 1 : 10



at different level may also be mechanized. In the case of parking spaces provided in basement(s), at least two ramps of adequate width and slope shall be provided, located preferably at opposite ends. In case of underground/multi-storeyed parking, special measures with regard to fire safety shall be taken (see Part 4 'Fire and Life Safety').

Note: As per Clause 3.10) of ZR 2007 of BDA

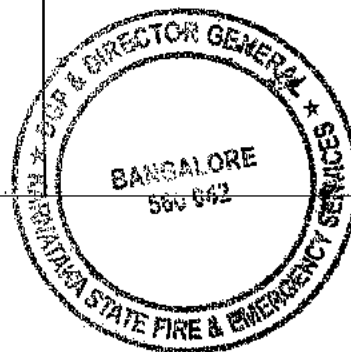
Ramps

- i. Provision for ramp shall have a minimum width of 3.5 m and a slope of not less than 1 in 10 and 1 in 8 in special cases. The ramp and the driveway in the basement shall be provided after leaving a clear gap of minimum 2.0 m from the common property line. The slope of the ramp shall commence from 1.5 m of the edge of property line.

6. **Staircases**
As per NBC 2005, Part 4, Fire and Life Safety clause 4.6.2 All buildings, which are 15 m in height or above, and all buildings used as educational, assembly, institutional, industrial, storage, and hazardous occupancies and mixed occupancies with any of the aforesaid occupancies, having area more than 500 m² on each floor shall have a minimum of two staircases.
 They shall be of enclosed type; at least one of them shall be on external walls of buildings and shall open directly to the exterior, interior open space or to an open place of safety. Further, the provision or otherwise of alternative staircases shall be subject to the requirements

: 08 Nos Staircases, 06 Nos are existing & 02 Nos. are Proposed in wing-D & E.

Staircase terminated at Ground level: Yes & 07 Nos separate staircases have been provided to reach each basements car parking area from ground floor.



of travel distance being complied with.

4.6.2 All buildings, which are 15 m in height or above, and all buildings used as educational, assembly, institutional, industrial, storage, and hazardous occupancies and mixed occupancies with any of the aforesaid occupancies, having area more than 500 m² on each floor shall have a minimum of two staircases.

They shall be of enclosed type; at least one of them shall be on external walls of buildings and shall open directly to the exterior, interior open space or to an open place of safety. Further, the provision or otherwise of alternative staircases shall be subject to the requirements of travel distance being complied with.

4.9.3 A staircase shall not be arranged round a lift shaft.

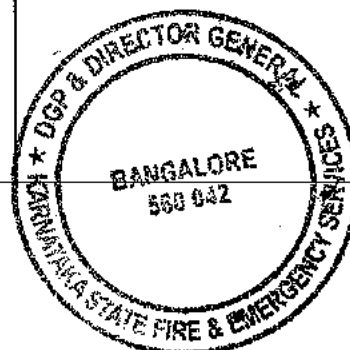
4.9.6 Notwithstanding the detailed provision for exits in accordance with 4.3, 4.4 and 4.5, the following minimum width shall be provided for staircases:

a) Residential building (dwellings) 1.0 m

4.9.7 The minimum width of tread without nosing shall be 250 mm for Residential buildings. The treads shall be constructed and maintained in a manner to prevent slipping.

4.9.8 The maximum height of riser shall be 190 mm for Residential buildings and the number shall be limited to 15 per flight.

4.9.9 Handrails shall be provided at a height of 1 000 mm to be measured from the base of the middle of the treads to the top of the handrails. Balusters/railing shall be provided such that the width of staircase does not reduce (see Fig. 1).

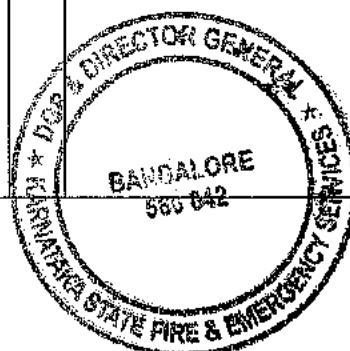


4.9.10 The number of people in between floor landings in staircase shall not be less than the population on each floor for the purpose of design of staircase. The design of staircase shall also take into account the following:

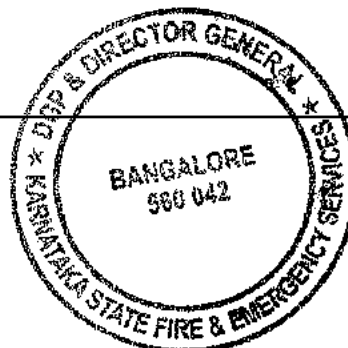
- a) The minimum headroom in a passage under the landing of a staircase and under the staircase shall be 2.2 m.
- b) For building 15 m in height or more, access to main staircase shall be through a fire/smoke check door of a minimum 2 h fire resistance rating. Fire resistance rating may be reduced to 1 h for residential buildings (except hotels and starred hotels).
- c) No living space, store or other fire risk shall open directly into the staircase or staircases.
- d) External exit door of staircase enclosure at ground level shall open directly to the open spaces or through a large lobby, if necessary.
- e) The main and external staircases shall be continuous from ground floor to the terrace level.
- f) No electrical shafts/AC ducts or gas pipes, etc, shall pass through or open in the staircases. Lifts shall not open in staircase.
- g) No combustible material shall be used for decoration/wall panelling in the staircase.
- h) Beams/columns and other building features shall not reduce the head room/width of the staircase.

4.10 Pressurization of Staircases (Protected Escape Routes)

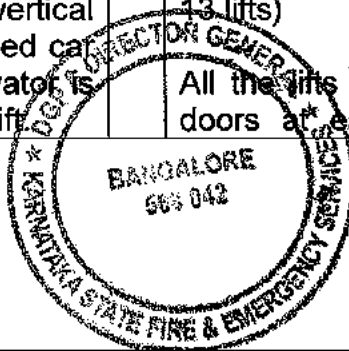
4.10.1 Though in normal building design, compartmentation plays a vital part in limiting the spread of fire, smoke will readily spread to adjacent spaces through the various leakage openings in the compartment enclosure, such as



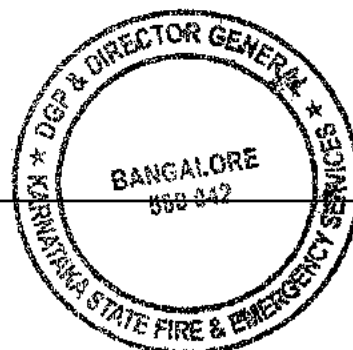
cracks, openings around pipes ducts, airflow grills and doors, as perfect sealing of all these openings is not possible. It is smoke and toxic gases, rather than flame, that will initially obstruct the free movement of occupants of the building through the means of escape (escape routes). Hence the exclusion of smoke and toxic gases from the protected routes is of great importance. 4.10.2 Pressurization is a method adopted for protected escape routes against ingress of smoke, especially in high-rise buildings. In pressurization, air is injected into the staircases, lobbies or corridors, to raise their pressure slightly above the pressure in adjacent parts of the building. As a result, ingress of smoke or toxic gases into the escape routes will be prevented. The pressurization of staircases shall be adopted for high rise buildings and building having mixed occupancy/ multiplexes having covered area more than 500 m².		
Internal Staircase Size: a. Width of the staircases. As per Clause 4.9.6, 4.3, 4.4 & 4.5 of Part 4 Fire and Life Safety The following minimum width shall be provided for: a) Residential buildings (dwellings): 1.00 m. b. Width of treads As per clause 4.9.7: The Minimum width of tread without nosing shall be 250 mm for staircase of residential buildings. c. Height of riser. As per clause 4.9.8 The maximum height of riser shall be 190 mm for staircase of residential building.	: : :	Existing 06 Nos staircase each of 1.20 mtrs width Proposed 02 Nos staircases, Each of 1.25 mtrs width. 300 mm. 166 mm.



	d. Number of risers in a flight As per clause 4.9.9 General the number of risers shall be limited to 15 per flight.	:	Maximum 10 risers per flight.										
	e. Height of hand rails As per clause 4.9.9: Handrails shall be provided at a height of 1 000 mm to be measured from the base of the middle of the treads to the top of the handrails. Balusters/railing shall be provided such that the width of staircase does not reduce	:	1000 mm.										
	f. Head room clearance As per clause 4.9.10 a) the minimum headroom in a passage under the landing of a staircase and under the staircase shall be 2.2 m.	:	2.40 mtrs.										
7.	As per Table 22 Travel Distance (Based on Occupancy and Construction Type) Clause 4.4.2.1 and 4.4.2.2 <table border="1" data-bbox="255 1093 766 1355"> <tr> <th rowspan="2">Sl No.</th><th rowspan="2">Occupancy Group</th><th colspan="2">Maximum Travel distance</th></tr> <tr> <th>Type 1 & 2</th><th>Type 3 & 4</th></tr> <tr> <td>I.</td><td>Residential (Group A)</td><td>30.00</td><td>22.50</td></tr> </table> Notes: 1. For fully sprinklered building, the travel distance may be increased by 50 percent of the values specified. 2. Ramp shall not be counted as an exit in case of basement below the first basement in car parking.	Sl No.	Occupancy Group	Maximum Travel distance		Type 1 & 2	Type 3 & 4	I.	Residential (Group A)	30.00	22.50	:	Maximum 30.00 mtrs from the farthest point to staircases in Basements. Maximum 32.00 Mtrs. from the farthest point & maximum 10.00 Mtrs. from the dead end of the corridor to the nearest staircases in upper floors.
Sl No.	Occupancy Group			Maximum Travel distance									
		Type 1 & 2	Type 3 & 4										
I.	Residential (Group A)	30.00	22.50										
8.	Number of lifts and capacity. Lift: An appliance designed to transport persons or materials between two or more levels in a vertical or substantially vertical direction by means of a guided car or a platform. The word elevator is also synonymously used for lift.	:	10 Passengers lifts, each of 16 passengers capacity and 03 Nos service lifts, each of 1,600 Kgs capacities have been installed (Total 13 lifts) All the lifts are automatic self closing doors at each lift car and at each										



As per clause 4.15.1 of Part-4 Fire and Life Safety of NBC-2005 Where applicable, fire lifts shall be provided with a minimum capacity for 8 passengers and fully automated with emergency switch on ground level. In general, buildings 15 m in height or above shall be provided with fire lifts. Fire Lifts — Following details shall apply for a fire lift: 1) To enable fire services personnel to reach the upper floors with the minimum delay, one fire lift per 1 200 m² of floor area shall be provided and shall be available for the exclusive use of the firemen in an emergency. 2) The lift shall have a floor area of not less than 1.4 m². It shall have loading capacity of not less than 545 kg (8 persons lift) with automatic closing doors of minimum 0.8 m width. 3) 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. Lights and fans in the elevators having wooden panelling or sheet steel construction shall be operated on 24 V supply. 4) Fire fighting lift should be provided with a ceiling hatch for use in case of emergency, so that when the car gets stuck up, it shall be easily openable. 5) In case of failure of normal electric supply, it shall automatically trip over 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	landing of 120 min fire resistance capacity for designated fire lift only.
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failure, it comes down at the ground level and comes to stand-still with door open.

6) The operation of a fire lift is by a simple toggle or two-button switch situated in a 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. This lift can be used by the occupants in normal times.

7) The words 'Fire Lift' shall be conspicuously displayed in fluorescent paint on the lift landing doors at each floor level.

8) The speed of the fire lift shall be such that it can reach the top floor from ground level within 1 min.

Specification of lifts:

C-1.5 Lifts

General requirements of lifts shall be as follows:

a) Walls of lift enclosures shall have a fire rating of 2 h; lifts shafts shall have a vent at the top of area not less than 0.2 m^2 .

b) Lift motor room shall be located preferably on top of the shaft and separated from the shaft by the floor of the room.

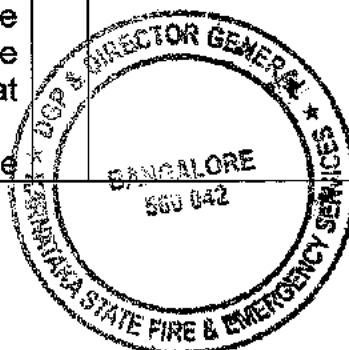
c) Landing doors in lift enclosures shall have a fire resistance of not less than 1 h.

d) The number of lifts in one row for a lift bank shall not exceed 4 and the total number of lifts in the bank (of two rows) shall not exceed 8. A wall of 2 h fire rating shall separate individual shafts in a bank.

e) Lift car door shall have a fire resistance rating of half an hour.

f) Collapsible gates shall not be permitted for lifts and shall have solid doors with fire resistance of at least 1 h.

g) If the lift shaft and lobby is in the



core of the building, a positive pressure between 25 and 30 Pa shall be maintained in the lobby and a positive pressure of 50 Pa shall be maintained in the lift shaft. The mechanism for pressurization shall act automatically with the fire alarm; it shall be possible to operate this mechanically also.

h) Exit from the lift lobby, if located in the core of the building, shall be through a self closing smoke stop door of half an hour fire resistance.

j) Lifts shall not normally communicate with the basement; if, however, lifts are in communication, the lift lobby of the basements shall be pressurized as in (g), with self-closing door as in (h).

k) Grounding switch(es), at ground floor level, shall be provided on all the lifts to enable the fire service to ground the lifts.

m) Telephone or other communication facilities shall be provided in lift cars for building of 30 m in height and above. Communication system for lifts shall be connected to fire control room for the building.

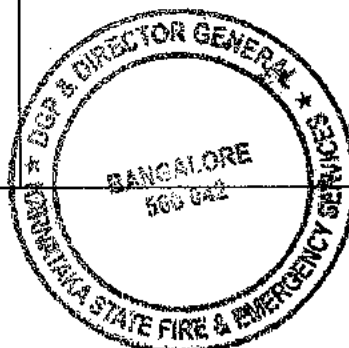
n) Suitable arrangements such as providing slope in the floor of lift lobby, shall be made to prevent water used during fire fighting, etc, at any landing from entering the lift shafts.

p) A sign shall be posted and maintained on every floor at or near the lift indicating that in case of fire, occupants shall use the stairs unless instructed otherwise. The sign shall also contain a plan for each floor showing the locations of the stairways.

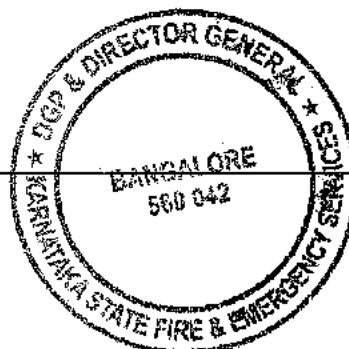
Alternate source of power supply shall be provided for all the lifts through a manually operated changeover switch.



9.	Structural material RCC materials and brick walls of not less than two hours fire resistance should be used for the construction of structures. Only fire resistant materials or materials treated with fire retardant chemicals, should be used for interior decoration work. While attending the interior decoration the fixed fire fighting systems like sprinklers / risers etc., should not be covered or shifted from their original location.	:	RCC materials and brick walls of not less than two hours fire resistance should be used for the construction of structures. Only fire resistant materials or materials treated with fire retardant chemicals, should be used for interior decoration work. While attending the interior decoration the fixed fire fighting systems like sprinklers/risers etc., should not be covered or shifted from their original location.
10.	Smoke control of Exits. 4.10 Pressurization of Staircases (Protected Escape Routes) 4.10.1 Though in normal building design, compartmentation plays a vital part in limiting the spread of fire, smoke will readily spread to adjacent spaces through the various leakage openings in the compartment enclosure, such as cracks, openings around pipes ducts, airflow grills and doors, as perfect sealing of all these openings is not possible. It is smoke and toxic gases, rather than flame, that will initially obstruct the free movement of occupants of the building through the means of escape (escape routes). Hence the exclusion of smoke and toxic gases from the protected routes is of great importance. 4.10.2 Pressurization is a method adopted for protected escape routes against ingress of smoke, especially in high-rise buildings. In pressurization, air is injected into the staircases, lobbies or corridors, to raise their pressure slightly above the pressure in adjacent parts of the building. As a result, ingress of smoke or toxic gases into the escape routes will be prevented.	:	<i>Smoke control of exits should be provided as per NBC 2005, Part 4, Fire and Life Safety Clause 4.10 Smoke control of exits.</i>



	The pressurization of staircases shall be adopted for high rise buildings and building having mixed occupancy/ multiplexes having covered area more than 500 m ² .		
11.	Compartmentation As per Part 4 Fire and Life Safety of NBC 2005 Annex C-9 The building shall be suitably compartmentalized so that fire/smoke remain confined to the area where fire incident has occurred and does not spread to the remaining part of the building. C-1.8 All floors shall be compartmented with area not exceeding 750 m² by a separation wall with 2 h fire rating, for floors with sprinklers the area may be increased by 50 percent. In long building, the fire separation walls shall be at distances not exceeding 40 m. For departmental stores, shopping centres and basements, the area may be reduced to 500 m² for compartmentation. Where this is not possible, the spacings of the sprinklers shall be suitably reduced. When reducing the spacing of sprinklers, care should be taken to prevent spray from one sprinkler impeding the performance of an adjacent sprinkler head.	:	Compartmentation Should be provided as per Part 4 Fire and Life Safety of NBC 2005 Annex C-9 .
12.	Basement Ventilation AS per Annex C-1.6 Basements of NBC 2005 Part 4 Life Safety. C-1.6.1 Each basement shall be separately ventilated. Vents with cross-sectional area (aggregate) not less than 2.5 percent of the floor area spread evenly round the perimeter of the basement shall be provided in the form of grills, or breakable stallboard lights or pavement lights or by way of shafts. Alternatively, a system of air inlets shall be provided at basement floor level and smoke	:	Basement Ventilation should be provided as per Annex C-1.6 Basements of NBC 2005 Part 4 Life Safety



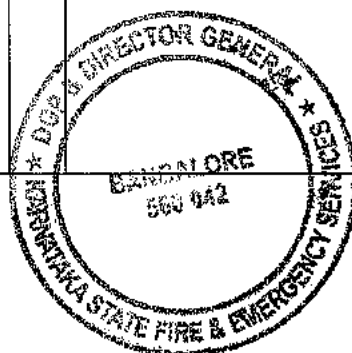
outlets at basement ceiling level. Inlets and extracts may be terminated at ground level with stallboard or pavement lights as before, but ducts to convey fresh air to the basement floor level have to be laid. Stallboard and pavement lights should be in positions easily accessible to the fire brigade and clearly marked 'SMOKE OUTLET' or 'AIR INLET' with an indication of area served at or near the opening.

C-1.6.2 The staircase of basements shall be of enclosed type having fire resistance of not less than 2 h and shall be situated at the periphery of the basement to be entered at ground level only from the open air and in such positions that smoke from any fire in the basement shall not obstruct any exit serving the ground and upper stores of the building and shall communicate with basement through a lobby provided with fire resisting self closing doors of 1 h resistance. For travel distance see 4.5. If the travel distance exceeds as given in Table 21, additional staircases shall be provided at proper places.

C-1.6.3 In multi-storey basements, intake ducts may serve all basement levels, but each basement levels and basement compartment shall have separate smoke outlet duct or ducts. Ducts so provided shall have the same fire resistance rating as the compartment itself.

Fire rating may be taken as the required smoke extraction time for smoke extraction ducts.

C-1.6.4 Mechanical extractors for smoke venting system from lower basement levels shall also be provided. The system shall be of such design as to operate on actuation of heat/smoke sensitive detectors or sprinklers, if installed,



and shall have a considerably superior performance compared to the standard units. It shall also have an arrangement to start it manually.

C-1.6.4.1 Mechanical extractors shall have an internal locking arrangement, so that extractors shall continue to operate and supply fans shall stop automatically with the actuation of fire detectors.

C-1.6.4.2 Mechanical extractors shall be designed to permit 30 air changes per hour in case of fire or distress call. However, for normal operation, air changes schedule shall be as given in 3.4.11.5.

C-1.6.4.3 Mechanical extractors shall have an alternative source of supply.

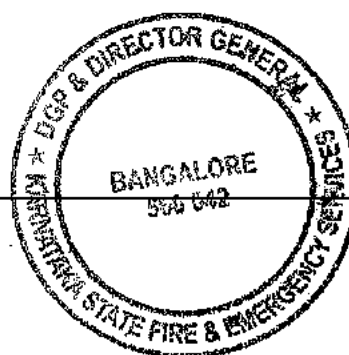
C-1.6.4.4 Ventilating ducts shall be integrated with the structure and made out of brick masonry or reinforced cement concrete as far as possible and when this duct crosses the transformer area or electrical switchboard, fire dampers shall be provided.

C-1.6.5 Use of basements for kitchens working on gas fuel shall not be permitted, unless air conditioned. Building services such as electrical sub-stations, boiler rooms in basements shall comply with the provisions of the *Indian Electricity Act/Rules*.

C-1.6.6 If cut outs are provided from basements to the upper floors or to the atmospheres, all sides cut out openings in the basements shall be protected by sprinkler head at close spacing so as to form a water curtain in the event of a fire.

C-1.7 Openable windows on external walls shall be fitted with such locks that can be opened by a fireman's axe.

C-1.8 All floors shall be compartmented with area not



exceeding 750 m² by a separation wall with 2 h fire rating, for floors with sprinklers the area may be increased by 50 percent. In long building, the fire separation walls shall be at distances not exceeding 40 m. For departmental stores, shopping centres and basements, the area may be reduced to 500 m² for compartmentation. Where this is not possible, the spacing's of the sprinklers shall be suitably reduced. When reducing the spacing of sprinklers, care should be taken to prevent spray from one sprinkler impeding the performance of an adjacent sprinkler head.

C-1.8.1 It is essential to make provisions for drainage of any such water on all floors to prevent or minimize water damage of the contents. The drain pipes should be provided on the external wall for drainage of water from all floors. On large area floors several such pipes may be necessary which should be spaced 30 m apart. Care shall be taken to ensure that the construction of the drain pipe does not allow spread of fire/smoke from floor to floor.

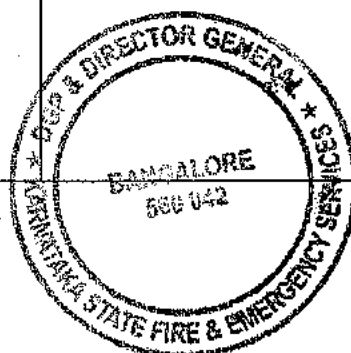
12.9 Basement

12.9.1 The basement shall not be used for residential purposes.

12.9.2 The construction of the basement shall be allowed by the Authority in accordance with the land use and other provisions specified under the Development Control Rules.

12.9.2.1 The basement to be constructed within the building envelope and subject to maximum coverage on floor 1 (entrance floor) may be put to only the following uses:

- a) Storage of household or other goods of ordinarily non-combustible material;
- b) Strong rooms, bank cellars, etc;

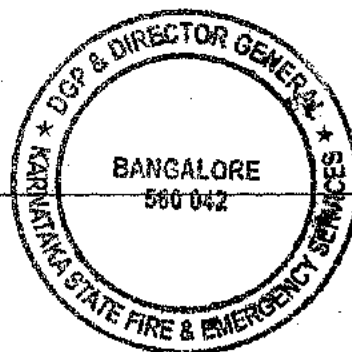


	c) Air-conditioning equipment and other machines used for services and utilities of the building; and d) Parking spaces. 12.9.3 The basement shall have the following requirements: a) Every basement shall be in every part at least 2.4 m in height from the floor to the underside of the roof slab or ceiling; b) Adequate ventilation shall be provided for the basement. The ventilation requirements shall be the same as required by the particular occupancy according to byelaws. Any deficiency may be met by providing adequate mechanical ventilation in the form of blowers, exhaust fans, air-conditioning systems, etc; c) The minimum height of the ceiling of any basement shall be 0.9 m and the maximum, 1.2 m above the average surrounding ground level; d) Adequate arrangements shall be made such that surface drainage does not enter the basement; e) The walls and floors of the basement shall be watertight and be so designed that the effects of the surrounding soil and moisture, if any, are taken into account in design and adequate damp proofing treatment is given; and f) The access to the basement shall be separate from the main and alternative staircase	
13.	Gas Supply As per clause Annex-C of Part 4 Fire and Life Safety of NBC 2005: C.1.13 Town Gas/ LPG supply pipes Where gas pipes are run in buildings, the same shall be run in separate shafts exclusively for this purpose and these shall be on external walls, away from the staircases. There shall be no	: Not proposed. If Town gas / LPG supply systems is proposed in the building, a separate NOC has to be obtained from this department.

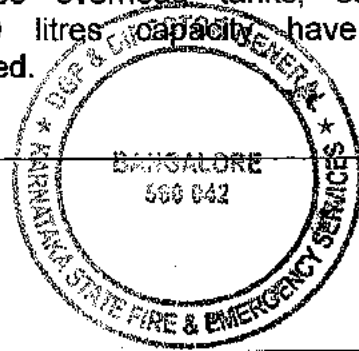
	interconnection of this shaft with the rest of the floors. LPG distribution pipes shall always be below the false ceiling. The length of these pipes shall be as short as possible. In the case of kitchen cooking range area, apart from providing hood, covering the entire cooking range, the exhaust system should be designed to take care of 30 m ³ per minute per m ² of hood protected area. It should have grease filters using metallic grill to trap oil vapours escaping into the fume hood.		
14.	Service ducts and shafts As per clause Annex-C of Part 4 Fire and Life Safety of NBC 2005: C-1.9 Service Ducts/Shafts a) Service ducts and shafts shall be enclosed by walls of 2 h and doors of 1 h, fire rating. All such ducts/shafts shall be properly sealed and fire stopped at all floor levels. b) A vent opening at the top of the service shaft shall be provided having between one-fourth and one-half of the area of the shaft.	:	Proposed to provide service ducts and provision has been made to seal the ducts at each floor level.
15.	Escape Lighting and Exit Signage's.	:	Not indicated. Direction in which the inmates should have to move in the event of any emergency have to be indicated in the corridor / passage on each floor as a guide during evacuation. These marking should be in luminous paint.
D. The builder should arrange for the following fire fighting and evacuation measures:-			
1.	Electric Power Supply.	:	03 standby generators, 02 of 750 KVA and another of 1010 KAV capacity have been installed at basement-1 to all the emergency provisions in the building.
2.	Down comer system. As per Part 4 Fire and Life Safety of NBC 2005 Table 23		Not required.



	down comer shall be provided for every 1000 sq.mtrs. built up area, Apartment Houses (A-4) 1. For 15 m and above but not exceeding 35 m in height. The down comer should be of 100 mm internal diameter and G.I. 'C' class pipe. From each down comer single hydrant outlet should be provided		
3.	Wet riser system. As per Part 4 Fire and Life Safety of NBC 2005 Table 23 (6) wet riser cum down comer shall be provided for every 1000 sq.mtrs. built up area, Apartment Houses (A-4) 1. 35 m and above in height. The riser should be of 100 mm internal diameter and G.I. 'C' class pipe (up to 45 mtrs in height). From each riser single hydrant outlet should be provided at each landing. The riser should be of 150 mm internal diameter and G.I. 'C' class pipe (above 45 mtrs in height). From each riser double hydrant outlet should be provided at each landing.	:	04 Nos wet riser cum down comer systems have been provided, Each of 150 mm. internal diameter and made of G.I. 'C' Class pipe with Double outlet landing valves.
4.	Hose reel hose system. As per Part 4 Fire and Life Safety of NBC 2005 Table 23 (4) First Aid Hose reel shall be provided for, Apartment Houses (A-4) 1. Should be provided in all the buildings irrespective of height and irrespective of occupancy. Hose reel hose of minimum 19 mm size of adequate length to reach the farthest point of each floor should be provided with a shut off branch having a nozzle of 5 mm size. The hose reel hose should be	:	Hose reel hose of 30.00 mtrs. length with drum and 2 Nos. delivery hose pipes, each of 15 mtrs. length with gunmetal branch pipe will be provided inside the hose cabinet near each outlet.



	connected at each landing by means of an adaptor. Adequate BIS marked re-inforced rubber lined delivery hoses of 63 mm size to reach the farthest point of the floor / setbacks from the system should be provided with a branch pipe near each hydrant outlet in a proper box to protect it from withering.		
5.	Yard hydrant system. As per Part 4 Fire and Life Safety of NBC 2005 Table 23 (8)Yard hydrant shall be provided for, Apartment Houses (A-4) 1. 45 m and above in height. At least two fire service inlets to boost the water in the riser directly from the mobile pump should also be provided. These inlets should be located at an easily accessible position, preferable near the entry point to the premises.	:	08 Nos yard hydrant system have been provided all around the building and also 01 No 4 way & 01 No 2 way fire service inlets have been provided near the entry point to the premises
6.	Underground static water storage tank combined capacity for wet riser, yard hydrant and sprinklers per set of pumps. As per Part 4 Fire and Life Safety of NBC 2005 Table 23 (12) Underground Static Water Storage Tank Combined Capacity for Wet Riser, Yard hydrant and Sprinklers per set of Pumps shall be provided for Apartment Houses (A-4) 1. Above 35 m but not exceeding 60 m. In height – 75,000 lts. 2. Above 60 m in height. – 100000 lts.	:	An underground tank of 2,50,000 litres capacity for have been provided for wet riser cum down comer system.
7.	Terrace tank As per Part 4 Fire and Life Safety of NBC 2005 Table 23(13) Terrace Tank Over Respective	:	04 Nos overhead tanks, each of 25,000 litres capacity have been provided.



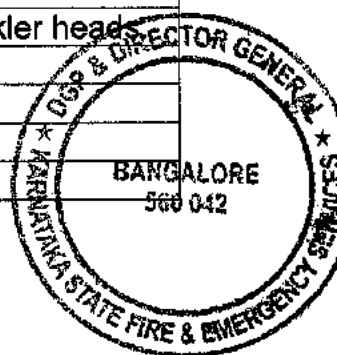
Tower Terrace shall be provided for Apartment Houses (A-4) 1. Less than 15 m in height 5000 (5000) (Note 4 : Additional value given in parenthesis shall be added if basement area exceeds 200 m²) 2. 15 m and above but not exceeding 35 m in height 25,000 3. Above 35 m but not exceeding 45 m in height 5000 (5000) (Note 4 : Additional value given in parenthesis shall be added if basement area exceeds 200 m²) 4. Above 45 m in height but not exceeding 60 m in height 10,000 5. Above 60 m in height 25,000	
8. Pump near underground static water storage tank (fire pump) with minimum pressure of 3.5 kg/cm² at terrace level. As per Part 4 Fire and Life Safety of NBC 2005 Table 23 (14) Pump near underground static water storage tank (Fire pump) with minimum pressure of 3.5 kg/cm² at remotest location. Apartment Houses (A-4) 1. Above 35 m but not exceeding 45 m in height (Note 19 : One electric and one diesel pump of capacity 1 620 l/min and one electric pump of capacity 180 l/min.) 2. Above 45 m in height but not exceeding 60 m in height (Note 20 : One electric and one diesel pump of capacity 2 280 l/min and one electric pump of capacity 180 l/min) Above 60 m in height (Note 20 : Two electric and one diesel pump of capacity 2 280 l/min and one electric pump of capacity 180 l/min)	: 02 electrically driven pump & one diesel driven pump, each capable of delivering 2280 litres of water per minute at 0.3N/mm² pressure and an jockey pump, capable of delivering 180 litres of water per minute have been provided in the building.



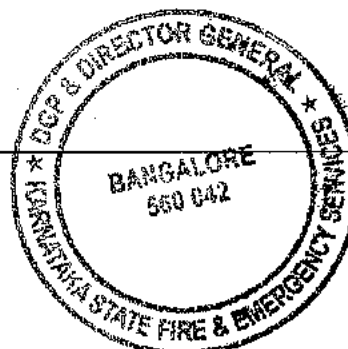
9.	Pumps at the Terrace Tank level with Minimum Pressure of 2.0 kg/cm². As per Part 4 Fire and Life Safety of NBC 2005 Table 23 (14) pumps at the Terrace tank level with Minimum Pressure of 3.5 kg/cm² shall be provided for, Apartment Houses (A-4) 1. Less than 15 m in height 450 (450) (Note 4: Additional value given in parenthesis shall be added if basement area exceeds 200 m².) 15 m and above but not exceeding 35 m in height 900	Not required.
10.	Manually operated fire alarm system. As per Part 4 Fire and Life Safety of NBC 2005 Table 23 (10) Manually operated Electric Fire alarm system is required. Apartment Houses (A-4) 1. 15 m and above in height. Manually operated electrical fire alarm system should be installed with call boxes located near each staircase landing of each building. The call boxes should be of 'break glass' type, where the call is transmitted automatically to the control room when the glass of the system is broken. This system should also be connected to an alternative source of power supply (diesel generator). The call boxes should be so installed that their location can be easily noticed from either direction and should be at a height of one meter from the floor level.	Proposed to provide manually operated alarm system with call point near each staircase landing at each floor of each wing and its control panel at ground floor.



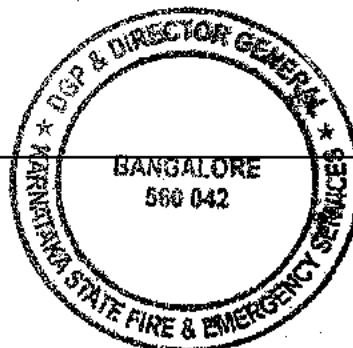
11.	Automatic fire detection system and alarm system. As per Part 4 Fire and Life Safety of NBC 2005 Table 23(11) Automatic Detection and Alarm System. Apartment Houses (A-4). 1. Above 60 m in height.	:	Recommended to provided automatic fire detection system with smoke detectors heads as below:- <table><tr><th>Floor</th><th>Smoke detectors</th><th>Heat detectors.</th></tr><tr><td>Basement-3</td><td>08</td><td>03</td></tr><tr><td>Basement-2</td><td>08</td><td>--</td></tr><tr><td>Basement-1</td><td>08</td><td>09</td></tr><tr><td>Ground floor</td><td>63</td><td>09</td></tr><tr><td>1st floor</td><td>66</td><td>07</td></tr><tr><td>2nd, 8th, 18th, 20th, 24th & 26th floor</td><td>63 on each floor</td><td>07 on each floor</td></tr><tr><td>3rd, 9th, 19th, 21st, 25th & 27th floor</td><td>61 on each floor</td><td>07 on each floor</td></tr><tr><td>4th, 5th, 6th, 7th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 22nd, 23rd, 28th & 29th floor</td><td>65 on each floor</td><td>07 on each floor</td></tr><tr><td>30th floor</td><td>30</td><td>03</td></tr><tr><td>Terrace floors</td><td>07</td><td>---</td></tr></table>	Floor	Smoke detectors	Heat detectors.	Basement-3	08	03	Basement-2	08	--	Basement-1	08	09	Ground floor	63	09	1 st floor	66	07	2 nd , 8 th , 18 th , 20 th , 24 th & 26 th floor	63 on each floor	07 on each floor	3 rd , 9 th , 19 th , 21 st , 25 th & 27 th floor	61 on each floor	07 on each floor	4 th , 5 th , 6 th , 7 th , 10 th , 11 th , 12 th , 13 th , 14 th , 15 th , 16 th , 17 th , 22 nd , 23 rd , 28 th & 29 th floor	65 on each floor	07 on each floor	30 th floor	30	03	Terrace floors	07	---
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12.	Public Address System: A system of two way talk back speaker with push to talk speakers to be provided at every staircase or firemen telephone to be provided at every staircase. Necessary console & amplifier with micro phone to be provided at ground floor in fire command center.	:	Proposed to provide Public Address System with two way communication facility near each staircase landing at each floor of each wing and with its console at ground floor.																																	
13.	Automatic sprinkler system. Automatic Sprinkler System — A system of water pipes fitted with sprinkler heads at suitable intervals and heights and designed to actuate automatically, control and extinguish a fire by the discharge of water.	:	Proposed to provide automatic sprinkler system with sprinkler heads as mention below:- <table><tr><th>Floor</th><th>Sprinkler heads</th></tr><tr><td>Basement-3</td><td>771</td></tr><tr><td>Basement-2</td><td>751</td></tr><tr><td>Basement-1</td><td>744</td></tr><tr><td>Ground floor</td><td>506</td></tr></table>	Floor	Sprinkler heads	Basement-3	771	Basement-2	751	Basement-1	744	Ground floor	506																							
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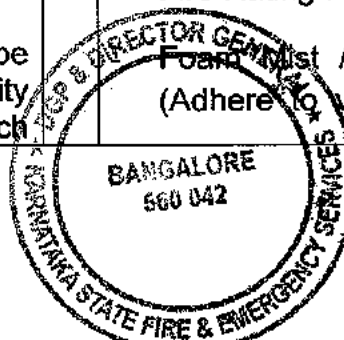
As per Part 4 Fire and Life Safety of NBC 2005 Table 23 (9) Automatic Sprinkler system. Apartment Houses (A-4). 1. Upto 35 m in height. (Note 2: Required to be installed in basement if area of basement exceeds 200 m²) 2. Above 35 m but not exceeding 45 m in height. (Note 2: Required to be installed in basement if area of basement exceeds 200 m² and Note 8: To be installed in basement. If basement provided is used for car parking and area thereof exceeds 750 m² then the sprinklers shall be fed water from both underground static water storage tank and terrace tank) 3. 45 m and above in height.		<table border="1"> <tr> <td>1st, 2nd, 18th, 20th, 24th & 26th floor</td> <td>230 on each floor</td> </tr> <tr> <td>3rd, 9th, 19th, 21st, 25th & 27th floor</td> <td>232 on each floor.</td> </tr> <tr> <td>4th, 5th, 6th, 7th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 22nd, 23rd, 28th & 29th floor</td> <td>234 on each floor.</td> </tr> <tr> <td>30th floor</td> <td>157</td> </tr> </table>	1 st , 2 nd , 18 th , 20 th , 24 th & 26 th floor	230 on each floor	3 rd , 9 th , 19 th , 21 st , 25 th & 27 th floor	232 on each floor.	4 th , 5 th , 6 th , 7 th , 10 th , 11 th , 12 th , 13 th , 14 th , 15 th , 16 th , 17 th , 22 nd , 23 rd , 28 th & 29 th floor	234 on each floor.	30 th floor	157
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30 th floor	157									
14. Refuge area. As per Part 4 Fire and Life Safety of NBC 2005 Annex C-1.11 Refuge Area Provisions contained in 4.12.3 shall apply for all buildings except multi-family dwellings, refuge area of not less than 15 m² shall be provided on the external walls. Residential flats in multi-storied building with balcony, need not be provided with refuge area, however flats without balcony shall provide refuge area as given above. 4.12.3 For buildings more than 24 m in height, refuge area of 15 m² or an area equivalent to 0.3 m² per person to accommodate the occupants of two consecutive floors, whichever is higher, shall be provided as under: The refuge area shall be provided on the periphery of the floor or preferably on a cantilever	:	As the building is already been constructed, at this stage not able to provide refuge area, hence not proposed in the revised drawings.								



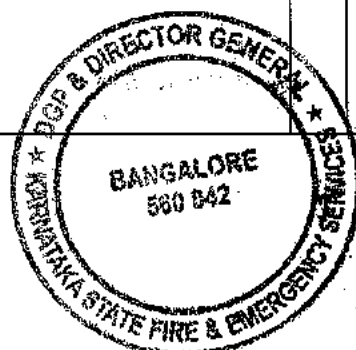
	projection and open to air at least on one side protected with suitable railings. a) For floors above 24 m and Up to 39 m -One refuge area on the floor immediately above 24 m. b) For floors above 39 m — One refuge area on the floor immediately above 39 m and so on after every 15 m. Refuge area provided in excess of the requirements shall be counted towards FAR.	
15.	Fire Command Centre. As per Part 4 Fire and Life Safety of NBC 2005 Annex C-5 FIRE CONTROL ROOM For apartment buildings with a height of 30 m and above, there shall be a control room on the entrance floor of the building with communication system (suitable public address system) to all floors and facilities for receiving the message from different floors. Details of all floor plans along with the details of fire fighting equipment and installations shall be maintained in the fire control room. The fire control room shall also have facilities to detect the fire on any floor through indicator boards connection; fire detection and alarm systems on all floors. The fire staff in charge of the fire control room shall be responsible for the maintenance of the various services and fire fighting equipment and installations in co-ordination with security, electrical and civil staff of the building.	Not proposed in Drawings, Fire Command Centre should be provided As per Part 4 Fire and Life Safety of NBC 2005 Annex C-5 FIRE CONTROL ROOM
16.	Fire Safety Plan. As per Part 4 Fire and Life Safety of NBC 2005 Annex E-9.10 Fire Safety Plan In planning, evaluate the individual floor layouts, the population of floors, the number and kinds of exits, the zoning of the floor by	Not indicated. FIRE SAFETY PLAN should be provide as per Clause 4.11 D-5 Fire and Life Safety of NBC



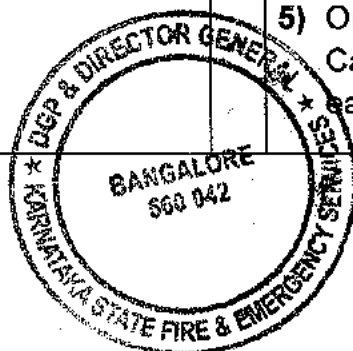
	area and occupants. Determine the movement of traffic by the most expeditious route to an appropriate exit and alternative route for each zone, since under fire conditions one or more exits may not be usable. This format is to be used in the preparation of the Fire Safety Plan. Nothing contained in this Fire Safety Plan format is to be construed as all inclusive. All rules and other requirements are to be fully complied with.	
17.	Fire extinguishers. As per Part 4 Fire and Life Safety of NBC 2005 Table 23 (3) Fire extinguishers shall be provided for, Apartment Houses (A-4) 1. One ABC powder extinguishers of 6 kgs. Capacity for every 8 cars at parking areas should be provided. 2. One CO₂ extinguishers of 4.5 kgs. Capacity should be provided near the entrance to the electrical room. 3. One Mechanical Foam extinguishers of 9 litres capacity & one ABC powder extinguishers of 6 kgs. Capacity should be provided near the transformer. 4. One Mechanical foam extinguishers of 9 litres capacity and one ABC powder extinguishers of 6 kgs. Capacity should be provided near the diesel generator. 5. One CO₂ extinguishers of 2 kgs. Capacity should be provided inside each lift machine room. 6. One Co₂ extinguishers of 2 kgs. Capacity should be provided inside each kitchen. 7. One Water Mist type extinguishers of 4 litres capacity should be kept near each	As proposed Fire extinguishers at following suitable places should be provided. 1) One ABC powder extinguishers of 6 kgs. and 9Litres capacity Portable Hand held "Water Mist & CAFs" fire extinguishers – Jet & spray (combination) Capacity for every 8 cars at parking areas should be provided. - As per IS-15683 / EN3-7 / NFPA-10 (Design & Construction) - Suppression Technology: NFPA 750 & NFPA 11 - Minimum Lancing Distance : Jet – 30Feet or more. - Minimum Lancing Distance : Spray– 10Feet or more - Spraying Angle 60° - Class – A, B, LPG Fires and Live Electrical Fire below 1000Volts (Test certificate to be submitted) - Fire Rating A: 21A or more - Fire Rating B: 144B or more Foam / Pressurised bubbles (Adhere to vertical and Horizontal



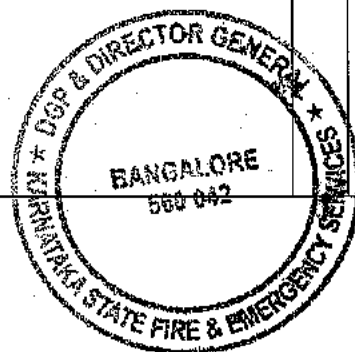
staircase landing at each floor. All the extinguishers suggested above should be with B.I.S. markings and should be located at an easily accessible position without obstructing the normal passage and maintained periodically.	surfaces, bubbles should retain for a minimum period of 20Minutes) - Foam Expansion minimum 1:10 or more 2) One CO₂ extinguishers of 4.5 kgs. Capacity should be provided near the entrance to the electrical room. 3) One 9 Litres capacity Portable Hand held "Water Mist & CAFs" fire extinguishers – Jet / spray type (Combination) and One ABC powder extinguishers of 6kgs. Capacity should be provided near transformer. - As per IS-15683 / EN3-7 / NFPA-10 (Design & Construction) - Suppression Technology: NFPA 750 & NFPA 11 - Minimum Lancing Distance : Jet – 30Feet or more - Minimum Lancing Distance : Spray– 10Feet or more - Spraying Angle 60° - Class – A, B, LPG Fires and Live Electrical Fire below 1000Volts (Test certificate to be submitted) - Fire Rating A: 21A or more - Fire Rating B: 144B or more - Foam Mist / Pressurised bubbles (Adhere to vertical and Horizontal surfaces, bubbles should retain for a minimum period of 20Minutes) - Foam Expansion minimum 1:10 or more and one ABC powder extinguishers of 6 kgs. Capacity
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		should be provided near the diesel generator. 4) One 9Litres capacity Portable Hand held "Water Mist & CAFs" fire extinguishers – Jet / spray type (Combination) and One ABC powder extinguishers of 6kgs. Capacity should be provided near the diesel generator. - As per IS-15683 / EN3-7 / NFPA-10 (Design & Construction) - Suppression Technology: NFPA 750 & NFPA 11 - Minimum Lancing Distance : Jet – 30Feet or more - Minimum Lancing Distance : Spray– 10Feet or more - Spraying Angle 60° - Class – A, B, LPG Fires and Live Electrical Fire below 1000Volts (Test certificate to be submitted) - Fire Rating A: 21A or more - Fire Rating B: 144B or more - Foam Mist / Pressurised bubbles (Adhere to vertical and Horizontal surfaces, bubbles should retain for a minimum period of 20Minutes) - Foam Expansion minimum 1:10 or more and one ABC powder extinguishers of 6 kgs. Capacity should be provided near the diesel generator. 5) One CO₂ extinguishers of 2 Kgs. Capacity should be provided inside each lift machine room.
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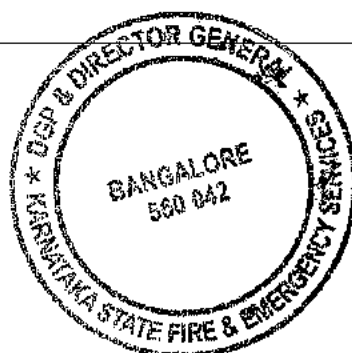
		6) One CO₂ extinguishers of 2 Kgs. Capacity or 4Liters Capacity spray / Mist Type Wet Chemical for Kitchen for Individual houses - As per IS-15683 / EN3-7 / NFPA 10 - Minimum Lancing Distance – 12Feet or more - Class – A - Class – K / F - Live Electrical Fire below 1000Volts (Test certificate to be submitted) 7) 9Litres capacity Portable Hand held "Water Mist & CAFs" fire extinguishers – Jet / spray type (combination) should be kept in alternative staircase landing at each floor. - As per IS-15683 / EN3-7 / NFPA-10 (Design & Construction) - Suppression Technology: NFPA 750 & NFPA 11 - Minimum Lancing Distance : Jet – 30Feet or more - Minimum Lancing Distance : Spray– 10Feet or more - Spraying Angle 60° - Class – A, B, LPG Fires and Live Electrical Fire below 1000Volts (Test certificate to be submitted) - Fire Rating A: 21A or more - Fire Rating B: 144B or more - Foam Mist / Pressurised bubbles (Adhere to vertical and Horizontal
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		surfaces, bubbles should retain for a minimum period of 20Minutes) - Foam Expansion minimum 1:10 or more All the extinguishers suggested above should be with B.I.S. markings and should be located at an easily accessible position without obstructing the normal passage and maintained periodically.
18.	Training.	40% of the occupants/employees of each block should be got trained in fire prevention & fire fighting at the R.A. Mundkur Fire and Emergency Services Academy, Bannerghatta Road, Bangalore-560 029, within 6 months from the date of occupation of each Block. For this purpose before approaching this department for final clearance certificate, the applicant should give an undertaking in the form of an affidavit regarding the maintenance of the fire prevention and fire fighting measures suggested above and arranging training of 40% of the occupants in fire prevention and fire fighting within 6 months from the date of issue of the Clearance Certificate.

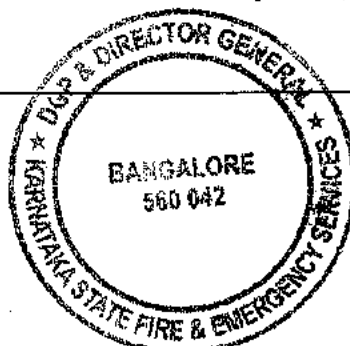
NOTE :

1. The above mentioned requirements are indicative and not exhaustive. All other requirements of National Building Code not specifically mentioned above shall also be complied with mandatorily.
2. The additional requirements for irrespective occupancy buildings as enumerated in NBC 2016 shall be incorporated in order to comply with this NOC.



General :-

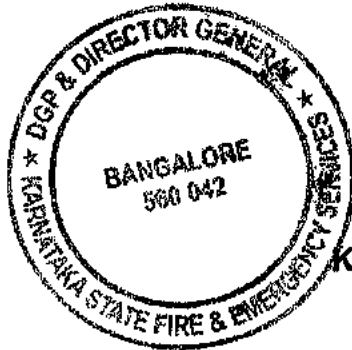
- 1) All the fire prevention, fire fighting and evacuation measures suggested/ recommended in B, C and D shall be strictly adhered to adopted.
- 2) Hazardous materials such as petroleum products, explosives, chemicals etc. should not be stored on any floor.
- 3) Refuse dumps or storage should not be permitted in any of the floors.
- 4) Liquefied petroleum gas should not be stored in the building, except limited quantity required for each kitchen.
- 5) Plan and occupancy should not be changed without informing the Fire & Emergency Services and without taking clearance.
- 6) The occupancy certificates should not be issued without obtaining the clearance certificate from the Fire and Emergency Services department as per Chapter 3.16 (v) of the Zoning Regulation 2007 of the Bangalore Development Authority.
- 7) Such reasonable changes/modifications as may be found necessary, after the building is fully constructed, will have to be agreed to be done by the builder/occupants of the building.
- 8) All the metal fittings of down comer system and all the extinguishers suggested above should have B.I.S markings.
- 9) Apart from the above the Building shall be constructed by following all the rules & conditions stipulated in Part-III & IV of NBC & local zoning regulations strictly, failing which the NOC issued will not be valid.
- 10) The above mentioned requirements are indicative and not exhaustive. All other requirements of National Building Code not specifically mentioned above shall also be complied with mandatorily.
- 11) This NOC is issued from the Fire Prevention and Fire Fighting point of view Karnataka State Fire & Emergency Services Department is not responsible for the ownership of the land, its location and other disputes, which may arise in due course.



Subject to the strict adherence to the conditions laid down as above, issue of NOC for the construction of Revised N.O.C. for the constructed high rise residential building, i.e Tower-2 with 5 wings, i.e Wing-A,B,C,D & E comprising of 03 Basements, Ground & 30 upper floors at Property No.14-1-1, No.1, Industrial Suburb, Ward No. 67, Nagapura, Opp Vivekananda college, Dr.Rajkumar road, Bangalore may please be considered.

➤ All requirements as per National Building Code – 2005 will have to be complied with mandatorily.

Draft approved by the
D.G.P & D.G.



Yours faithfully,


✓ Director General of Police

and Director General,

Karnataka State Fire & Emergency Services.

Copy to:

1. The Authorized Signatory, M/s Palladium constructions Pvt Ltd, No.1, Dr.Rajkumar Road, Opp. Sheraton Hotel, Rajajinagar, Bangalore-560010
2. The chief Fire Officer, Bangalore west Zone, Bangalore.