GOVERNMENT OF MAHARASHTRA

No.MFS/51/2015/197
Tel No. 2667 7555
Fax No.2666 0287

OFFICE OF THE FIRE ADVISER
Maharashtra Fire Service Academy
Vidyanagri, Hans Bhugra Marg,
Santacruz (East), Mumbai – 400 098
Date: 31/03/2015

M/s. Kishen Kumar J Kedia,
Survey No. 25, Hissa No. 7,
Village-Ambivali, Khalapur,
Raigad

Sub: Grant of "Provisional No-Objection Certificate" for your Proposed Residential Building on Survey No. 25, Hissa No. 7, Village-Ambivali, Khalapur, Raigad

Ref: Online Application NO: MFSKON0020710032015 Dated 10.03.2015

Dear Sir,

This has reference to the above, this office has **"No-Objection (Provisional)"** for your proposed Residential Building on above mentioned address.

The Plot area is **31,200.00 Sq. Mtrs** & the proposed built up area of Residential & Commercial Building is **34,363.71 Sq. Mtrs**. The area wise details of the constructions are as under:

Residential Building-

Sr. No	Floor	B/U area in Sq Mtrs	Occupant Load	Height of Build
01	Ground	8100.57	---	
02	1st floor	1924.72	154	
03	2nd floor	1862.72	149	
04	3rd floor	1862.72	149	
05	4th floor	1862.72	149	
06	5th floor	1862.72	149	
07	6th floor	1862.72	149	
08	7th floor	1862.72	149	
09	8th floor	1520.01	122	
10	9th floor	1862.72	149	
11	10th floor	1862.72	149	64.34 Mtrs
12	11th floor	1862.72	149	
13	`12th floor	1862.72	149	
14	13th floor	1520.04	122	
15	14th floor	1862.72	149	
16	15th floor	1862.72	149	
17	16th floor	1862.72	149	
18	17th floor	1862.72	149	
19	18th floor	1520.04	122	
20	19th floor	1862.72	149	
21	20th floor	1862.72	149	

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22	Staircase	3201.08	---	
23	Balcony	5154.48	---	
	Total Built up area	**52824.49 Sq Mtrs**	**2904**	

1. **This is the high rise building around the vicinity of New Mumbai & CIDCO Fire Service. Though, usually such type of approvals are not accorded for Municipal Area like Khalapur but then M/s. Garnet Construction Ltd has entered into agreement with M/s. Kishen Kumar J Kedia which will be setting up the Fire Station in the nearby vicinity as per the Terms & Conditions given by this Directorate in reference to Provisional No-Objection Certificate issued by this office vide No. MFS/51/2014/530 dated 14.11.2014 for their projects for rendering Fire Protection Service to this project also.**

The entities i.e
A) M/s. Garnet Construction Ltd
B) M/s. Kishen Kumar J Kedia

being different, we have taken security of both the entities individually for guarantee of providing services and by protecting the powers of the Directorate of Fire Service for due diligent enforcement in the interest of Fire & Life Safety of the occupants in the proposed buildings which shall be binding upon the developer. However, you shall be liable for any lapse thereof and responsible to provide necessary fire services as agreed upon.

This N.O.C. is valid subject to fulfillment of the following conditions: -
Provisions of Maharashtra Fire Prevention and Life Safety Measures Act, 2006

1. Under **Section 3** of **"Maharashtra Fire Prevention and Life Safety Measures Act, 2006"** (hereinafter referred to as "said Act"). The applicant (developer, owner, occupier by whatever name called) shall comply with all the Fire and Life Safety measures adhering to National Building Code of India, 2005 and as amended from time to time failing which it shall be treated as a violation of the said Act.

2. As per the provision as **under :- 10** of the said Act. No person other than the License Agency shall carry out the work of providing Fire Prevention and Life Safety Measures or performing such other related activities required to be carried out in any place or building or part thereof provided that,

   a. No Licensed Agency or any other person claiming to be such Licensed Agency shall give a certificate under **sub-section (3) of section 3** regarding the compliance of the fire prevention and life safety measures or maintenance thereof in good repair and efficient condition, without there being actual such compliance or maintenance.

   b. The names of the License Agencies approved by Directorate of Maharashtra is available in our website www.mahafireservice.gov.in

3. Though certain conditions are stipulated from the said Act and the National Building Code of India, it is obligatory on part of the applicant that is

developer, builder, occupier, owner, tenant, by what so ever named called to abide with the provisions of the said Act failing which it shall be actionable under the provisions of said act.

4. The plans of the building should be approved by The Concern Competent Authority.

5. The Occupancy certificate should be obtained from The Competent Authority. **The O.C. shall be issued subject to "Final No-Objection Certificate" from this Department.**

6. **Proper roads in the premises should be provided & marked on ground for easy mobility of the Fire Brigade Appliance as per the guidelines given in NBC-2005, should be kept free from obstructions all the time. The load bearing capacity of internal roads must be minimum 45Tones. The width of the road shall not be less than 9.0 Mtrs for easy maneuver of the fire engine. However, the marginal open space shall be seen in to by the concern competent authority of the building proposal department.**

7. All portable fire fighting equipments installed at various locations as per local hazard such as Co2-DCP, Foam, Firo buckets & it must be strictly confirming to relevant IS specification.

8. All the fire fighting equipments shall be well maintained and should be easily accessible in case of emergency.

9. Emergency Telephone numbers like **"Police", "Fire Brigade", "Hospital", "Doctors",** and **"Responsible persons of the complex"** should be displayed in security cabin & at other strategic locations.

10. It shall be ensured that security staff & every employee of the complex are trained in handling firefighting equipment & fire fighting.

11. Cautionary boards such as **"DANGER", "NO SMOKING", "EXIT", "FIRE ESCAPE", "EXTINGUISHER",** etc. should be displayed on the strategic location to guide the occupants in case of emergency. The signs should be of florescent type and should glow in darkness.

12. **In future if the said developer intends to go for any expansion, alteration, modification of any building an approval of this department must be obtained before commencing proposed construction.**

13. **It is necessary to obtained height clearance from Civil Aviation Authorities / Air force for the high rise building, wherever necessary.**
14. **The following active fire fighting and other systems should be provided for the safety of the <u>RESIDENTIAL BUILDING</u>**

Sr. No.	FIRE FIGHTING INSTALLATION	Requirements	Provision	Remarks
1.	**Portable Fire Extinguishers**	Required	**IS: 15683 & 2190**	
2.	Hose Reel	Required at prominent places.	In all staircases	On each floor in the Staircase landing for Fire Fighting. The first aid hose reel shall be connected directly to riser/down comer main and diameter of the hose reel shall not be less than 19mm **confirming to IS 884:1985**
3.	Yard Hydrant or Ring hydrant around the building	**Required**	At Various Locations.	Fire Brigade Inlet connection should be provided. Hydrant points should be provided with 2 Nos. of Delivery Hose confirming to **IS-14933-2001** along with Standard Branch (Universal) confirming to IS-2871. **The distance between 2 Hydrants should not be more than 45 mtrs. The guidelines should be followed as per IS 3844:1989.**
4.	Wet Riser	**Required**	In all staircases	Required to provide in the Staircase and Fire Escape Staircase. Landing of Valve should be installed **confirming to IS:5290.**
5.	Manually Operated Fire Alarm System	**Required**	At Various strategic location	Manually Operated Fire Alarm should be provided; it should be connected to alternate power supply.
6.	Underground Static Storage Tank	**Required 2,00,000 liters.**		This water storage should be used exclusively for Fire Fighting for each Building.
7.	Terrace Level Tank	**Required 20,000 Ltrs.**		On each Terrace/ each building
8.	Fire Pump	**2 No. 4500 lit /min electrical driven main pump. (one main + one sprinkler)** **1 No. 4500 lit /min Diesel driven pump.** **2 No.180 lit /min Electrical Jockey pump. (one main + one sprinkler)** **1 No. 900 lit /min electric driven (Booster Pump)**		Fire Fighting pumps shall be well maintained. Fire pumps shall be centrifugal pumps only. Booster pump should be provided on terrace. Fire pump, Jockey Pump and Booster pump separate set shall be provided for each tank /wing.

207.03.15

K. R. Hatyal
Sr. Inspector /OSDfire

Sr. No.	FIRE FIGHTING INSTALLATION	Requirements	Provision	Remarks
9.	Fire Brigade Connection For Static Water Tank and For Hydrant System	Required at the Main Gate		
10	Sign Indicators for all fire safety, safe evacuation of occupants in case of emergency signs	Required at Prominent Places.	Sign indicators should provided at prominent places as per the guidelines given in **IS:9457 for Safety colour and Safety IS:12349 for Fire Protection Safety Signs IS:12407 for Graphics symbols for Fire Protection Plan.**	
11	**Sprinkler System**	Required on Each floor including flats for Residential Bldg	**Sprinkler system should be provided on each floor. Guidelines are given in IS 15105 Design and installation of Fixed Automatic sprinkler fire Extinguishing system**	
12	**Automatic Detection System**	Required on Each floor including flats for Residential Bldg	**Automatic Detection system should be provided. Standards and guidelines given in IS 11360 1985 specification for Smoke Detectors for use in Automatic Electrical Fire Alarm system. <u>Detection system for Cable Trench should be provided.</u> Heat Detectors should be provided for Canteen Area as per the standards and guidelines given IS-2175-1988 specification for Heat sensitive Fire Detectors for use in Automatic Fire Alarm System.**	
13	**Manual Call Point**	**Required**	Manual Call Point should be provided at prominent places.	

<u>NOTE</u>: Fix fire fighting installations such as risers, hydrant connections, hose reels etc. shall be provided in separate shaft having opening at floor level with Glass cabinet having locking arrangement to avoid theft and damage.

<u>STAIRCASES</u>

The height of proposed **residential building is 64.34 Mtrs**. As This buildings are above 15 Mtrs and hence as per NBC Part IV-4.6.2 they shall have minimum two enclosed type staircases, From that 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.

GUIDELINES FOR INTERNAL STAIRWAYS as per NBC 2005

a) Stairways shall be constructed of non-combustible materials throughout. Hollow combustible construction shall not be permitted. Width of Staircase should not be less than 1.5 M. No Gas piping shall be laid down in the stairway.

b) Internal staircase shall be constructed as a self-contained unit with at least one side adjacent to external walls and shall be completely enclosed.

c) Internal staircase shall not be arranged around lift shaft unless the later is entirely enclosed by material of fire resistance rating as that for type of construction itself.

d) The access to main staircase shall be gained through at least half-an-hour fire resisting automatic closing doors, placed in the enclosing walls of the staircase. They shall be swing type doors opening in the direction of the escape.

e) No living space, store or other space, involving fire risk, shall open directly in to staircase.

f) The external exit door of a staircase enclosure at ground level shall open directly to the open space or should be accessible without passing through any door other than a door provided to form a draught lobby.

g) The exit signs with arrows indicating the escape routes shall be provided at a height of 1.5 m. from the floor level on the wall and shall painted with fluorescent paint. All exit signs should be flush with the wall and so designed that no mechanical damage to them can result from the removing furniture, material or any other equipment.

h) Exits shall be so located that it will not be necessary to travel more than 22.5 Mtrs for Residential Building . You shall also ensure that travel distance is not more than 11.25 Mtrs from the dead end of Residential Building respectively from any point to reach the nearest exit.

STAIRCASE AND CORRIDOR LIGHTINGS:

a) The staircase and corridor lighting shall be on separate service and shall be independently connected so as it could be operated by one switch installation on the ground floor easily accessible to fire fighting staff at any time irrespective of the position of the individual control of the light points, if any.

b) Staircase and corridor lighting shall also be connected to alternate source of supply.

c) Suitable arrangements shall be made by installing double throw switches to ensure that the lighting installed in the staircase and the corridor do not get connected to the sources of supply simultaneously. Double throw switch shall be installed in the service room for terminating the stand by supply.

d) Emergency lights shall be provided in the staircase/corridor.

E) Passageway should be provided as per the guidelines given in National Building Code- 2005

STAIRCASE DESIGN REQUIREMENT:

1. The minimum headroom in a passage under the landing of a staircase and under the staircases shall be **2.2 Mtrs.**
2. Access to main staircase shall be through a fire / smoke check door of a minimum 2 hours fire resistance rating.
3. No living space, store or other fire risk shall open directly in to the staircases.
4. The main and external staircases shall be continuous from ground floor to the terrace level.
5. No electrical shafts, A/c ducts or gas pipe etc. shall pass through or open in the staircases. Lifts shall not open in staircases.

FIRE ESCAPE: (ENCLOSED TYPE) SHALL COMPLY THE FOLLOWING:

1. **Travel Distance should be maintained 22.5 M as per the guidelines given in NBC-2005. Exits and staircase guidelines should be followed as per National Building Code-2005**
2. **Fire escape constructed of M.S. angels, wood or glass is not permitted is not permitted.**
3. **Opening of the Fire Escape Staircase should be from outside.**
4. Fire Escape staircase should be enclosed type. These should always be kept in sound operable condition .
5. Exits door shall open outwards, that is away from the room, but shall not obstruct the travel along any exit.
6. Fire Escape Staircase shall be directly connected to the ground.
7. Entrance to the Fire Staircase shall be separate and remote from the internal staircase.
8. Care shall be taken to ensure that no wall opening or window opens on to or close to Fire Escape Stairs.
9. The route to the external staircase shall be free of obstructions at all times.
10. The Fire Escape stairs shall be constructed of non-combustible materials, and any doorway leading to it shall have the required fire resistance.
11. No Staircase, used as a fire escape, shall be inclined at an angel greater than 45^{0} from the horizontal.
12. **The width of the staircase. The other detailed provision for exits in accordance with National building code - 2005.**
13. Fire Staircase shall have straight flight not less than 150 c.m. wide with 25 c.m. treads and risers not more than 19 c.m. The number of risers shall be limited to 15 per flight.
14. Handrails shall be of a height not less than 100 c.m. and not exceeding 120 c.m.

EXIT REQUIREMENT:

a. An exit may be doorway, corridor, Passageway(s) to an internal staircase, or external staircase, or to a verandah or terrace(s), which have access to the street, or to the roof of a building or a refuge area. An exit may also include a horizontal exit landing to an adjoining building at the same level.

b. Every exit, exit access or exit discharge shall be continuously maintained free of all obstructions or impediments to full use in the case of fire or other emergency.
c. Exits shall be clearly visible and the route to reach the exits shall be clearly marked and signs posted to guide the occupants of the floor concerned. Signs shall be illuminated and wired to an independent electric circuit on an alternative source of supply.
d. To prevent spread of fire and smoke, fire doors with 2 hours fire resistance shall be provided at appropriate places along the escape routes and particularly at the entrance to lift lobby and stair well where a 'funnel or flue effect' may be created inducing an upward spread of fire.
e. All exits shall provide continuous means of egress to the exterior of a building or to an exterior open spaces leading to the street.
f. Exits shall be so arranged that they may be reached without passing through another occupied unit.

GUIDELINES FOR REFUGE AREA :-

Refuge Area: For buildings more than **24 Mtrs.** in height, refuge area of **15 Sq. Mtrs.** or an area equivalent to **0.3 Sq. Mtrs.** per person to accommodate the occupants of two consecutive floors, whichever is higher shall be provided. The refuge area shall be provided on the periphery of the floor or **preferably on a cantilever projection & open to air at least on one side protected with suitable railings.**

A) For floors above 24 Mtrs. & up to 39 Mtrs. One refuge area on the floor immediately above 24 Mtrs.

B) For floors above 39 Mtrs. one refuge area on the floor immediately above 39 Mtrs. and so on after every 15 mtrs. Shall be provided.

C) The location of the Refuge Area should be such that it should be easily approachable from road side for carrying out rescue operation.

FIRE LIFT :

1. To enable fire services personnel to reach the upper floors with the minimum delay, one fire lift per **1200 Sq. Mtrs.** of floor area shall be provided and shall be available for the exclusive use of the fireman in an emergency.
2. The lift shall have a floor area of not less than **1.4 Sq. Mtrs.** It shall have loading capacity of not less than **545 Kg. (8 persons)** with automatic closing doors of minimum **0.8 Mtrs.** width.
3. The electric supply shall be on a separate service from electric supply mains in a building and the cables run in a safe route safe from fire, that is, within the lift shaft. Lights and fans in the elevators having wooden paneling or sheet steel construction shall be operated on 24 Volt 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 open able.

5. In case normal electric supply fails, it shall automatically trip over to alternate supply. Alternatively, the lift shall be so wired that in case of power failure it will come down to the ground level and 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 should become inoperative and the lift will be on car control only or on a priority device. When the switch is off, the lift will return to normal working.

7. The words **"Fire Lift"** shall be conspicuously displayed in fluorescent paint on the lift landing doors at each floor level. The speed of the fire lift shall be such that it can reach the top floor from ground level within **1 Min.**

LIFT ENCLOSURES : -

1. The walls enclosing lift shafts shall have a fire resistance of not less than **two** hours.

2. Shafts shall have permanent vents at the top not less than 1800 mm (0.2sq.m.) in clear area.

3. Lift motor room shall be preferably be sited at the top of the shaft and shall be separate from lift shafts by the enclosing wall of the shaft or by the floor of the motor room.

4. Landing doors in lift enclosures shall open in the ventilated corridor/lobby & shall have fire resistance of not less than one hour.

5. The number of lifts in one lift bank shall not exceed four Lift car doors shall have fire resistance of not less than one hour.

0. Exit from the lift lobby shall be through a self-closing smoke top door of half hour fire resistance.

7. The lift machine room shall be separate and no other machinery shall be installed therein.

8. Grounding switch/switches at ground floor level to enable the fire service personnel to ground the lift car/cars in emergency shall be provided.

Pressurization of Staircases (Protected Escape Routes):

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 vertical leakages opening in the compartment enclosure such as cracks, opening 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 routs is of great importance.

2. Pressurization is method adopted for protected escape routs against ingress of smoke, especially in high rise buildings. In pressurization, air is injected into the staircases, lobbies or corridors, to raise their pressures 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.

3. The pressure difference for staircases shall be as under

Building Height	Pressure Difference	
	Reduced Operation (Stage 1 of a 2 Stage System)	Emergency Operations (Stage 2 of a 2 Stage System or Single Stage System)
15 m or Above	15 Pa	50 Pa

If possible , the same levels shall be used for lobbies and corridors, but levels slightly lower may be used for these if desired. The difference in pressurization levels between staircase and lobbies (or corridors) shall not be greater then 5 Pa.

4. Pressurization system may be of two types :-

   A) Single Stage , designed for operation only in event of an emergency, and

   B) Two stage; where normally a level of pressurization is maintained in the protected escape routes and an increases level of pressurization can be brought into operation in an emergency.

SERVICE DUCTS / REFUGE CHUTE :

1. Service duct shall be enclosed by walls and door, if any, of two hours fire rating. If ducts are larger than 10 Sq. Meters the floor should seal them, but provided suitable opening for the pipes to pass through, with the gaps sealed.

2. A vent opening at the top of the service shaft shall be provided between one fourth and one half of the area of the shaft. Refuge chutes shall have an outlet at least of wall of non combustible material with fire resistance of not less than two hours. They shall not be located within the staircase enclosure or service shafts or air conditioning shafts. Inspection panel and door shall be tight fitting with one hour fire resistance; the chutes should be as far away as possible from exits.
3. Refuge Chutes shall not be provided in staircase walls and A/C shaft etc.

TRANSFORMERS:

1. Transformers shall not be installed on upper floors.
2. The switchgears shall be housed in a separate room separated from the transformer bays by a fire-resisting wall with fire resistance of not less than four hours.
3. The transformers shall be protected by an automatic high-pressure water spray (emulsifier) system.
4. A tank of RCC construction of capacity capable of accommodating entire oil from the transformers shall be provided at lower level, to collect the oil from the catch pit to the tank shall be of non-combustible construction and shall be provided with a flame-arrestor.
5. No grass or shrubs shall be allowed to grow in transformer switchyard.
6. A barbed wired fencing of minimum 1.5m. Height shall be provided around transformer switchyard & the gate shall be provided for entrance.
7. The gate should be always locked & the keys should be kept with authorized / responsible person of the company.
8. **Danger/ No smoking** board shall be displayed at the entrance gate of transformer switchyard.

GUIDELINES FOR ELECTRICAL SERVICES:

1. The electric distribution cables/wiring shall be laid in separate duct. The duct shall be sealed at every floor with non-combustible materials having same fire resistance as that of the duct.
2. Water mains, telephone lines, intercom lines, gas pipes or any other service lines shall not be laid in the duct of electric cables.
3. Separate circuits for water pumps, lifts, staircase & corridor lighting shall be provided directly from the main switch gear panel and these circuits shall be laid in separate conduit pipes so that fire in one circuit will not affect the others.
4. The inspection panel doors and any other opening in the shaft shall be provided with airtight fire doors having the fire resistance of **not less than two hours.**
5. Medium & low voltage wiring running in shaft and within fall ceiling shall run in metal conduit.

6. An independent & well-ventilated service room shall be provided on the ground floor with direct access from outside or from the corridor for the

purpose of termination of electric supply. The doors provided for the service room shall have fire resistance of not less than two hours.

In addition to the above, all provision under the National Building Code of India-2005 shall be strictly adhered, also if any change in activity or Proposed expansion or Subletting of Plot, NOC from this department is essential.

As per the gross built-up area certificate given by **M/s. Kishen Kumar J Kedia** of the proposed construction having total gross built-up area of **34363.71 Sq Mtrs**. The fire protection fund fees as per Maharashtra Fire Prevention and Life Safety Measures Act, 2006, Section 25-Annexure-Part III was levied vide Demand Note No. MFS/52/2013/443 dated 24.03.2015 is paid by the applicant. The details of payment are as under:

As per Maharashtra Fire Prevention and Life Safety Measures Act, 2006, Section 25-Annexure-Part III, M/s. Kishen Kumar J Kedia has paid Fire Protection Fund Fees amounting to Rs. 6,33,900 /- (Rs. Six Lac Thirty Three Thousand Nine Hundred Only) vide to NEFT/RTGS UTR No. AXISF5089074401)

This is a "**Provisional No Objection Certificate".** After providing the above mentioned fire prevention and protection system and after compliance of above recommendations, inspection of the same will be carried out by this department & after satisfactory compliance "**Final No Objection Certificate**" will be issued.

The undersigned reserves right to amend any additional recommendations deemed fit during the stage wise inspection due to the statutory provisions amended from time to time and in the interest of the protection of the residential building.

Thanking you.

FIRE ADVISER TO THE GOVERNMENT OF MAHARASHTRA ★ सत्यमेव जयते

Yours faithfully,

31/3/15

(M.V. Deshmukh)
Fire Adviser
Maharashtra Fire Services