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Commandant General, Home Guards &
Director of Civil Defence and
Director General Karnataka State Fire &
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No. GBC(1)449 /2013

21-06-2014

To

The Commissioner,
Bruhat Bangalore Mahanagara Palike,
N.R. Square,
Bangalore – 560 002.

Sir,

Sub: Issue of No Objection Certificate for the construction of High Rise
Mixed Occupancy (Residential & Shopping) Building at Sy.No.14,
13/1, 11/1 & 15, Khatha No.415, K R Puram, Bangalore – reg.

Ref: Letter dated 04-09-2013 of the Partner, M/s.Monarch, Monarch
Plaza, 4th Floor, No.54, Brigade Road, Bangalore - 560 001.

With reference to the letter of the Partner, M/s.Monarch, cited above, the Regional Fire Officer, Bangalore West Range of this department has inspected the site of proposed High Rise Mixed Occupancy (Residential and Shopping) Building comprising 3 Blocks i.e. Block-A, B & C – joined together, Block- A & C, each comprising of 2 Common Basements, Common Ground & 24 upper floors & Block-B, comprising of 2 common basements, common ground floor & 25 upper floors at Sy.No.14, 13/1, 11/1 & 15, Khatha No.415, K R Puram Hobli, Bangalore on 27-02-2014 with reference to the drawings submitted by the applicant and has furnished the details as follows :-

A. Details of the premises.

- | | |
|------------------------------------|--|
| 1. Name & Address of the premises. | Sy. No. 14,13/1, 11/1 &15
Khatha No. 415,
K.R.Puram Hobli,
Bangalore. |
| 2. Number of Buildings | One Building with 3 Blocks i.e. Block-A, B & C -
joined together-at 5 th , 9 th , 13 th , 17 th , 21 st and 25 th
floors |

3. Number of floors

Block -A & C : Each with 2 Common Basements, Common Ground & 24 Upper floors.

Block- B : 2 Common Basements, Common Ground & 25 Upper floors.

4. Type of occupancy : Mixed Occupancy.

5. Floor wise details of the Occupancy

Block A,B & C
Common Basement-2 : For parking 249 Cars, 2 DG room & 1 Pump Room.

Common Basement-1 : For parking 285 cars & 3 Store rooms.

Common Ground floor : 12 shops, 1 Hypers market, 4 Electrical room & parking 25 cars.

Common 1st floor : 10 flats, 4 shops, 1 open Terrace food court, 1 library, 1 pool room, 1 table tennis room, 1 chess room, 3 Health club rooms, 1 Gym room, 1 Yoga Room & 1 Conferance room.

Block-A
2nd floor to 24th floor : 11 flats on each floor x 23rd floor =253 flats.

Block-B
2nd floor to 25th floor : 3 flats on each floor x 24th floor =72 flats.

Block-C
2nd floor to 24th floor : 7 flats on each floor x 23 floor=161 flats.

Total : 486 flats.

6. Height of the Building

Block-A & C : Each with 79.00 mtrs.

Block-B : 82.00 mtrs.



7. Site Area : 19,135.33 Sq. mtrs.

8. Built-up area of each floor :-

Block A, B & C

Common Basement-2 : 13,250.08 Sq.mtrs.

Common Basement-1 : 12,564.48 Sq.mtrs.

Common Ground floor : 6,904.81 Sq. mtrs.

Common 1st floor : 4,650.91 Sq. mtrs.

Block -A

2nd floor to 24th floor : 30,990.66 Sq. mtrs.
(1,347.42 Sq. mtrs on each floor
x 23 floors)

Block-B

2nd floor to 25th floor : 14,548.08 Sq. mtrs.
(606.17 Sq. mtrs. on each floor
x 24 floors)

Block-C

2nd floor to 24th floor : 18,959.13 Sq. mtrs.
(824.31 Sq. mtrs. on each floor
x 23 floors)

9. Total Built-up area : 1,01,868.15 Sq. mtrs.

10. Surrounding properties :-

East : Private Property (Vacant Land)

West : 30.00 mtrs wide old madras road (NH4)

North : Private Property (Vacant Land)

South : Private Property (Vacant Land)



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 45,000kgs.	The premises is abutting 30.00 mtrs. wide Old Madras Road, located on the Western side. The road is hardended to carry the weight of 45,000kgs.
2. Number of entrances and width of each	Proposed to provide 4 entrances, 2 each of 9.00 mtrs. & another 2 each of 8.00 mtrs. width from Old Madras Road, located on the Western side.
3. Height clearance over the entrance	No arch or any other constructions have been provided over the entrances.
4. Width of open space (Setbacks):-	
<u>Block -A, B & C - joined together</u>	
Front (West)	Minimum 16.00 mtrs.
Rear (East)	Minimum 16.00 mtrs.
Side (North)	Minimum 16.00 mtrs.
Side (South)	Minimum 16.00 mtrs.
5. Arrangement for parking the Cars	Provision has been made to park 349 cars at Basement-2 parking area, 285 cars at Basement-1 parking area, 25 cars at ground floor parking area & 125 cars on the open space available around the building after leaving 8.00 mtrs. wide driveway from the building line. Proposed to provide 4 ramps for each basement for the the vehicles to reach each basement parking area.
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 extended wall and are terminated at ground floor level. 11 separate staircases have been proposed to reach the basement-2 parking area from ground floor. Provision has been made to enclose all the staircases at each floor level.



(1)	(2)
8. Staircase size:-	
(a) Width of the staircases	: Each of 1.50 mtrs.
(b) Width of treads	: Each of 30 Cms.
(c) Height of riser	: Each of 15 Cms.
(d) Number of risers in a flight	: Maximum 12 risers per flight.
(e) Height of hand rails	: 1 mtr. As proposed, the hand rails should be provided at a height of 1 mtr. The gap between two verticals should not exceed 15 cms.
(f) Head room clearance	: Minimum 2.4 mtrs.
9. Travel distance from the farthest point and from dead-end of the corridor to the staircase.	: Maximum 31.00 mtrs. from the farthest point to staircases in Basements.
Block-A	: Maximum 33.00 mtrs. from farthest point maximum 16.00 mtrs. from the dead end of the corridor to the staircases.
Block-B	: Maximum 24.00 mtrs. from farthest point maximum 7.00 mtrs. from the dead end of the corridor to the staircases.
Block-C	: Maximum 18.00 mtrs. from farthest point maximum 7.00 mtrs. from the dead end of the corridor to the staircases.
	: Increased travel distance both from farthest point and from dead end of the corridor are acceptable as the entire building is proposed to be covered with automatic sprinkler system.
10. Number of lifts capacity	
Block-A	: 6 (4 passanger lifts & 2 service lifts)
Block-B	: 3 (2 passanger lifts & 1 service lifts)
Block-C	: 4 (3 passanger lifts & 1 service lifts)
	: Passengers lifts : Each of 8 passengers capacity
	: Service lifts : Each of 1,000 kgs. 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.	--	Out of the required and allowed setbacks of minimum 16.00 mtrs. all around the Building, the setbacks to an extent of 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 colour, 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 5.00 mtrs. These setbacks shall be always kept free from any construction or utilization like garden, landscaping parking etc.
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.



(1)	(2)	(3)
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. 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 2nd basement, 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.



(1)	(2)	(3)
		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 pavement lights as before, but ducts to convey fresh 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 or 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.



(1)	(2)	(3)
		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 concrete 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.
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 2 standby generators, each of 1000 KVA capacity shall be installed at basement-2 to supply alternative power for staircase lighting, corridor lighting, fire fighting systems and lifts etc., in the event of failure of electricity supply, in the building.



(1)	(2)	(3)
2. Wet riser-cum-Down comer.	Proposed to provide 2 Wet Riser-cum- Down comer systems in Block A, 5 wet riser-cum-down comer system in Block-B, (Out of 5 wet riser, 4 wet riser will be terminated at 1 st floor (commercial area) & remaining 1 wet riser will be extended upto the terrace (Residential area) of Block -B, one wet riser -cum-down comer system in Block-C(Total 8 wet risers).	As proposed 2 wet riser-cum-down comer systems in Block-A, 5 wet riser-cum-down comer systems in Block-B, (out of 5 wet riser-cum-down comer systems, 4 will be terminated at 1 st floor (commercial area) & remaining 1wet riser will be extended up to the terrace (Residential area) of Block-B, one wet riser-cum-down comer system in Block-C(total 8 wet riser-cum-down comer systems). The each riser will be of 150 mm internal diameter and G.I 'C' class pipe. From each riser double headed 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 to be 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 a branch pipe near each hydrant outlet (both internal and external) in a proper box to protect it from withering. 1 no, 4 way 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 systems of commercial Block should be connected to an overhead tank of 20,000 ltrs. capacity and an underground tank of 1,00,000 litres. Capacity. One electrically driven pump and one dieel driven pump, each capable of delivering 2280 ltrs. 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.



(1)	(2)	(3)																					
		Similarly each wet riser-cum-down comer systems of Residential Blocks should be connected to an overhead tank of 25,000 ltrs. capacity and an underground tank of 1,00,000 litres. capacity. 2 electrically driven pumps and one diesel driven pump, each capable of delivering 2280 ltrs. of water per minute at 0.3N/mm ² pressure and an jockey pump with a capacity of 180 LPM shall be installed near the combined underground tank. The impeller of 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 at each floor	Manually operated electrical fire alarm system should be installed with call boxes located near each staircase landing of the each floor. 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 as indicated below :	As proposed automatic smoke detection system shall be provided with its console at ground floor level.																					
<table border="1"> <thead> <tr> <th>Floor</th><th>Smoke detector heads</th><th>Heat detector heads</th></tr> </thead> <tbody> <tr> <td>Common Ground floor</td><td>85</td><td>-</td></tr> <tr> <td>Common 1st floor</td><td>90</td><td>-</td></tr> <tr> <td>Block A,B & C</td><td></td><td></td></tr> <tr> <td>2nd floor</td><td>95</td><td>21</td></tr> <tr> <td>3rd to 24th floor</td><td>97 on each floor</td><td>21 on each floor</td></tr> <tr> <td>25th floor</td><td>20</td><td>03</td></tr> </tbody> </table>			Floor	Smoke detector heads	Heat detector heads	Common Ground floor	85	-	Common 1 st floor	90	-	Block A,B & C			2 nd floor	95	21	3 rd to 24 th floor	97 on each floor	21 on each floor	25 th floor	20	03
Floor	Smoke detector heads	Heat detector heads																					
Common Ground floor	85	-																					
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Block A,B & C																							
2 nd floor	95	21																					
3 rd to 24 th floor	97 on each floor	21 on each floor																					
25 th floor	20	03																					
5. Automatic sprinkler system.	Proposed to provide automatic sprinkler system 1009 sprinkler heads at Common basement -2 parking area, 952 sprinkler heads at	Adequate. Separate water and pump for sprinkler system to use 10% of the sprinkler system for about 30 minutes shall be provided.																					



(1)	(2)	(3)
	Common basement-1 parking area, 634 sprinkler heads at common ground floor, 385 sprinklers heads at Common 1 st floor of Block-A, B, C & Commercial area, 166 sprinklers heads at 2 nd floor, 164 sprinklers heads at each floor i.e. from 3 rd floor to 24 th floor & 30 sprinkler heads at 25 th floor of Block-A, B & C.	
6. Automatic Water Curtains/Automatic Fire & Smoke Control Curtains.	Not indicated.	Automatic water curtains/ Automatic Fire and Smoke control curtains shall be provided in each floor at the rate of two per floor to create smoke stop and fire barrier compartmentation in the event of fire accident, their by safeguarding elevator area, lobby area, stair area etc. It shall be of minimum 2 hours rating.
7. 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 of each Block.
8. 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.
9. 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 and 2 fire buckets filled with clean dry fine sand should be provided for every 8 Cars at each Basement parking area. 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 of Residential Block.



(1)	(2)	(3)
		c) One ABC Powder extinguisher of 6 kgs. capacity should be provided near the transformer and near the entrance to the D.G. Room. d) One ABC Powder extinguisher of 6kgs. capacity should be kept near each staircase landing on every floor of each Block and commercial area. e) Scale of suitable extinguishers for shopping area shall be collected before approaching the department for final clearance, after finalizing the utilization of each area. f) 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.
10. Fire safety plan.	—	A Fire safety plan for preventing and extinguishing any accidental fire in each 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 each 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.



(1)	(2)	(3)
		A Fire Safety Director should be nominated for each 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 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.
10. Fire Officer	---	A qualified Fire Officer with experience of not less than 3 years should appointed as a care taker for the Commercial area. He should be entrusted with the responsibility of maintaining the systems suggested above, to layout fire orders and fire operational plans and to liaise with the local Fire & Emergency Services. The Fire Officer should be appointed before approaching the department for final clearance and should be present at the site at the time of final inspection for issuing clearance certificate.
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 -560 029 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.
12. Helipad.	Proposed to provide one helipad on the terrace of Block-B.	As proposed one Helipad on the terrace of Block-B shall be provided with all fire prevention and fire fighting measures as per the specification.



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 of Residential Block.
- 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 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 wet riser system and all the extinguishers suggested above should have B.I.S markings.

Subject to the strict adherence to the conditions laid down as above, issue of license for the construction of High Rise Mixed Occupancy (Residential and Shopping) Building comprising 3 Blocks i.e. Block-A, B & C – joined together, Block- A & C, each comprising of 2 Common Basements, Common Ground & 24 upper floors & Block-B, comprising of 2 common basements, common ground floor & 25 upper floors at Sy.No.14, 13/1, 11/1 & 15, Khatha No.415, K R Puram Hobli, Bangalore may please be considered.

Yours faithfully,



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

Copy to :-

- 1) The Partner, M/s. Monarch, 4th Floor, Monarch Plaza, No.54, Brigade Road, Bangalore – 560 001.
- 2) The Regional Fire Officer, Bangalore West Range, Bangalore.