

EXECUTIVE SUMMARY
REDEVELOPMENT OF RESIDENTIAL
PROJECT

AT

C. T. S. NO. 989A, 989B, 990, 991 & 992 OF
VILLAGE BANDRA, AT SHERLY MALAD
ROAD, BANDRA(W), MUMBAI

BY

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Mumbai the capital of Maharashtra is also the financial capital and the most populated city of India. Mumbai has grown in recent decades for many residential and commercial developments. Diminishing of Industrial zones and development of corporate offices, mall culture in very short period is one of the features of today's Mumbai.

The Mumbai has many old, dilapidated structures. They are very unsafe to retain. Many of them are in CRZ zones. Development of those by rehabilitating those tenants along with development of new flats to compensate the development charges will not be possible if extra FSI is not used. Because of CRZ conditions the FSI restriction makes those structures unattended.

But because of New CRZ notification 2011, it is possible to compensate the rehabilitation cost by developing these structures. The one of such project of unsafe, dilapidated building of residential use as declared dilapidated structure is discussed here.

1. INTRODUCTION TO THE REPORT

Proposed redevelopment of plot bearing C. T. S. No. 989A, 989B, 990, 991 & 992 of Village Bandra, at Sherly Malad Road, Bandra(W), Mumbai and thereby obtain CRZ-Environmental Clearance as per clause 33(6) of DCR – 1991 in force as on today. The scheme for the same is approved by MCGM under DCR 33(6) read with use of admissible TDR. There exist 2 structures on this property. Out of these 2 structures, one structure is proposed to be retained and other is declared dilapidated prior to 6.1.2011, and that structure is proposed to be redeveloped. The dilapidated structure comprises of Gr+ 1 stories. Land component of the existing structure proposed to be retained is deducted from total plot potential. On the balance land component, full TDR use with fungible FSI is proposed, as permissible as per DCRs as on today, in view of the dilapidated structure redevelopment as per clause 8(V)(C) of CRZ-2011.. TDR and Funfible FSI is not claimed on remaining 1 plot as the land component of the retained structure, where the existing structure is to be retained as it is.

The Plot is occupied by existing Ground + 1 upper floors structure occupying 01 existing tenants/ occupants. The structure was declared as dangerous by the office of Assistant Commissioner, H/ West Ward, Bandra (west), vide their notice under section 354 of MMC Act on 24/12/2010. As per MoEF Notification dated 6/1/2011, redevelopment of dilapidated, CESSSED and unsafe buildings in CRZ areas are permitted with special advantages, in which the project is planned as per DCR's in force as on the date of granting approval and staircase/ lobby/ lift area is claimed free of FSI, as per clause 35(2)c of DCR 1991. The proposal is submitted for prior CRZ clearance, as per the requirement of amended CRZ notification-2011 and the check list finalised by MCZMA vide Office Memorandum dated 02/07/2011.

. The subject plot is situated on the landward side of existing Carter Road and as well as on the landward side of existing authorised buildings. The existing road are in existence prior to 19/2/1991, as may be seen from CZMP of the area. The proposal attracts provision of MoEF notification amended up to date. The plot falls in Residential zone as per old DP as well as revised sanctioned DP (1993) and is not under any reservation as per both of these development plans.

Current development thus will help the existing tenants/ occupants to get permanent, safe accomodation in place of unsafe building. Photos of the same are attached in annexure.

These old dilapidated structure is now proposed to be developed into one building, comprising of stilt + 7 upper floors for residential use including car parking area.

2. DESCRIPTION OF THE PROJECT

2.1 NATURE OF THE PROJECT

This is a proposal for development of residential building situated at C. T. S. No. 989A, 989B, 990, 991 & 992 of Village Bandra, at Sherly Malad Road, Bandra(W), Mumbai in CRZ-II belt, as the same is situated within 500 mtr. from Arabian Sea. The proposal is for redevelopment of dilapidated residential building, which is situated on the landward side of **existing Carter Road in existence prior to 19/2/1991, as may be seen from CZMP of Mumbai as well as old 1967 DP of Mumbai.**

The Plot is situated in Residential zone and not under any reservation as per 1967 DP as well as Revised 1993 DP. The FSI permitted on the plot under reference is 1.00 captive + 1.00 TDR use = 2.00 plus admissible fungible FSI. In the instant case, the subject plot has the structure, which is dilapidated prior to 6th Jan 2011, as declared by MCGM. Therefore, this plot will be allowed benefits of DCRs as in force as on the date of granting permission, in view of clause 8 V (c) of CRZ-2011 .

2.2 SIZE OF THE PROJECT

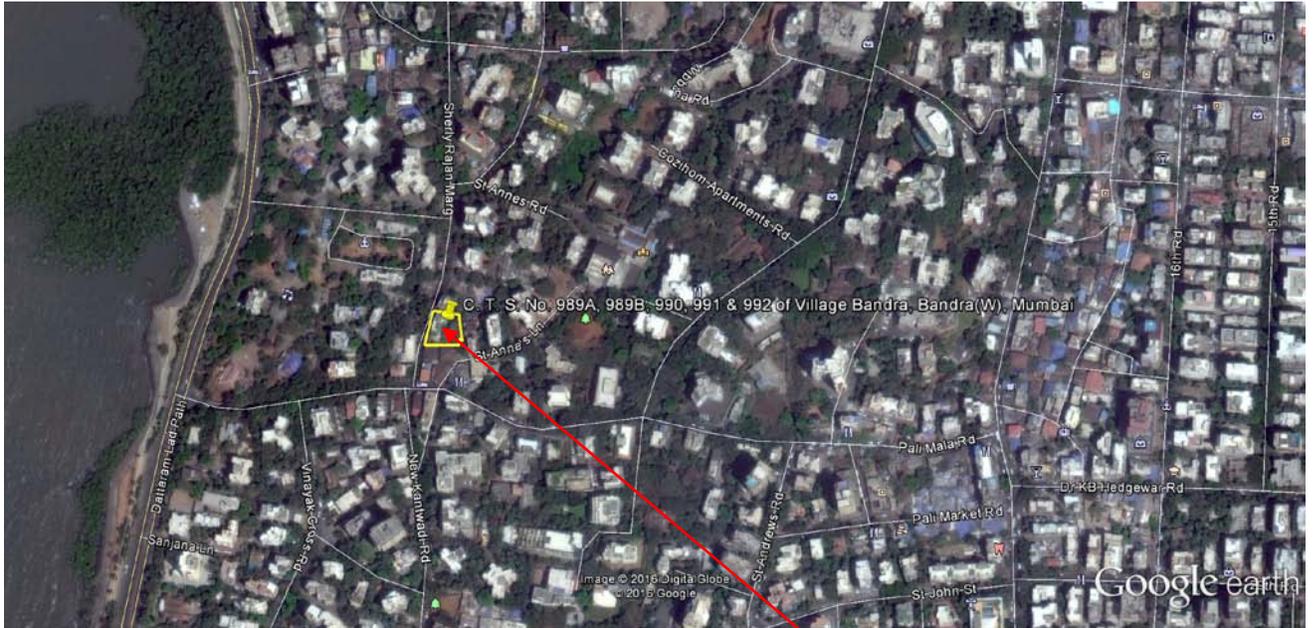
Area of the plot is 571.20 sq mtr. Cost of the Project is Rs. 11,91,00,000/- (Rupees Eleven Crores and Ninety One Lakh Only)

2.3 LOCATION

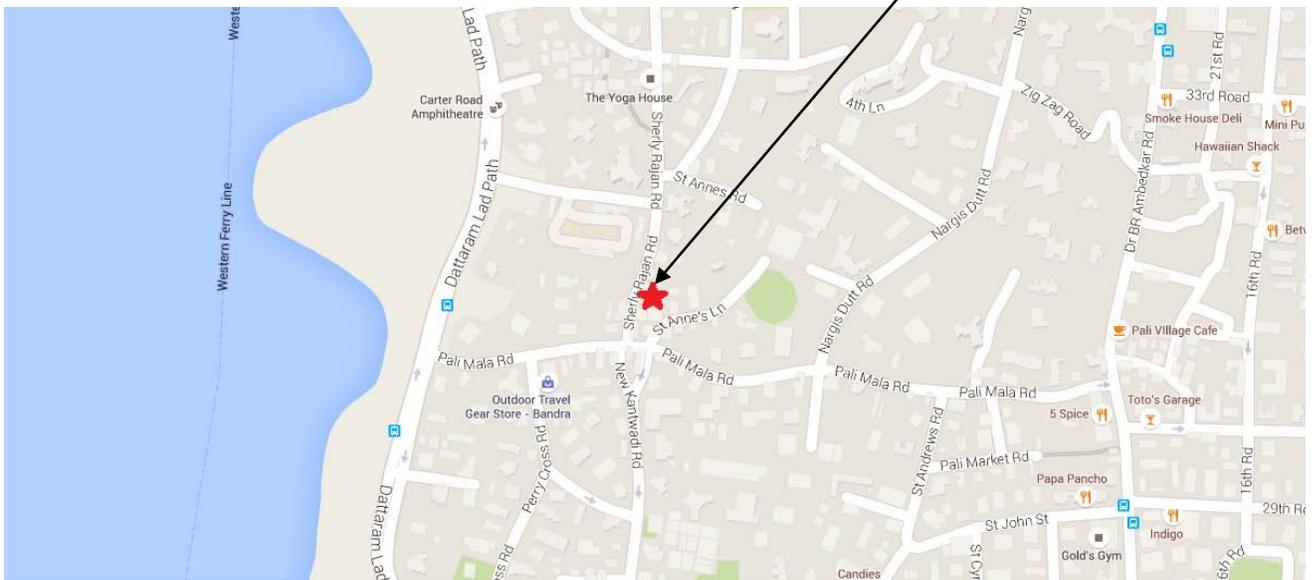
The C. T. S. No. 989A, 989B, 990, 991 & 992 of Village Bandra, at Sherly Malad Road, Bandra(W), Mumbai, is in the suburban part of the Mumbai city.

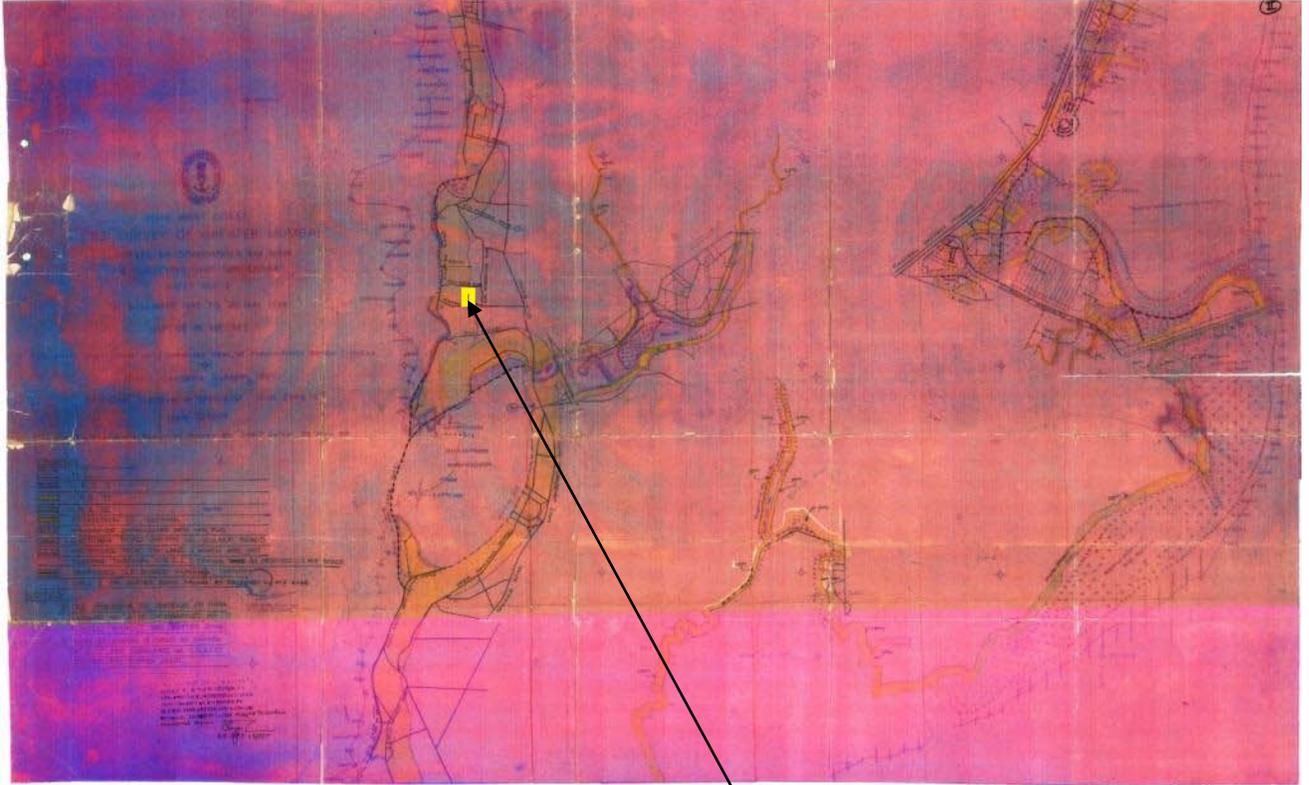
The nearest station is Bandra Railway Station which is about 2.40 km away from the site. The nearest bus stop Shirley Gaothan Bus Stop, which is 500 meters away from the site. The Juhu Airport is about 7.5 km from the site under reference.

Google Earth Image of the site



SITE UNDER REFERENCE





SITE UNDER REFERENCE

CZMP Plan showing location of reference Plot

2.4 SITE DESCRIPTION

The site under reference is affected by CRZ-II zone and the property fall landward side of the existing Juhu Tara Road which is reflected in CZMP plan. Thus property attracts the CRZ legislation as per CRZ 2011.

The development site does not fall or contain the environmentally sensitive areas as specified in the coastal Regulation zone notification. Total plot Area in CRZ is 571.20 sq. mtrs. and the same area will be used for construction activity.

Town / Tehsil	: Mumbai
District	: Mumbai Suburbs
State	: Maharashtra
Latitude	: 19° 3'49.17"N
Longitude	: 72°49'29.28"E

2.5 PROPOSED DEVELOPMENT

2.5.1 AREA

	Description	CRZ II Area
1	Area of Plot for CTS No. 990/A, 991 & 992 & CTS No. 989/A	571.2 Sq. mtrs.
2	Deductions for	
	a) Road set back area	0.00 Sq. mtrs.
	b) Proposed Area	0.00 Sq. mtrs.
	c) Any Reservations	0.00 Sq. mtrs.
	Total (a+b+c)	0.00 Sq. mtrs.

3	Balance area of plot (3-4)	571.20 Sq. mtrs.
4	Deduction for Recreational garden (if deductible)	0.00 Sq. mtrs.
5	Net area of plot (three minus four)	571.20 Sq. mtrs.
6	Additions for F.S.I index 100% set back handed over to MCGM	77.60 Sq. mtrs.
	2(a) 100%	
	2(b) 100%	
7	Total area (5+6)	648.80 Sq. mtrs.
8	F.S.I Permissible	1.00
9	FSI Credit	
	9(b) 0.33% as per DCR 32	
	9c) 0.67% as per DCR 32(2)	
	9d) TDR on CTS no. C/990A, C/991A,C/992	235.80 Sq. mtrs.
10	Permissible Floor Area as per FSI Summary Table	1124.83 Sq. mtrs.
11	Existing Area to be retained	410.57 Sq. mtrs.
12	Proposed Area	548.00 Sq. mtrs.
13	Total built up area proposed	958.57 Sq. mtrs.
14	F.S.I. consumed (15/7)	1.68
15	Balance area	166.26 Sq. mtrs.
	Parking Statement	
	Required Parking	9 Nos
	Provided Parking	9 Nos
	Building Structure	Ground Floor + 1st to 7 th Upper Floor
	Height of Building	26.00 Meters

Proposed development		
1	Existing Structure	Ground Floor + One upper floors
2	Structure of Building	Stilt + 1 st to 7 th upper floors including parking area.
3	Tenements existing	01 nos.
4	Tenements proposed	01 nos. (Rehab)
5	Height of Building from Ground level	26.00 Meters
6	Parking required as per MCGM	09 nos.
7	Parking provided	09 nos.
8	Emergency Power supply (D.G. Nos. x KVa	1 no. 35 KVa
9	Area required for D.G sets	5 sq. mt
10	Salient features of the project	
	<ul style="list-style-type: none"> • Earthquake Resistance Building structure • Rain water Harvesting System in the complex • Energy Conservation; Provision of Solar water heating system. • Eco-Friendly Measures • Optimum use of Timber 	

2.5.2 UTILITIES

The Utilities required during the construction phase area water, power, fuel and Labour.

i) **WATER** : (Expected Consumption – total 35 cum/day)

For Construction activities: 30 cum/day & For Domestic use: 5 cum/day

Water Balance (Construction Phase)				
Sr. No.	Consumption	Input m³/Day	Loss m³/Day	Effluent m³/Day
1.	Construction Activities	30	30 (Tanker consumption)	Nil
2.	Domestic (50 Site Workers)	5	1	4
Total		35	31	4

Anticipated Impacts-

- Increased water demand during construction phase for site preparation, water spraying for dust suppression, for construction activities, curing, domestic and other water requirements for labour and staff onsite
- Waste water disposal by construction labor and staff can lead to pollution.
- Water logging creates unsanitary conditions and mosquito breeding at site

Mitigation Measures –

- Wastage of water used for construction curing shall be avoided
- Proper management of channelization of water to avoid water logging at site.

Water Balance (Operation Phase)

Sr. No.	Component/ Head	Occupants	Water Requirement		Remarks
			Domestic	Flushing	
1	Total residential population	20	1.8	0.9	@ 90/45 lpcd
2	Total floating population*	30	0.6	0.75	@ 20/25 lpcd
4	Car washing	09	0.09 CMD		09 cars (@10L per car)
5	Total Quantity of Water Required	4.14 CMD			For a total population of 50 person.
6	Total Waste Water generation	3.18 CMD			3.19 CMD to grey water Treatment plant (capacity 5 CMD) after 1.5% evaporation losses
7	Sludge generated	0.03 CMD			-
8	GWTP treated recycled water	3.19 CMD			-

* - Floating population consists of drivers, servants, security personnel, etc.

1] Source: - Water will be available from Mumbai (MCGM) for domestic use and from Tanker for construction purpose

2] Storage: - Water for construction will be stored in open tank.

Drinking water will be stored in HDPE tank.

ii) POWER

DURING CONSTRUCTION

(Expected Consumption- about 0.3 MW)

1] An Electricity supply of 0.3 MW will be available from BEST. It is mainly required for some construction equipments, general lighting etc.

2] All Fire & Safety measures will be taken as appropriate and will be supervised by the Authority.

DURING OPERATION

Total Energy consumption: 0.15 MW

The electricity supply will be available from BEST/ TATA Undertaking.

iii) FUEL

DURING CONSTRUCTION PHASE

Diesel (5 L/day during excavation & 10 L/day post excavation).

All the equipment are electrically driven except JCB, poclain, and concrete mixers.

DURING OPERATION PHASE

Diesel will be required to run the D. G. Set in case of power failure. Hence the quantity of diesel consumed will vary depending upon the usage of D. G set.

1. Storage: Diesel and oil will be stored in drums / tins with proper identification mark/labels in identified areas only.
2. Fire and safety measures will be taken as per the guidelines from concerned authority.
3. All Safety and fire precautions will be followed.

iv) MANPOWER

DURING CONSTRUCTION PHASE

(Expected Manpower – about 50)

Approximately 50 persons will be working during the peak time of construction phase. These persons will be on the project site during 0900 hrs. Except Security Personnel, who will be on the field round the clock for twenty – four hours.

DURING OPERATION PHASE

POPULATION

There will be about 10 persons residing in the building, and 14 will be non residential staff including drivers, security, building maintenance staff, etc.

3. CONSTRUCTION PHASE

The type of Construction Materials, Equipments used during the construction phase and persons involved in various activities on the field affect the status of environment to a great extent. The impact of construction Activities on various components of environment on the on the project site and surrounding area is predicated in this section.

3.1 LIST OF MATERIALS

The approximate construction material required for the proposed redevelopment is given below-

Sr. No.	Item	Unit	Quantity	Source	Process
1.	Sand	CUM	295	River bed	Nil
2.	Aggregate	CUM	655	Quarry	Crushing
3.	Standard Bricks	Nos.	237	Red Soil	Heating, Moulding
4.	Timber	M.T	11	Forest	Cutting & Trimming
5.	Construction Waste	Kg/ Day	20	-	-

The basic engineering materials like aggregate, cement, sand and bricks/blocks will be purchased locally. However, finishing materials will be purchased keeping in mind the energy conservation aspect.

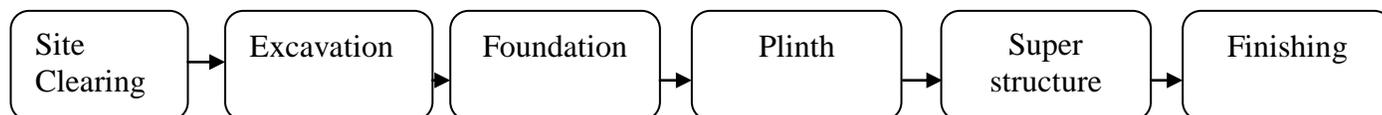
3.2 LIST OF EQUIPMENTS

The construction equipments required for the residential building is given below.

Sr. No.	Equipments	Numbers	Operation	Duration
1.	JCB, Poclain	1	Diesel	Short
2.	Dumpers	2	Diesel	Short
3.	Goods lifts / Personal lifts	1	Electric	Total
4.	Vibrators	4	Electric	Total
5.	Dewatering Pumps	1	Electric	Total
6.	Concrete Mixers	1	Electric	Total
7.	Wood Cutting Machine	1	Electric	Total
8.	Drill Machine	1	Electric	Total

3.3 CONSTRUCTION PROCEDURES

The outline of the construction procedure is described below schematically.



Note:

- 1] The project is expected to be completed within three years (Maximum) period. Construction Parameters and Quality will be strictly adhered to as per the approved architectural design data/map. All the regulations of government authorities will be followed.
- 2] All the safety precaution will be observed as per the guidelines during the construction phase. Personal Protective Equipments (PPE) will be provided to all the personnel involved in the construction activities.
- 3] Site barricading by corrugated tin sheets up to height of 5.0 mtr will be done to protect the surrounding area of the project site from nuisance /dusting.
- 4] All electrical connections & cables will be checked by authorized persons to ensure the safety of workers on field.
- 5] Water sprinkling will be done, wherever required to reduce the dusting in atmosphere. Jute barricading along building / plot boundary shall be provided to minimize noise level from construction activities.
- 6] The safety and security officers shall supervise the site.
- 7] Safety helmets will be mandatory to all the persons present on the site during the construction activities.
- 8] Hand gloves and dust masks will be provided to persons handling construction materials during the operation.

- 9] Safety belts will be provided to the persons working at height during the operation.
- 10] Safety nets will be arranged at a height at about 5.0mtr.when the structures get raised above the required height from the ground.

4. ENVIRONMENTAL CONCERNS

4.1 AIR POLLUTION

1] Source: - The source of Air Emissions is from the use of some equipment like concrete pumps, mixers, etc. These equipments consume Diesel as fuel during their operation. Carbon Monoxide, Hydrocarbons, Oxides of Nitrogen and Particulate Matter etc. will be the major pollutants.

Fugitive Emissions i.e. Emissions from construction activities will mainly consist of dust. Movement of Heavy & light vehicles, for loading and unloading of Construction Materials, transporting people, will also add on to source of emissions.

Parameter	Permissible Range	CPCB Limits	AVG Range Before Activity	During Activity
SPM ($\mu\text{g}/\text{m}^3$)	100 ~ 200	200	80-100	150-200
RSPM ($\mu\text{g}/\text{m}^3$)	50 ~ 100	100	20-30	50-100
SO ₂ ($\mu\text{g}/\text{m}^3$)	50 ~ 80	80	10-15	10-15
NO _x ($\mu\text{g}/\text{m}^3$)	40 ~ 80	80	5-10	5-10

Ref : 24 Hourly values as per Central Pollution Control Board, National Ambient Air Quality

Monitoring, Notification 11th April, 1994, Schedule 1.

4.2 AIR POLLUTION MITIGATION

Sr. No.	Source	Mitigation	
1.	Vehicle	i]	All the vehicles coming to the site will be ensured to be in good condition having PUC.
		ii]	Public awareness to use Green Fuel will be done.
2.	Solid Waste	i]	Proper segregation and collection of waste will be ensured.
		ii]	Location of loading and unloading will be fixed.
		iii]	Good Housekeeping practices will be ensured at the premises.
3.	Construction Activities	i]	Noise / Dust nuisance preventions by barricading site up to 5.0 meter height by GI Sheets
		ii]	Water sprinkling on dry site, sand.
		iii]	Maximum use of electrical driven construction equipments with regular maintenance.

4.3 WATER POLLUTION

1] **Use** : - The MCGM water will be used for domestic purpose i.e. drinking water for staff and laborers working on the field whereas bore well water/Tanker water will be used for various constructions activities like, Concreting, Plastering , Flooring & Finishing etc.

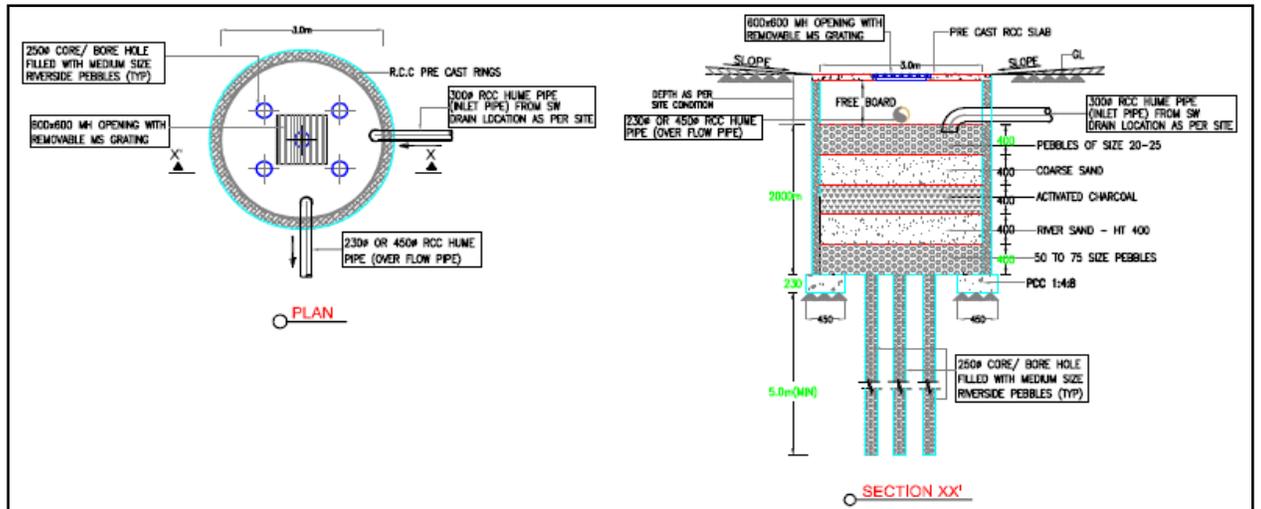
2] **Effluent** : - There will be no generation of effluent from construction activities as the water used for concreting; Plastering, Flooring and Finishing etc. will get evaporated during drying or curing time. All the construction activities are physical in nature. The Domestic Effluent will be generated due to the persons working on the site who will require water for drinking, cleaning, bathing etc.

3] **Treatment & Disposal** :-The Domestic Effluent generated in construction phase will be disposed off in existing MCGM Sewer.

4] **Rain Water Harvesting** : The plot is already covered with dilapidated Ground floor + One upper floor structure and same will be developed in Ground + 1st to 7th Upper Floor for Residential Building. The plot area is 571.20 sq mtrs, which is very small. Hence roof rain water harvesting is proposed in the project. The permeable paver blocks are proposed along with 1 Recharge pit to increase the percolation of rain water into the soil rather than flowing to the drain.

*** (AS PER MOEF GUIDELINES)**

- **Percolation Pits: 1 no. (0.5 * 0.5 * 2m)**



5] Storm Water Discharge:

Storm water drains will be constructed for proposed facility as per the norms. The recharge pits and Rain water recharge pits will help to reduce the run off and reduce the load on external storm water drain.

4.4 NOISE POLLUTION

Location	Range dB (A)
	Day Time
National Ambient Air Quality Standards (For Residential Zone)	55

4.5 NOISE LEVEL MITIGATION

Sr. No.	Source	Mitigation
1.	Near Residential Areas	i] Site Barricading by corrugated tin sheets will be done to protect the surrounding area. ii) Construction Activity will be carried out during daytime only.
2.	Nearby Traffic	i] All the vehicles coming to the site will be ensured in good condition, having Pollution Under Check (PUC). ii] Smooth Roads will be maintained in a project site.
3.	Construction Equipments	i] All the equipments will be run during daytime only. ii] Lubricants will be applied to all the equipments at proper interval. Iii] Acoustic Enclosure will be provided for all the Equipments

2] It is evident from the nature of operation (i.e. construction) that the Concentration of suspended particulate matter would be higher than the other two parameters.

3] Control of Emission: - Proper precaution will be taken to reduce the particulate matter by water sprinkling on the dry site area, barricading the periphery by corrugated tin Sheets of 5.0 mtrs height to protect the surrounding area from dusting. The pollution generated will be controlled by, allowing vehicles that will comply to mass Emission Standard (Bharat Stage –II) stipulated by Central Pollution Control Board (CPCB)–Ministry of Environment & forest (MoEF), New Delhi. Also it will

be ensured that the vehicles will carry PUC certificate. To minimize air pollution efforts shall be made by use of equipments, which are electric power driven.

4.6 SOLID WASTE

1] Normal debris, waste concrete, soil, broken bricks, waste plasters etc. will be collected properly and will be reused for land filling in the premises.

2] Total solid waste (Quantity about 12.00 kg per day) and organic waste (03.70 Kg/ day) will be segregated properly and stored in separate bins and will be disposed off as per MCGM rules.

3] Metallic Waste and paper waste will be collected separately and will be salvaged or recycled or sold to authorized recyclers.

5. PROJECT SCHEDULE AND COST ESTIMATES

The Proposed Project is Redevelopment project and will be started as soon as all government NOC's and CRZ Clearance is received to start the work. The projected Date of Start is December 2016 while the Date of completion will be December 2019 if everything went as per planning.

6. TRAFFIC MANAGEMENT

6.1 CONSTRUCTION PHASE

- Storage and Godown area will be properly identified.
- There will be about adequate wider space for movements of vehicles and parking.
- The area for loading and unloading will be located at proper demarcated location in the premises.
- Thus the traffic management on the project site will be easily and smoothly monitored without any hindrance to the regular flow of traffic on the main road.

6.2 OPERATIONAL PHASE

- About 09 cars per day are expected to be accommodated in the premises. The parking space will be provided in basement and under stilt / parking floors. There is ample car parking space in the building on all sides; there will be smooth movements of cars.
- There will be 6.0 mtrs wide approach road to the building from municipal road for movements of vehicles and parking.
- Traffic Management Plan system will be approved from concern MCGM Authority.
- Thus the traffic management will be easily and smoothly monitored without any hindrance to the regular flow of traffic on the main road.

7. ENVIRONMENTAL, HEALTH AND SAFETY

All the safety and security measures shall be observed at constructions site. Safety precautions will be observed as per the guidelines during the construction phase. Personal Protective Equipments (PPE) will be provided to all the personnel involved in the construction activities. The project authorities will ensure use of safety equipments for workers during execution process. The safety and security officers shall supervise the site. Proper training will be given to workers and authorities to handle the hazard situation.

7.1 SAFETY MEASURES ON SITE

- 1] Parameters and Quality will be strictly adhered to as per the approved architectural design data/map. All the regulations of government authorities will be followed.
- 2] All the safely precaution will be observed as per the guidelines during the construction phase. Personal Protective Equipments (PPE) will be provided to all the personnel involved in the construction activities.

- 3] Site barricading by corrugated tin sheets up to height of 5.0 mtr will be done to protect the surrounding area of the project site from nuisance /dusting.
- 4] All electrical connections & cables will be checked by authorized persons to ensure the safety of workers on field.
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- 6] The safety and security officers shall supervise the site.
- 7] Safety helmets will be mandatory to all the persons present on the site during the construction activities
- 8] Hand gloves and dust masks will be provided to persons handling construction materials during the operation.
- 9] Safety belts will be provided to the persons working at height during the operation.
- 10] Safety nets will be arranged at a height at about 5.0 mtrs when the structures get raised above the required height from the ground.

8. BENEFITS OF THE PROJECT

- The proposed redevelopment will initiate redevelopment of surrounding old building.
- The surrounding area will also be developed from residential point of view.
- It will provide employment opportunities to the local people in terms of labour during construction and services personnel during operational phase.
- Modern sanitation and infrastructure facilities will have minimal impact on living condition of local people.
- The project will improve living standard and welfare of the area and local people.

SEISMIC ZONE MAP OF INDIA

