Phone: २५३३१२११
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# ठाणे महानगरपालिका

महानगरपालिका भवन, डॉ. अल्मेडा रोड, चंदनवाडी, पाचपाखाडी, ठाणे-400602
THE MUNICIPAL CORPORATION OF THE CITY OF THANE

संदर्भ क्र/ ठा.म.पा/
Ref./T.M.C./C.F.O/M 2692/16 Sub Plot-B
Building-No-3,4,5

दिनांक / /२०११
Date 17/02/2011

## Amended Plan

To,
The Asst. Director of Town Planning,
Thane Municipal Corporation,
Thane.

**Sub.:** Grant of N.O.C. stipulating, Fire Protection & Fire requirements for Residential High Rise building which are proposed on the plot Gut no. 61/1/1, 2, 3, 4, 61/2/1,2,3 of village Chitalsar (Manpada), Tal. & Dist. Thane. **For Shri Munish Doshi, Shri Pravin Doshi.**

**Ref.:** i. V.P. No. **88/142**
ii. A letter from Architect M/s. Scapes Dated 17/07/2010 and 13/12/2010.
iii. Initial clearance from this department wide letter No. TMC/CFO/M-468/49Dated 15/06/2010.
iv. Our site visit dated 17th November, 2010.

Dear Sir,

Proposal is to develop a plot Gut no. 61/1/1, 2, 3, 4, 61/2/1, 2,3 of village Chitalsar (Manpada), Tal. & Dist. Thane. For Shri Munish Doshi & Shri Pravin Doshi.

Entire plot is divided in to two sub-plot namely sub plot-A and sub plot-B. Initially total 18 buildings were propose on both the sub plot (sub plot-A-09 and sub plot-B-09 =18).

This department had given the initial clearance for total 07 building as per following clearances.

| Sr.No | Sub Plot | Building No. and Name | Initial clearance issued building |
|---|---|---|---|
| i. | A | 02 building namely no.7 and 8. | N.O.C. for Residential building namely bldg. no.7 and 8 has been issued by this dept. wide letter no. TMC/CFO/M-468/49Dated 15/06/2010 |
| ii. | B | 02 building namely Ashwood & Oakwood | N.O.C. for Residential building namely Ashwood & Oakwood has been issued by this dept. vide no. TMC/CFO/M-900/194 Dated 18/03/2010. |
| iii. | | 03 building M.M.R.D.A. bldgs.no 3, 5, 6 | M.M.R.D.A. bldgs. 3, 5, 6 has been issued by this dept. wide letter no. TMC/CFO/M-468/49Dated 15/06/2010 |

Thane Municipal Corporation of the City of Thane

Architect Shri Subhash Gupte has submitted the Amended plans of the said proposal to this department wide there letter dated 17/07/2010 and 13/12/2010..

This department has done the scrutiny of amended plans of the above referred proposals as per existing building by-laws with respect to the fire prevention and protection measures to be incorporated in the buildings.

While scrutinizing the Amended Plans of the said proposal following things are observed:

**OBSERVATION :**

1. Above referred plot is 54500.00 sq.mtrs. in area.
2. The said plot is divided into two sub plot's sub plot-A and sub plot-B
3. The said plot is approachable by 20.00 m.wide road from North side & 10.00 m. wide D. P. road from west side.
4. Initially total 18 buildings were proposed on the entire plot i.e. 09 buildings in sub plot-A and 09 building in sub plot-B.
5. This department had given the initial clearance for total 07 building as per following clearances.

| Sr.No | Sub Plot | Building No. and Name | Initial clearance issued building |
|---|---|---|---|
| i. | A | 02 building namely no.7 and 8. | N.O.C. for Residential building namely bldg. no.7 and 8 has been issued by this dept. wide letter no. TMC/CFO/M-468/49Dated 15/06/2010 |
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| iii. | | 03 building M.M.R.D.A. bldgs.no 3, 5, 6 | M.M.R.D.A. bldgs. 3, 5, 6 has been issued by this dept. wide letter no. TMC/CFO/M-468/49Dated 15/06/2010 |

6. As per amended plans 16 buildings are propose on the entire plot.
7. Sub plot wise break up of 16 buildings which are propose on the above reffered plot are as follows.

| Sr.No | Sub Plot | Propose building | Amended plan submitted for Initial clearance | Remarks |
|---|---|---|---|---|
| 1. | A | 08 | 02 bldg no. 2 and 3 | Revised Plan are scrutinized by this department and remark are attached herewith |
| 2. | B | 08 | 03 bldg no.3,4,5 | |

8. Considering the file management it is suggested that sub plot wise building N.O.C will be given to the Architect .
9. The above said suggestion is accepted by the concern Architect.

10. Considering the above situation Architectural plans of three buildings which are proposed in sub plot-B are scrutinize by this department and remarks are given as follows.

**OBSERVATION:-**

1. Area of Sub plot-B is 19,130.00 Sq.meter.
2. Sub plot-B is approachable by 20 meter wide road from South side and 10 meter wide road from west side.
3. Total 08 buildings are propose on the plot-B.
4. Architectural plans of only 03 buildings namely building No.3,4,5 are scrutinize by this department and remarks are attach here with.
5. Proposed residential high rise buildings are approachable by 20 meter wide road from South side and 10 meter wide road from west side.
6. Two entry gates are proposed for the said residential building which are proposed on sub plot-B. both gates located on 20 meter wide road from South side.
7. Proposed all three buildings are Ground + 22nd floor which are 67.60 meter in height from ground level.
8. Commercial area is proposed on ground and first floor of all the three buildings.
9. Adequate open space are propose for the M.M.R.D.A building no. 3,4,5.on Ground level.
10. The accessibility of the fire engine is on the Ground level.
11. Space for refuge area is proposed on respective floors i.e. on 8th,13$^{th}$,18$^{th}$ floor of All the three proposed building.
12. Two enclosed staircase each having the width of 1.5 meter proposed for all three M.M.R.D.A residential building. namely building no. 3,4,5.
13. Both the staircases travels from ground to top of the each building.
14. Both the staircases are enclosed for entire height of the each building.
15. Each shop is having internal staircase in commercial area[ground+first floor] which is proposed in building.
16. All the three buildings namely M.M.R.D.A B.No. 3,4,5, having four lifts in each residential buildings.
17. All the four lifts are travels from ground floor to top floor of the buildings.
18. Location of meter room, sub-station & D.G room are not marked on the plan.
19. Required fire fighting measures are not marked on the plan.

Considering the above situation following fire prevention and protection measures are recommended for M.M.R.D.A residential building. namely building no. 3,4,5. which are proposed on Sub plot-B.

**MAIN D.P. ROAD / INTERNAL ROAD.**

The said plot is approachable by 20.00 wide D.P. road from South side. Propose Residential M.M.R.D.A building. namely building no. 3,4,5. approachable by 20.00 m wide D.P road from south side and 10 meter wide road form west side.

**SUGGESTION:**

No addition fire protection and preventions measures are recommended for the Main D.P. Road/ Internal road.

**ENTRY GATE:**

Two entry gates are proposed for the said residential building which are proposed on sub plot-B. both gates located on 20 meter wide road from south side.

**SUGGESTIONS:**

1. Height clearance and the width of these gates shall not be less than 5.00 mt.

**OPEN SPACE:**

Open Space around the proposed residential building namely M.M.R.D.A B.No.3,4,5 are as under .

| Sr. No | Name of building | North | South | East | West | Remark |
|---|---|---|---|---|---|---|
| 1. | M.M.R.D.A Building No.3 | 6.00 mt. | 7.5 mts. | 6.00 mts | 6.00 mt. | Open space proposed on Ground level. |
| 2. | M.M.R.D.A Building No.4 | 6.00 mt. | 6.00 mts. | 6.00 mts | 7.50 mt | |
| 3. | M.M.R.D.A Building No.5 | 6.00 mt. | 6.00 mt. | 7.50 mt | 7.50 mt | |

**SUGGESTIONS:**

1. Minimum 6 Mt. open space around the building must be maintained free from all encroachments and obstructions for easy movements of fire appliances. Same shall be capable of taking the load of fire engines up to 45 tons.
2. Turning radius of 09 meter shall be provide for fire tender movement.
3. Open spaces of all the buildings shall be paved by concrete.
4. Parking or any structure which will create obstruction for fire engine shall not be proposed in the open spaces of any buildings.

**HEIGHT, FLOOR AREA AND OCCUPANCY:**

The height floor area and occupancy of residential building namely M.M.R.D.A B.No.3,4,5 are as under .

**Building No.3**

| Floor | Height | Floor Area | Occupancy |
|---|---|---|---|
| Ground floor/Stilt floor | 3.35Mtrs. | 347.96 sq. mtrs. | Shopping |
| first floor | 2.90Mtrs. | 386.93 sq. mtrs. | Shopping |
| 2nd to 7th, 9 to 12th, 14th to 17th,19 th to 22nd floor | 2.90 Mtrs. | 296.65 sq. mtrs. | Residential |
| 8th, 13th, 18th floor | 2.90 Mtrs. | 226.57 sq. mtrs | Residential/Refuge |

**Building No.4**

| Floor | Height | Floor Area | Occupancy |
|---|---|---|---|
| Ground floor/Stilt floor | 3.35Mtrs. | 249.52 sq. mtrs. | Shopping |
| first floor | 2.90Mtrs. | 581.62 sq. mtrs. | Shopping |
| 2nd to 7th, 9 to 12th, 14th to 17th,19 th to 22nd floor | 2.90 Mtrs. | 398.31 sq. mtrs. | Residential |
| 8th, 13th, 18th floor | 2.90 Mtrs. | 310.56 sq. mtrs | Residential/Refuge |

**Building No.5**

| Floor | Height | Floor Area | Occupancy |
|---|---|---|---|
| Ground floor/Stilt floor | 3.35Mtrs. | 85.99 sq. mtrs. | Shopping |
| first floor | 2.90Mtrs. | 322.63 sq. mtrs. | Shopping |
| 2nd to 7th, 9 to 12th, 14th to 17th,19 th to 22nd floor | 2.90 Mtrs. | 292.64 sq. mtrs. | Residential |
| 8th, 13th, 18th floor | 2.90 Mtrs. | 207.04 sq. mtrs | Residential/Refuge |

**SUGGESTIONS:**

Fire Brigade Department has no objection for height, floor area and Occupancy of proposed Residential building namely M.M.R.D.A B.No.3,4,5. Subject to compliance of the conditions mention in this NOC.

**MEANS OF ESCAPE:**

Two enclosed staircase having the width of 1.50 mt. are proposed for all the residential buildings namely M.M.R.D.A B.No.3,4,5.

- Proposed staircases of the building is of enclosed type for the entire height.
- Proposed staircases of the building allows movement of fresh air.
- Treads and risers of this staircases are as per the existing buildings by-laws.

**SUGGESTIONS:**

- This proposed enclosed staircases shall be reached via ventilated lobby and shall have access through self-closing doors of at least half an hour of fire resistance.
- Doors shall be signal swing doors opening in the direction of the escape.

- The door shall be fitted with check action door closers.
- Permanent vent at the top equal to 5% of cross sectional area of staircase shall be provide in the propose building.
- Openable sashes at each floor level with area to 15% of cross sectional area of the enclosures on the external wall shall be provided.
- Staircase of the propose building must be well illuminated around the clock.
- Lighting for the staircases of both the buildings must be connected to stand by electric supply.
- Lifts shall not be used as a means of escape during emergency.
- All the exists & directions of travel to exists must be conspicuously marked with illuminated signs.

**MEANS OF ENTRY:**

Proposed number of Lifts in all the three buildings namely M.M.R.D.A B.No.3,4,5. are as follows:

| Sr.No | Name of building | Number of lifts | Remark |
|---|---|---|---|
| 1. | M.M.R.D.A Building No.3 | 04 | Two lifts are attached with each other and Two lift is separate. |
| 2. | M.M.R.D.A Building No.4 | 04 | |
| 3. | M.M.R.D.A Building No.5 | 04 | |

1. The lift which are proposed in the building are of high speed nature.
2. All the lift travels from ground to top floor of all the three buildings.

**SUGGESTIONS : (For Residential Building M.M.R.D.A B.No.3,4,5.)**

1. Planning and Design of all the lifts shall be accordance with the latest National Building Code (i.e. Section 5, Installation of Lifts & Escalators).
2. All lifts of the building are to be provided with automatic steel doors for lift cars and landings.
3. Minimum two lift in the building shall be designed and designated as **fire lift.** This lift shall be equipped with firemen's switch for grounding it in the event of fire.
4. Walls of each lifts enclosures shall have fire resistance of not less than 2 hours.
5. Landing doors in the left enclosures must have fire resistance of not less than 1 hour.
6. Lift car doors shall have fire resistance of 2 hours.
7. Separating wall of 2 hours fire resistance railing shall be provided between the lifts shafts.
8. Fire lift of the building shall be conspicuously painted with florescent paint on all landing doors of fire lift.

9. Fire lift of the building can however to be used for other purpose under normal conditions.

10. A.R.D (Automatic Rescue Device) shall be installed in the lifts.

11. It should comply the requirements as per C-1.5 of NBC part IV of 2005.

12. The fire lift of the building shall meet the following requirements.

    i. It must be connected to standby sources of power supply.

    ii. It must be ensured that, power cables to fire lift are laid the route, which is fire safe.

    iii. Power supply to fire lift must be automatically trip over type to the alternate source at Power supply in the event of failure of normal power supply.

    iv. Telephone communication system shall be installed in the lift.

**REFUGE AREA**

Refuge area Details of buildings namely M.M.R.D.A B.No.3,4,5. are as under.

| Sr. No | Building No. | Proposed Refuge Area on floor(Sq.m) | Refuge Area (Sq.m) | Height (in Meter) | Remarks |
|---|---|---|---|---|---|
| 1. | M.M.R.D.A Building No.3 | 8th,13th,18th | 70.08 Sq.mt | 67.60 mt. | Space and side of the Refuge area is acceptable by the Fire Brigade Department |
| 2. | M.M.R.D.A Building No.4 | 8th,13th,18th | 87.75 Sq.mt | 67.60 mt. | |
| 3. | M.M.R.D.A Building No.5 | 8th,13th,18th | 85.60 Sq.mt | 67.60 mt | |

**SUGGESTIONS:**

Following additional suggestions are recommended for the propose refuge area.

- The layout of refuge areas shall not be changed/ modified at any time in future.
- There shall not be any opening in to the refuge area from any portion of the occupied premises.
- Refuge area shall be segregated by brick masonry partition wall of 9" thickness & access to the refuge area shall be gained through half an hour fire resistant self-closing door.
- Lifts & / or open type staircases shall not be open in to refuge area.
- Clear height of the refuge areas below the beam/ drop parade shall not be less than 1.8 mtrs. & not more than 2.20 mtrs.
- The refuge areas shall be ear-marked exclusively for the use of occupants as a temporary shelter & for the user of fire brigade department & any other organization dealing with fire or other emergencies when occurs in the building & also for exercise / drills if conducted by the fire brigade department.
- The refuge area shall not be allowed to be used for any other purpose & it shall be responsibility of the owner/ occupier to maintain the same clean & free of encumbrances & encroachment at all times.

- The entrance door to the refuge area shall be painted or fixed with a sign painted in luminous paint mentioning 'Refuge Area – In case of Emergency'
- Adequate drinking water facility shall be provided in the refuge area.
- Adequate emergency lighting facility connected to the electric circuits of staircase, corridor/ passage etc. lighting shall be provided.

**ELECTRICAL INSTALLATIONS : Residential Building M.M.R.D.A B.No.3,4,5.**

Location of sub-station,D.G room and Generator Room is not marked on the plan. All Fire Safety norms shall be complied which will be given by Fire Brigade Department at the time of installation of sub-station, Generator room and other required electrical gazettes.

General recommendations from the point of fire safety for electrical installations are as follows :-

- The electric distribution cables/wiring for the buildings shall be laid in separate duct. The duct shall be sealed at every alternative floor with non-constructive material, having the same fire resistance as that of the duct.
- Water mains, telephone lines, inter-com lines or any other service line shall not be laid in the duct for electrical cables.
- Separate circuits for water pumps, lifts, staircase & corridor lighting shall be provided directly from the main switch gear panel & these circuits shall be laid in separate conduct pipes so that, fire in one circuit will not affect the others. Master switch controlling essential services circuits will not affect the others. Master switches controlling essential services circuits shall be clearly labeled.
- Medium & low voltage wiring running in shaft & if it is in the false ceiling it shall run in metal conduct.

**ELECTRIC CABLE SHAFTS AND ELECTRIC METER ROOMS :**

Electric cable shafts shall be exclusively used for electric cables and shall not open in the staircase enclosure.
Electric meter rooms shall be provided at stilt floor level. They shall be adequately ventilated.
Electric shafts shall be sealed at each floor level with non-combustible material such as vermiculite concrete.
Inspection door for the shaft if provided shall have two hours fire resistance.

**ALTERNATE SOURCE OF POWER SUPPLY: Residential Building M.M.R.D.A B.No.3,4,5.**

An alternative source of L.V./H.V. supply from a separate sub-station with appropriate change over switch shall be provided for fire-pump, fire lift, staircase & corridor lighting circuits manual fire alarm system & jocky pump. It shall be housed on/ in a separate cables. In addition to this equal capacity at D.G. set shall be provided. It shall be installed as per C-1.15 of the provision of NBC part IV of 2005.

**INTERCOMMUNICATION SYSTEM: Residential Building M.M.R.D.A B.No.3,4,5.**

An emergency intercommunication system shall be provided for the entire building. The instructions shall be placed in the common areas of the each floors & fire control room in bold paint.

**SERVICE DUCTS : Residential Building M.M.R.D.A B.No.3,4,5.**

All the service ducts, which are proposed in all the three buildings should have to be enclosed by walls of at least two of our fire resistance and should be sealed at every alternate floors with non-combustible material having at least two of our Fire resistance.

**FIRE CONTROL ROOM: Residential Building M.M.R.D.A B.No.3,4,5.**

Fire control room shall be proposed on the ground/ stilt floor level of each building. The size of the fire control room must be adequate for housing all indicating/ control equipment for the fire alarm system, public address system, intercom system and also fire the displaying the plans of all the floors of the each building.

**FIRE ORDERS / NOTICES : Residential Building M.M.R.D.A B.No.3,4,5.**

Fire Notices / Orders shall be prepared for building to fulfill the requirements of fire fighting & evacuation from the building in the event of fire or other emergency. The occupants of building shall be made thoroughly conversant with their action in the event of emergency by displaying of Fire Notices at vantage points and also through regular training. Such notices shall be displayed prominently in broad letters.

**HOUSE KEEPING: Residential Building M.M.R.D.A B.No.3,4,5.**

To eleminated fire hazards good house keeping both inside & outside the building shall be strictly maintained by the occupants and /or owner of the building.

महाराष्ट्र आग प्रतिबंधक व जीव संरक्षक अधिनियम २००६ राज्यात लागू झाला आहे. इमारतीत किंवा तीच्या भागात आग प्रतिबंधक व जीव संरक्षक उपाययोजनांची तरतूद करण्यांकरता व सदरच्या उपाययोजना दुरुस्त आणि कार्यक्षम स्थितीत ठेवण्यांसाठी, उपरोक्त अधिनियमातील कलम ३ चे (३) तसेच कलम ९ मध्ये "लायसन्सप्राप्त अभिकरणांची" तरतूद करण्यांत आली आहे.

उपरोक्त अधिनियमातील तसेच तद् अनुषंगाने तयार करण्यांत आलेल्या नियमांतील कार्यपध्दतीचा अवलंब करुन, ठाणे महापालिका हद्दीत असलेल्या इमारतीतील किंवा त्यांचे भागातील, आग प्रतिबंधक उपाययोजनांच्या अनुपालनासंबधी "लायसन्सप्राप्त अभिकरण " म्हणून कार्य करण्यांकरता महापालिकेच्या अग्निशमन विभागातर्फे काही व्यक्तीस तसेच व्यक्तींच्या संघास "लायसन्सप्राप्त अभिकरण " म्हणून घोषित करण्यांत आले असून, त्यांची यादी अग्निशमन दलाच्या नोटीस बोर्डावर लावण्यांत आली आहे.

सबब, महाराष्ट्र आग प्रतिबंधक व जीव संरक्षक अधिनियम २००६च्या तरतूदीनुसार "लायसन्सप्राप्त अभिकरण" म्हणून घोषित करण्यांत आलेल्या व्यक्ती किंवा व्यक्तींच्या संघाकडूनच इमारतीतील किंवा त्याच्या भागातील आग प्रतिबंधक व जीव संरक्षक उपाययोजनांच्या अनुपालनासंबधी कामे करुन घेण्यांत यावी. व त्याबाबतचा विहित नमुन्यातील दाखला वापर परवाना मागतेवेळी सादर करण्यांत यावा.

CAPITATION AND SCRUTINY FEE:

Details of capitation and scrutiny fee for the building is as under:

Party has paid the Scrutiny Fees as under:

| Sr. No. | Building No. | Area (sq.mt.) | Scrutiny Fee (Rs). | Pay order No. and Date | Receipt No. and Date |
|---|---|---|---|---|---|
| 1 | M.M.R.D.A. B.No. 3 | 9916.83 67.60 m height | 2,97,480.00 I | 027601date 10/01/2011 | FIR/HQ/000905/2010 Date17/01/2011 |
| 2 | M.M.R.D.A. B.No.4 | 12659.69 | 3,79,790.70 | 027605 date 10/01/2011 | FIR/HQ/000906/2010 Date17/01/2011 |
| 3. | M.M.R.D.A. B.No5 | 9239.36 67.60 m height | 2,77,180.80 | 027596 date 10/01/2011 | FIR/HQ/000909/2010 Date17/01/2011 |
| 4. | M.M.R.D.A. 3,4,5, | Commercial | 150,000/- | 002884 date 11/01/2011 | FIR/HQ/000911/2010 Date17/01/2011 |

The party has paid the capitation fees as under:

| Sr. No. | Building No. | Area (sq.mt.) | Capitation Fee (Rs). | Pay order No. and Date | Receipt No. and Date |
|---|---|---|---|---|---|
| 1 | M.M.R.D.A. B.No. 3 | 9916.83 67.60m height | 5,95,010.00 _3,25,000.00 already paid FIR/HQ/000318/2010 DATE 15/06/2010 2,70,010.00 | 027604 date 10/01/2011 | FIR/HQ/000904/2010 Date17/01/2011 |
| 2 | M.M.R.D.A. B.No.4 | 12659.69 67.60m height | 7,59,582.00 _3,65,000.00 already paid FIR/HQ/000320/2010 DATE 15/06/2010 3,94,582.00 | 027600 date 10/01/2011 002909 date 13/01/2011 | FIR/HQ/000907/2010 Date17/01/2011 FIR/HQ/000908/2010 Date17/01/2011 |
| 3 | M.M.R.D.A. B.No5 | 9239.36 | 5,54,362.00 _4,36,500.00 already paid FIR/HQ/000322/2010 DATE 15/06/2010 1,17,862.00 | 027597 date 10/01/2011 | FIR/HQ/000910/2010 Date17/01/2011 |
| 4 | Total | | 7,82,454.00 | | |

T.D.O. department is requested to verify the total built-up area inform this office & if same is found to be more for the purpose of levying additional capitation fees, if requires

Chief Fire Officer 6/1/2011
Thane Fire Brigade, Thane

**ESCAPE ROUTE: Residential Building M.M.R.D.A B.No.3,4,5.**

Escape route lighting (Staircase & Corridor lights) shall be on independent circuits as per rules 4.6 for NBC part IV- 2005.

**LIGHTING CONDUCTOR: Residential Building M.M.R.D.A B.No.3,4,5.**

It is proposed to protect the residential building against the lighting, by installing lighting protection system confirming to latest IS code of practice 2309. The lighting protection must be maintained on good repairs at all times. This should be protect the building and light structure against lighting.

**FIRE FIGHTING REQUIREMENTS: Residential Building M.M.R.D.A B.No.3,4,5.**

**UNDERGROUND WATER STORAGE TANK:**

An underground water storage tank of not less than 1,50,000 ltrs. Capacity for the each propose residential building. Exclusively for fire fighting shall be provided at ground level as location marked on the plan. As per the design specified in the rules with baffle walls & fire brigade collecting breaching. Underground tank shall be connected to wet risers & courtyard hydrant system.

**OVERHEAD (TERRACE) WATER STORAGE TANK: Residential Building M.M.R.D.A B.No.3,4,5.**

Another tank of 20,000 ltrs. Capacity shall be provided at terrace level for the propose each building. The design & layout of this tank shall be got approved from concerned department prior to its erection. The tank shall be connected to wet riser through a booster pump through N.R. Valve & get Valve.

**WET-RISER: Residential Building M.M.R.D.A B.No.3,4,5.**

One wet-riser for each Residential Building of internal diameter of 15 cms of G.I. 'C' Class pipe shall be provided in the duct adjoining the staircase with twin hydrant outlet & hose-reel on each floor in nitches in such a way as not to reduce the width of corridor. Pressure reducing discs or ori ficies shall be provided at lower level so as not to exceed
pressure of 5.5 kgs/cm2. Afire service inlet on the external face of the building near the static tank directly fronting the courtyard shall be provided to connect the mobile pump of fire service to the wet-riser. Sprinkler should be provided for corridor of all the floors of buildings.

**FIRE PUMP & BOOSTER PUMP: Residential Building M.M.R.D.A B.No.3,4,5.**

a. Wet riser of each Residential Building shall be connected to a fire pump at ground level of capacity of not less than 3200 L.P.M. capable of giving pressure of not less than 3.2 Kg./Cm2 at top most hydrant.
b. Booster pump of capacity 900 L.P.M. giving a pressure of not less than 5.2 kg./cm at top most hydrant out let at the wet-riser shall be provided at the terrace level of each building.
c. Electric supply (normal) to these pumps shall be on independent circuits.
d. Stand by pump of equal capacity shall be provided.
e. Submersible pump shall not installed.

**EXTERNAL HYDRANT : Residential Building M.M.R.D.A B.No.3,4,5.**

Four external hydrants for each residential building shall be provided for the propose building within the confines of the site on the wet riser at location marked on the plan.

**HOSE REEL Residential Building M.M.R.D.A B.No.3,4,5.**

Near each internal hydrant of each building hose reel shall be installed. Each hose reel tubing terminating in to shut off nozzle of 5mm outlet. Hose reel shall be connected to the risers & it shall confirm to the latest codes 8090.

**HOSE BOX Residential Building M.M.R.D.A B.No.3,4,5.**

Hose boxes shall be provided in the proposed buildings on each floor near each internal hydrant and in the court yard hydrant. Each box shall be equipped with 2 x 15 meter length of 63mm rubber line hose along with standard branch pipe. It shall confirm to latest IS Code 636 and 903 respectively.

**PORTABLE FIRE EXTINGUISHERS: Residential Building M.M.R.D.A B.No.3,4,5.**

The following portable extinguishers shall be provided at the electric meter room (service) & at lift machine room at terrace level.

I. D.C.P. type fire extinguishers of 5 kg. Capacity with ISI marks-2 nos.
II. Buckets filled with dry clean sand- 2 nos.
III. CO2 type fire extinguishers 4.5 kg. Capacity with ISI mark – 2 nos.
IV. Extinguishers shall be displayed at strategic locations in entire building as per latest IS.2190.

**FIRE ALARM SYSTEM : Residential Building M.M.R.D.A B.No.3,4,5.**

All the buildings shall be provided with manual fire alarm system with main control panel at ground floor level & pillboxes & hooters at each at the upper floors levels. The layout of the fire alarm system shall be in accordance to the Indian Standard Specifications.

**AUTOMATIC DETECTION SYSTEM: Residential Building M.M.R.D.A B.No.3,4,5.**

Entire buildings including meter room, D.G. room and Transformer room shall be protected with Automatic detection system. Design of this system shall be as per latest IS 2189.

**PUBLIC ADDRESS SYSTEM : Residential Building M.M.R.D.A B.No.3,4,5.**

The public address system shall be provided in the building with laud speakers on each floor and in common area. The microphone, amplifier and the control switches shall be installed in the fire control room.

**SPRINKLER SYSTEM:**

On the above referred sub plot-B **M.M.R.D.A. bldgs. 3, 4, 5** residential building are propose. Considering the height of residential buildings sprinkler shall be installed on the following areas of all the building.

1. Common corridor, lobby of all the floors of residential buildings shall be protected by Sprinkler.
2. Design of sprinkler system shall be approved by C.F.O.
3. In the Entire commercial area sprinkler system shall be installed.