Office of the Director General of Police
Commandant General, Home Guards &
Director of Civil Defence and
Director General Karnataka State Fire &
Emergency Services
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No. GBC(1) 255/2015

-08-2015

To

The Commissioner,
Bangalore Development Authority,
T.Chowdaiah Road,
Bangalore – 560 020.

Sir,

Sub: Issue of No Objection Certificate for the construction of High Rise Residential Building with 3 Blocks i.e. Block-1, 2 & 3 at Site No. 101-112, Shanti Nagar House Building, Co-operative Society Layout (SHBCS), Srinivagilu Amanikere, Begur Hobli, Bangalore– reg.

Ref: Letter dated 18-05-2015 of the Authorized Signatory, M/s. G. Corp. Spaces Private Limited, 21/19, Craig Park Layout, Off. M.G. Road,Bangalore-560 001.

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With reference to the letter of the Authorized Signatory, M/s.G.Corp Spaces Private Limited, cited above, the Regional Fire Officer, Bangalore East Range of this department has inspected the site of proposed High Rise Residential Building with 3 Blocks i.e. Block-1, 2 & 3 – interconnected at 4th & 6th floor at Site No. 101-112, Shanti Nagar House Building, Co-operative Society Layout (SHBCS), Srinivagilu Amanikere, Begur Hobli, Bangalore on 30-05-2015 with reference to the drawings, submitted by the applicant and has furnished the details as follows :-

A. Details of the premises.

1. Address of the premises : Site No. 101-112,
Shanti Nagar House Building,
Co-operative Society Layout (SHBCS),
Srinivagilu Amanikere,
Begur Hobli,
Bangalore.

2. Number of Buildings	:	One Building with 3 Blocks i.e. Block-1, 2 & 3 – interconnected at 4th & 6th floor.
3. Number of floors		
Block-1 & 3	:	Each of 2 common basements, ground & 14 upper floors.
Block-2	:	2 common basements, ground & 8 upper floors.
4. Type of Occupancy	:	Residential.
5. Floor wise details of the occupancy :-		
Block-1, 2 & 3		
Common Basement-2	:	For parking 246 Cars (123 mechanical parking) & Two wheelers and 1 Pump Room.
Common Basement -1	:	For parking 216 Cars (108 mechanical parking), 2 Electrical Rooms & 1 D.G. Rooms.
Block – 1		
Ground floor	:	5 flats.
1st floor to 6th floor	:	7 flats on each floor x 6 floors = 42 flats.
7th floor	:	5 flats & Pool plant.
8th floor	:	4 flats.
9th floor	:	4 flats.
10th floor to 13th floor	:	8 flats on each floor x 4 floors = 32 flats.
14 floor	:	6 flats.
Block-2		
Ground floor	:	Party Hall & 2 Stores.
1st floor	:	2 flats.
2nd floor to 7th floor	:	6 flats on each floor x 6 floors = 36 flats.
8th floor	:	Gym.

Block-3

Ground floor	:	5 flats.
1st floor to 7th floor	:	7 flats on each floor x 7 floors = 49 flats.
8th floor	:	4 flats.
9th floor	:	4 flats.
10th floor to 13th floor	:	8 flats on each floor x 4 floors = 32 flats.
14th floor	:	4 flats.
	Total :	**234 flats.**

6. Height of the Building

Block-1 & 3	:	Each of 49.95 mtrs.
Block-2	:	32.55 mtrs.

7. Site Area : 10,069.49 Sq. mtrs.

8. Built-up area of each floor :-

Block-1, 2 & 3

Common Basement-2	:	6,012.32 Sq. mtrs.
Common Basement-1	:	5,886.52 Sq. mtrs.

Block-1

Ground floor	:	1,015.98 Sq. mtrs.
1st floor	:	1,127.55 Sq. mtrs.
2nd floor	:	1,168.72 Sq. mtrs.
3rd floor	:	1,326.20 Sq. mtrs.
4th floor	:	1,177.06 Sq. mtrs.

5th floor	:	1,166.25 Sq. mtrs.
6th floor	:	1,326.20 Sq. mtrs.
7th floor	:	881.18Sq. mtrs.
8th floor	:	702.84 Sq. mtrs.
9th floor	:	735.72 Sq. mtrs.
10th floor	:	1,255.57 Sq. mtrs.
11th floor	:	1,364.12 Sq. mtrs.
12th floor	:	1,302.22 Sq. mtrs.
13th floor	:	1,246.18 Sq. mtrs.
14th floor	:	1,434.40 Sq. mtrs.
Block-2		
Ground floor	:	396.41 Sq. mtrs.
1st floor	:	404.49 Sq. mtrs.
2nd floor to 7th floor (906.33 Sq. mtrs. on each floor x 6 floors)	:	5,437.98 Sq. mtrs.
8th floor	:	322.82 Sq. mtrs.
Block-3		
Ground floor	:	1,015.98 Sq. mtrs.
1st floor	:	1,127.55 Sq. mtrs.
2nd floor	:	1,168.72 Sq. mtrs.
3rd floor	:	1,326.20 Sq. mtrs.
4th floor	:	1,177.06 Sq. mtrs.
5th floor	:	1,166.25 Sq. mtrs.

6th floor	:	1,326.20 Sq. mtrs.
7th floor	:	1,172.42 Sq. mtrs.
8th floor	:	702.84Sq. mtrs.
9th floor	:	735.72 Sq. mtrs.
10th floor	:	1,255.57 Sq. mtrs.
11th floor	:	1,364.12 Sq. mtrs.
12th floor	:	1,302.22 Sq. mtrs.
13th floor	:	1,246.18 Sq. mtrs.
14th floor	:	817.20 Sq. mtrs.
9. Total Built-up area	:	52,594.96 Sq. mtrs.

10. Surrounding properties:-

East	:	Vacant land.
West	:	9.20 mtrs. wide Road.
North	:	18.21 mtrs. wide Road.
South	:	12.11 mtrs. wide Road.

B. The plan shows the following structural details indicating the fire prevention, fire fighting and evacuation measures. These measures are considered adequate as follows:-

Details (1)		Existing (2)
1. Width of the road to which the building abuts and whether it is hard surfaced to carry the weight of 45,000 kgs.	:	The premises is abutting 18.21 mtrs. wide Road, located on the northern side,12.11 mtrs. wide road, located on the southern side & 9.20 mtrs. wide Road, located on the western side. All the 3 roads are hardened to carry the weight of 45,000 kgs.

(1)		(2)
2. Number of entrances and width of each	:	Proposed to provide 2 entrances, each of 6.00 mtrs. width from 18.21 mtrs. wide Road, located on the northern side.
3. Height clearance over the entrance	:	No arch or any other constructions has been proposed over the entrances.

4. Width of open space (Setbacks):-

Block-1, 2 & 3 – interconnected at 4th & 6th floor

Front (North)	:	12.00 mtrs.
Rear (South)	:	12.00 mtrs.
Side (East)	:	Minimum 12.00 mtrs.
Side (West)	:	12.00 mtrs.

The height of the building is 49.95 mtrs. for which the required setback is minimum 14.00 mtrs. all around the Building, where as the builder has intended to claim TDR provision vide DRC No.003239, Folio No.110 (4,328.45 sq.mtrs.) dated 22-08-2014, 003188, Folio No.108 (4417.17 sq.mtrs.) dated 06-01-2015, No.003012, Folio No.101 (6137.74 sq.mtrs.) and No.002724 Folio No.89 (256.50 sq.mtrs.) dated 30-01-2015 (total built up area of 15139.86 Sq.mtrs., out of which the builder utilized only 15,104.10 sq.mtrs.).

5. Arrangement for parking the Cars	:	Provision has been made to park 246 Cars (123 mechanical parking) at Common Basement-2 parking area and 216 cars (208 mechanical parking) at common Basement-1 parking area.

Proposed to provide 2 ramps for each Basement for the cars and two wheelers to reach each basement parking area.

(1)		(2)
6. Number of Staircases	:	6 (2 in each block).
7. Location of the staircases	:	All the staircases have been designed to abut one of its side to the wall and are terminated at ground floor level. 7 separate staircases have been proposed to reach the common Basement-2 parking area from the ground floor. Further provision has been made to enclose all the staircases at each floor level.
8. Staircase size:-		
(a)Width of the staircases	:	Each of 1.20 mtrs.
(b) Width of treads	:	30 cms.
(c) Height of riser	:	15 cms.
(d) Number of risers in a flight	:	11 risers per flight
(e) Height of hand rails	:	1.00 mtr. As proposed, the hand rails should be provided at a height of 1.00 mtr. The gap between two verticals should not exceed 15 Cms.
(f) Head room clearance	:	2.40 mtrs.
9. Travel distance from the farthest point and from dead-end of the corridor to the staircase.	:	Maximum 33.00 mtrs. from the farthest point to staircases at Basements. Maximum 32.00 mtrs. from the farthest point maximum 14.00 mtrs. from the dead end of the corridor to the staircases in upper floors. Increased travel distance both from farthest point and from dead end of the corridor to the staircases are acceptable as all the floors are proposed to be covered with automatic sprinkler system.

(1)		(2)
10. Number of lifts and capacity		
Block-1	:	5 lifts, 4 Passenger lifts, each of 15 passengers capacity & one service lift of 20 passengers capacity.
Block-2	:	4 lifts, 3 Passenger lifts, each of 15 passengers capacity & one service lift of 20 passengers capacity.
Block-3	:	5 lifts, 4 Passenger lifts, each of 15 passengers capacity & one service lift of 20 passengers capacity).

C. While constructing the building the following fire safety measures should be incorporated:-

Details (1)	Existing (2)	Recommendation (3)
1. Condition of the open space.	--	The required setbacks for the height of 49.95 mtrs. is 14.00 mtrs. all around the building. The Builder has intend to claim the TDR and setbacks allowed is minimum 12.00 mtrs. around the Building. Out of the allowed setbacks all around the Building, setbacks to an extent of minimum 8.00 mtrs. from the Building line should have a RCC slab of 200 mm thickness to carry the load of 45,000 kgs., being the weight of a fire unit. This driveway all around the building, should always be kept free and clear. It would be advantageous to the Builders and the users to elevate this portion by a few inches and even provide for a different color, so that people are aware that this is the emergency route for fire fighting vehicles, ambulances etc. The total setbacks shall be at even level without any structure and projections up to a height of 5.50 mtrs. These setbacks shall be always kept free from any construction or utilization like garden, landscaping parking etc.

(1)	(2)	(3)
2. Structural materials.	---	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.
3. Design of the staircases.	Not indicated	All the staircases should be constructed with non-combustible materials and should be completely enclosed at each landing to prevent smoke and fire traveling from the lower floors to the upper floors. Enclosures to staircases should be provided with self-closing smoke-stopping swing-door, fitted with door closing devices at the exit to the lobby. These doors should have at least two hours fire resistance capacity. The staircase area should be without glazing or glass brick walls to avoid reflections. Any area of dwelling or storage should not open directly to the staircase.
4. Specification of lift.	Not indicated	The brick walls, enclosing the lift shafts, should be of 90 mm thickness and have a fire resistance of not less than two hours. Shaft should have permanent vent of not less than 0.2 sq.mtrs. clear area, immediately under the machine room. Lift motor rooms should be preferably located at the top of the shaft and separated by the enclosing wall of shaft or by the floor of the machine room. Landing doors of lift enclosures should open into a ventilated lobby having one hour fire resistance. Lift car doors should be of metal finish, operating automatically and should have fire resistance capacity of one hour. Exit from the lift lobby should be through a self closing smoke stopping door of 15 mm thickness, having one hour fire resistance capacity. This is to prevent smoke and fire traveling from the lower floors to the upper floors. The lift machine rooms should be separate and no other machinery should be installed therein.

(1)	(2)	(3)
		Each lift should be connected to an alternative source of power (generator). Grounding switches at the ground floor level to enable the Fire & Emergency Services personnel to ground all the lift cars and use them as 'FIRE LIFT' in an emergency should be provided. All the lifts, extended up to the Basement-2, shall be terminated at the ground floor level or the lift lobby at the basement level shall be enclosed and pressurized with positive pressure.
5. Service ducts/shafts.	---	Service ducts should be enclosed by walls of 100 mm. thickness to have at least two hours fire resistance capacity. A vent, opening at the top of the service shafts, should be provided between one fourth and half of the area of the shafts. The electrical distribution cables and wiring should be laid in a separate duct. All the ducts should be sealed at every alternate floor with non-combustible metal doors having at least two hours fire resistance capacity. Water mains, telephone lines, intercom lines or any other service lines should not be laid in the duct, meant for electric cables. The inspection panel doors and any other opening to the shafts should be provided with airtight doors of at least two hours fire resistance capacity.
6. Basements Ventilation	Not indicated	Each basement shall be separately ventilated. Vents with cross-sectional area (aggregate) not less than 2.5% of the floor area spread evenly round the perimeter of the basement shall be provided in the form of grills, or breakable stall board 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 extracts may be terminated at ground level with stall board or payment lights as before, but ducts to convey fresh

(1)	(2)	(3)
		air to the basement floor level have to be laid. Stall board 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 our near the opening. In multi–storey basements, intake ducts may serve all basement level, 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. 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 detector or sprinklers, if installed, but shall have a considerably superior performance compared to the standard units. It shall also be an arrangement to start it manually. Mechanical extractors shall have an internal locking arrangement, so that extractors shall continue to operate and supply fan shall stop automatically with the actuation of fire detectors. Mechanical extractors shall be designed to permit 30 air changes per hour in case of fire or distress call. Mechanical extractors shall have an alternative source of supply. Ventilating ducts shall be integrated with the structure and made out of brick masonry or reinforced cement concretes as far as possible and when this duct crosses the transformer area or electrical switchboard, fire dampers shall be provided. Use of basements for kitchens working on gas fuel shall not be permitted, unless air conditioned. 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.

(1)	(2)	(3)
7. Escape route.	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:-

Details (1)	Existing (2)	Recommendation (3)
1. Electric power supply.	---	Circuits for water pumps, lifts, staircase lighting in the building should be by separate line and independently connected so that they can be operated by one switch installed the ground floor. Dual operated switches should be installed in the service room for terminating the standby supply. As proposed 3 standby generators, 2 each of 380 KVA capacity & another of 500 KVA capacity shall be installed at common Basement-1 to supply alternative power for staircase lighting, corridor lighting, fire fighting systems, lifts etc., in the event of failure of electricity supply, in the building.
2. Wet riser-cum-down comer.	Proposed to provide 6 Wet riser-cum-down comer systems (2 in each Block).	As proposed 6 wet riser-cum-down comer systems (2 in each block), near the staircases shall be provided. Each riser should be of 100 mm internal diameter and of G.I. 'C' class pipe. From each riser single hydrant outlets should be provided at each landing. 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 connected at each landing by means of an adaptor. A minimum of 2 external hydrants at a suitable locations (adjacent to the compound wall) with adequate space between them should also be provided from the each system. Adequate B.I.S. marked reinforced rubber lined delivery hoses of 63 mm size to reach the farthest point of the floor/ setbacks from the system should be provided with

(1)	(2)	(3)
		a branch pipe near each hydrant outlet in a proper box to protect it from withering. 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, preferably near the entry point to the premises. Each Wet riser-cum-down comer system should be connected to an overhead tank of 10,000 litres capacity and an underground tank of 75,000 litres capacity. One diesel driven pump and one electrically driven pump, each capable of delivering 2280 litres of water per minute at 0.3N/mm2 pressure and an jockey pump with a capacity of 180 LPM shall be installed near the combined underground tank at rate of 2 set of pumps for every 4 risers (total 2 set of pumps). The impeller of all the pumps should be made of bronze.
3. Manually operated fire alarm system	Proposed to provide manually operated electrical fire alarm system with call boxes near each staircase landing.	Manually operated electrical fire alarm system should be installed with call boxes located near each staircase landing of the 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.
4. Automatic fire detection system.	Proposed to provide automatic fire detection system with 4 smoke detector heads at ground floor & 2 detector heads at 8th floor of Block-2 club house.	As proposed automatic smoke detection system shall be provided with its console at ground floor level.

(1)	(2)	(3)
5. Automatic sprinkler system.	Proposed to provide automatic sprinkler system with sprinkler heads as indicated below:-	Adequate. Separate water for sprinkler system to use 10% of the sprinkler system for about 30 minutes shall be provided.

Floor	Sprinkler heads
Basement-2	593
Basement-1	543
Ground floor	189
1st floor	154
2nd floor	190
3rd floor	200
4th floor	190
5th floor	190
6th floor	202
7th floor	179
8th floor	117
9th floor	96
10th floor	148
11th floor	148
12th floor	156
13th floor	148
14th floor	116

6. Public address system.	Proposed to provide public address system with two way communication facility.	As proposed a public address system with two way communication facility should be provided at each floor near each staircase landing with its console at the control room, located on the ground floor.
7. Assembly Area	Not marked.	An area at an appropriate place in the allowed/ required setbacks shall be earmarked with a proper board as 'ASSEMBLY AREA' for the occupants to assemble after evacuation during practice drill and in an emergency.
8. Portable fire extinguishers.	Proposed to provide suitable type of portable fire extinguishers as per the requirements.	a) One ABC Powder extinguisher of 6 kgs. capacity for every 8 cars at each basement parking area.

(1)	(2)	(3)
		b) One ABC extinguisher of 2 kgs. capacity should be provided near the entrance to each main switch board room, inside each lift machine room and inside each kitchen. c) One ABC Powder extinguisher of 6 kgs. capacity should be provided near the transformer, if installed and near the entrance to the D.G. Room. d) One ABC Powder extinguisher of 6 Kgs. capacity should be kept near each staircase landing on every floor of each Block. e) 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.
9. Fire safety plan.	---	A Fire safety plan for preventing and extinguishing any accidental fire in the building and action to be taken by the occupants in case of such fire should be prepared in advance and got approved by the Director, Karnataka Fire & Emergency Services. The fire safety plan, so approved, should contain the telephone numbers of the nearest Fire Control i.e., 101, 22971500, 22971550 and 22971600. The plan should be distributed to all the occupants and employees in the building and should be displayed on every floor. A Fire Command Station should be established in the lobby of the building on the entrance floor and such command station should be adequately illuminated. The main control of the public address system and fire alarm system should be at the Fire Command Station. A Fire Safety Director should be nominated for the building. He should conduct fire and evacuation drills periodically. He should nominate a Fire Warden for each floor and ensure that no individual of the building does anything which causes or stimulates an accidental fire and in case of lapses

(1)	(2)	(3)
		in respect of fire prevention measures, he should take action as deemed fit to ensure the safety from the fire point of view. If the action is beyond his capacity he should inform the Fire & Emergency Services department.
11. Training	Not indicated	40% of the occupant/employees should be got trained in fire prevention & fire fighting at the R.A.Mundkur Fire & Emergency Services Academy, Bannerghatta Road, Bangalore – 560029 within 6 months from the date of occupation of the building. 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.

E. General:-

1) All the fire prevention, fire fighting and evacuation measures suggested / recommended in B, C & D shall be strictly adhered to adopted.

2) Hazardous materials such as petroleum products, explosives, chemicals etc. should not be stored on any floor of the building.

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 & 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 & Emergency Services department as per clause 3.16(v) of 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) **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, if any.**

Subject to the strict adherence to the conditions laid down as above, issue of license for the construction of High Rise Residential Building with 3 Blocks i.e. Block-1, 2 & 3 – interconnected at 4th & 6th floor at Site No.101-112, Shanti Nagar House Building, Co-operative Society Layout (SHBCS), Srinivagilu Amanikere, Begur Hobli, Bangalore may please be considered.

Yours faithfully,

Director General of Police
and Director General,
Karnataka Fire & Emergency Services.

Copy to:
1) The Authorized Signatory, M/s. G.Corp. Spaces Private Limited, 21/19, Craig Park Layout, Off. M.G. Road,Bangalore-560 001.
2) The Regional Fire Officer, Bangalore East Range, Bangalore.