

GOVERNMENT OF MAHARASHTRA

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Directorate of Maharashtra Fire Service
Maharashtra Fire Service Academy
Vidyanagri, Hans Bhugra Marg,
Santacruz (East), Mumbai – 400 098

Date: 03.08.2017

M/s J.M.Rathi English School and Junior College,
Plot Bearing 19/1B, 19/2A, S No. 53/6A.
at Village-Roth, Tal/Dist-Raigad.

Sub:- NOC stipulating fire protection and fire fighting requirements for proposed construction of extension to the existing Educational building by M/s J.M.Rathi English school and Junior College at Plot Bearing 19/1B, 19/2A, S No. 53/6A at Village-Roth, Tal/Dist-Raigad

Ref : Online Application No.MFS/0217/17, Dated 27/03/17.

This is a proposal for proposed construction of extension to existing Educational building, Recreational Hall at above mentioned address. Total Plot area is **11055.00 Sq Mtrs** and Proposed built up area is **2103.93 Sq Mtrs**.

The area wise details of said institution are as under:

Sr No.	Structure	Gr floor	1 st floor	B/U area in sq mtrs	Height
1	Extn to east building	365.50	200.25	565.75	7.20
2	Admin Build	392.42	392.42	784.84	7.80
3	Recreation Hall	501.48	---	501.48	5.00
4	Extn to West Build	80.28	80.28	160.56	7.80
5	Canteen	91.30	---	91.30	4.20
Total	1430.98	672.93	2103.93		

Observation & Remarks:

These are Educational Buildings namely Admin Building & Extension to existing school building comprising of ground + one upper floor with the height 7.80 mtrs from general level to terrace level. These Buildings area provided with 01 enclosed type staircase having flight width of 2.00 mtrs leading from ground floor to terrace floor level. The site abuts on 15 mtrs state highway & 12 mtrs wide internal service road.



In view of the above, as far as this Department is concerned, there would be no objection for construction of Educational Buildings namely Admin Building & Extension to existing school building comprising of ground + one upper floor with the height 7.80 mtrs from general level to terrace level, subject to satisfactory compliance of the following requirements, as per the details shown in the enclosed plan, signed in token of approval.

**This N.O.C is valid subject to fulfillment of the following condition: -
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, 2016 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 and marked on ground for easy mobility of the Fire Brigade Appliance as per the guidelines given in NBC-2016, & marginal spaces should be kept free from obstructions all the time. The load bearing capacity of internal roads shall not be less than 45 Tons. The width of the road shall not be less than 6.0 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, Fire buckets should be strictly as per and confirming to **IS: 15683**.
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 company" should be displayed in security cabin & at other strategic locations
10. It shall be ensured that security staff & every employee of the College are trained in handling fire fighting equipments & fire fighting.
11. "Fire Extinguisher", "Fire Bucket" "Danger" "No Smoking" caution boards should be displayed at the places easily visible from a distance.
12. The house keeping shall be well maintained within the entire complex building.
13. Fire buckets **06 Nos.** filled in with fine sand will have to be installed on strategic locations and should be easily accessible in case of emergency.
14. All electrical appliances/fittings and fixtures should be strictly flame proof.
15. No hot job should be permitted in the College building without prior permission from the concerned responsible personnel of the College.
16. In future if the said College intends to carry out any expansion, alteration, modification of any building, an approval of this department must be obtained before commencing proposed construction.

REQUIREMENT AND PROVISION: - The following Fire Protection System is required for the fire safety of the building:-

Sr. No.	FIRE FIGHTING INSTALLATION	Requirements	Provision	Remarks
1.	Portable Fire Extinguishers	Required	IS: 15683.	
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.	Down comer	Required in school building.	In all staircases	Required to provide in the Staircase and Fire Escape Staircase For buildings having height more than 15 mtrs. Landing of Valve should be installed confirming to IS:5290.
4.	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.
5.	Yard Hydrant or Ring hydrant around the building	Required	At Various strategic Locations.	Fire Brigade Inlet connection should be provided. Hydrant points should be provided with 2 Nos. of Delivery Hose confirming to IS-14933-2001

Sr. No.	FIRE FIGHTING INSTALLATION	Requirements	Provision	Remarks
				along with Standard Branch (Universal) confirming to IS-2871. The distance between 2 Hydrants should not be more than 45 mtrs. <u>The guidelines should be followed as per IS 3844:1989.</u>
6.	Underground Tank	Required 50,000 litres		This water storage should be used exclusively for Fire Fighting.
7.	Terrace Level Tank	Required 10,000 Ltrs.		On Terrace of each Building
8.	Automatic Sprinkler system	Required in Multipurpose halls and offices.		Sprinkler system should be provided on each floor. Guidelines are given in IS 15105 Design and installation of Fixed Automatic sprinkler fire Extinguishing system.
9.	Automatic Smoke Detection System	Required for Recreational hall and offices.		Automatic Smoke 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.
10	Fire Pump	02 No. 900 lpm electrical driven (Main + Standby) 01 No. 900 lpm Diesel driven (If alternate source of power supply not provided) 01 450 lpm.		Fire Fighting pumps shall be well maintained. Fire pumps shall be centrifugal pumps only.

Sr. No.	FIRE FIGHTING INSTALLATION	Requirements	Provision	Remarks
11	Fire Brigade Connection For Static Water Tank and For Hydrant System	Required at the Main Gate		
12	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.	
13	Manual Call Point	Required	Manual Call Point should be provided at prominent places.	

NOTE: 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.

ALTERNATE SOURCE OF POWER SUPPLY.

An alternate source of LV/HV supply from a separate substation or from a diesel generator with appropriate changeover over switch shall be provided for fire pumps, booster pump, sprinkler pump, jockey pump, staircase and corridor lighting circuits and fire alarm system, detection system, public address system, voice evacuation system etc. It shall be housed in separate cabin.

GUIDELINES FOR INTERNAL STAIRWAYS as per NBC 2016.

- 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 2.00 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.

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- g) The exit signs with arrows indicating the escape routes shall be provided at a height of 2.0 m. from the floor level on the wall and shall be 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 30 Mtrs. from any point to reach the nearest exit.**

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.

Escape route from flat to staircase :

- i) Corridor / Lift Lobby / Staircase at each floor level shall be ventilated to outside air, as shown on the plan.
- ii) Escape routes shall be maintained free from any obstruction at all times.

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

1. **Fire escape constructed of M.S. angles, wood or glass is not permitted is not permitted.**
2. **Opening of the Fire Escape Staircase should be from outside.**
3. Fire Escape staircase should be enclosed type. These should always be kept in sound operable condition.
4. Exits door shall open outwards, that is away from the room, but shall not obstruct the travel along any exit.
5. Fire Escape Staircase shall be directly connected to the ground.
6. Entrance to the Fire Staircase shall be separate and remote from the internal staircase.
7. Care shall be taken to ensure that no wall opening or window opens on to or close to Fire Escape Stairs.
8. The route to the external staircase shall be free of obstructions at all times.
9. The Fire Escape stairs shall be constructed of non-combustible materials, and any doorway leading to it shall have the required fire resistance.
10. No Staircase, used as a fire escape, shall be inclined at an angle greater than 45° from the horizontal.
11. **The width of the staircase. The other detailed provision for exits in accordance with National building code - 2005.**
12. Fire Staircase shall have straight flight not less than 200 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.
13. Handrails shall be of a height not less than 100 c.m. and not exceeding 120 c.m.

EXIT REQUIREMENT FOR CONFERENCE ROOM, CLASSROOMS:

1. Door width for Conference Room shall not be less than **2 Mtrs.**

2. Clear aisles not less than **1.2 Mtrs.** in width shall be formed at right angles to the line of seating in such number and manner that no seat shall be more than seats away from an aisle.
3. Rows of seats opening on to an aisle at one end only shall have not more than seven seats. Under the conditions, where all these aisles do not directly meet the exit door, cross-aisles shall be provided parallel to the line of seating so as to provide direct access to exit, provided not less than one cross aisles for every **10 rows** shall be required. The width of cross aisles shall be of minimum **1 Mtrs.** steps shall not be placed in aisles to overcome differences in levels unless the gradient exceeds 1:10.
4. Rows of seats between aisles shall have not more than 14 seats.
5. The spacing of rows of seats from back-to-back shall be neither less than 850 mm nor less than 700 mm plus the sum of the thickness of the back and inclination of the back. There shall be a space of not less than 350mm between the back of one seat and the front of the seat immediately behind it is measured between plumb lines.

Guidelines for College Buildings

1. The Urban Development Department Govt. of Maharashtra had issued guidelines for Safety of Educational Buildings vide letter No. FFS-2004/419/CR-121/UD-6, Dt. 05/08/04 & Circular issued by College Education Department, Govt. of Maharashtra vide No. 2004/(155/04)/Training-4, Dt. 22/07/04 which shall be **scrupulously followed.**
2. Building intended for educational occupancy shall not be used for any hazardous occupancy.
3. Storage of Volatile Flammable Liquids shall be prohibited and handling of such liquids shall be restricted to Science Laboratories only.
4. Exits and other means of Escape like Corridor & Staircase shall be kept free from any kind of Obstruction & Combustible Materials such as Benches, Chairs etc. Combustible materials like Old Newspaper, Wooden Furniture's, Gunny Bags etc., shall not be kept store on the Lofts.
5. Exits should be clearly visible and the route to reach the exits shall be clearly marked sign posted to guide the students (occupants) of the floor concerned.
6. Exits shall be so arranged that at least two separate exits are available in every floor area. Exits shall be as remote from each other as practicable and so arranged that there are no pockets or dead ends.
7. During Annual Function or any programs where temporary structure i.e. Pandal or Shamiyana is erected, proper approval from Fire Department is to be taken. All necessary guidelines issued by Fire Department shall be scrupulously followed.
8. Every room or class room with a capacity of more than 40 persons in area shall have at least two doorways for exit of not less than **900 m.m. wide.**
9. **The latest order by Hon'ble Supreme Court's judgment shall be also be followed scrupulously.**

OTHER REQUIREMENTS:

1. Building intended for educational occupancy shall not be used for any hazardous occupancy.

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2. Every room or class room with a capacity of more than 40 persons in area shall have at least two doorways for exit of not less than 900 m.m. width
3. Storage of volatile flammable liquids shall be strictly prohibited and the handling of such liquids shall be restricted to science laboratories only.

GUIDELINES FOR CHEMICAL LABORATORY :

- a. Guidelines should be followed from **IS:4209 Code of Safety in Chemical Laboratories.**
- b. Portable fire fighting equipments should be installed at various locations in the Administrative Building, Office Building and Stores, such as Co2-DCP, Foam, Fire buckets should be strictly confirming to relevant IS specification. All the fire fighting equipments shall be well maintained and should be easily accessible in case of emergency.
- c. In addition to this 4 Nos. of 4.5 Kgs DCP Extinguishers should be installed within the Laboratory.
- d.

CANTEEN AREA (LPG Storage) :

- If L.P.G. is used for cooking purpose in canteen (ground floor only) the L.P.G. pipelines & fittings & accessories used shall be strictly confirming to **IS: 6044 Part-I.** The L.P.G. pipeline & related installation shall be done by reputed and authorized agency. The agency shall issue a certificate that the work is carried out as per **IS: 6044 Part-I.**
- The L.P.G. storage area shall be provided with a separate shed painted in "**RED**" colour, "**Danger**" "**No-Smoking**" signs shall be painted on the door of L.P.G. shed. The shed should be always kept in lock and key & the key of the L.P.G. shed shall be kept with responsible person of the company.

ELECTRICAL SERVICES:

1. The electric distribution cables/wiring shall be laid in separate duct. The duct shall be sealed at every alternate 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.

Electric cable shaft and electric meter room :

- i) Electric cables shall not pass through the staircase walls or shall be taken in concealed manner.
- ii) Inspection door of the shaft if provided shall have two hours of fire resistance.
- iii) Electric meter room shall be provided at the ground floor at the

- location marked on the plan. It shall be adequately ventilated.
- iv) Electrical shafts shall be sealed at each floor level with non combustible material such as vermiculite concrete.
 - v) Electric wiring shall be having copper core having the fire resistance and low smoke hazard cables for the entire building with provision of ELCB / MCB in electrical installation of the building.

Access :-

Two entrance gates each of width not less than 04.50 mtr and height clearance not less than 04.50 mtrs shall be provided.

Courtyards :-

- i) The courtyards on all sides of the building shall be paved suitably to bear the load of fire engines weighing up to 45m. tones and shall be flushed to road level.
- ii) The courtyards shall be in one plane.

CAR PARKING:

- i) Car parking shall be permitted in the designated area.
- ii) Drainage of the car parking area of all the levels shall be laid independent from that of the buildings & it shall be provided with catch pit & fire trapped before connecting the building drainage or Municipal drainage.
- ii) Drainage of the car parking areas at all the levels shall be so laid as to prevent any overflow in the staircase, lift shaft etc.
- iii) The parking area shall not be used for dwelling purpose & repairing / maintenance purpose, at any time. Dwelling use of naked light/flame, repairing /maintenance of vehicles shall be strictly prohibited in the parking area.
- iv) Repairing / servicing of cars, use of naked light shall not be permitted in the car parking areas.
- v) The drive way shall be properly marked & maintained unobstructed

PORTABLE FIRE EXTINGUISHERS :-

- a. Two Dry Chemical Powder (A.B.C.) type fire extinguisher of 6 kgs. Capacity having I.S.I. certification mark and two buckets filled with dry, clean sand shall be kept in Electric meter Room as well as Lift Machine room.
- b. Eight Dry Chemical Powder (A.B.C.) type fire extinguishers each of 6 Kgs. Capacity having I.S.I. certification mark shall be kept at parking area equally distributed at prominent places in stilts.

TERRACE DOOR:

- i) The top half portion of the doors shall be provided with louvers.
- ii) The latch- lock shall be installed from the terrace side at the height of not more than 1mtrs.
- iii) The glass front of 6 inch diameter with the breakable glass shall be provided just above the latch lock, so as to open the latch in case of an emergency by breaking the glass.

SIGNAGES :-

Self glowing / fluorescent EXIT signs in green colour shall be provided showing the means of escape for the entire building.

This is a "Provisional No-Objection Certificate" and after compliance with above mentioned recommendations / conditions, inspection of the fire prevention & protection systems provided by you will be carried out by this department & after satisfactory performance of the system "Final No-Objection Certificate" will be issued.

As per Maharashtra Fire Prevention and Life Safety Measures Act, 2006, Section 25-Annexure-Part III, party has paid Fire Protection Fund Fees amounting to Rs.25,000/-(Rs. Twenty Five Thousand only) vide UTR No. MAHBH17146463360 dated 25/05/17 as certified by the then Architect vide his letter.

However, Town Planning is requested to verify the total built up area and inform this Department for the purpose of levying additional Capitation fee.

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



(P S Rahangdale)
Director
Maharashtra Fire Services

Handwritten signature and date:
P S Rahangdale
25/5/17