1. INTRODUCTION TO PROJECT

After recognizing the need of redevelopment of dilapidated structure to "residential building" on the plot bearing C.S. No. 590, of Malabar Hill Division, Mumbai, the same is now being redeveloped by M/s Kupati Builders Pvt. Ltd. & Kapi Builders Pvt. Ltd. The developer is going to construct a new building of a Two of basement (car parking and services) + stilt floor for parking + 1st to 9th floor for parking + 10th to 25th floor for residential use. The proposal involves demolition of the existing old dilapidated building, as declared unsafe prior to 6th Jan 2011.

The plot under reference falls within 500 mtr. from H.T.L. of Arabian Sea. As such, it attracts MoEF guidelines & CRZ regulation. 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 old DP. The user of "Residence" was permissible as per land use and zoning as on 19/02/1991.

The proposal involves demolition of existing old CESS category and declared unsafe and dilapidated building (Declared prior to 6th Jan 2011). Hence the proposal is submitted for redevelopment as per provisions contained in clause 8(V)(1)(ii)(c) of CRZ 2011 Notification. MHADA vide their letter dated 25.04.2017, has allowed the owners to process the proposal under normal DCRs without processing under 33(7). Hence the proposal is submitted consuming captive FSI+admissible TDR+admissible fungible FSI+ Free of FSI areas as per DCRs in force as on TODAY.

The site under reference is affected by **CRZ-II zone**. It is within 500 mtrs. from the HTL of Arabian Sea. It is on the landward side of the existing authorized structures, as can be seen from the Tikka Sheet, in existence much prior to 1967. Hence the work is permitted subject to the approval of CRZ clearance. Thus property attracts the CRZ legislation, which is reflected in CZMP plan.

The development site does not fall or contain the environmentally sensitive areas as specified in the Coastal Regulation Zone notification.

The total cost of the project is Rs.182,36,56,000/- (Rupees One hundred and eighty two Crores, thirty Six Lakh and Fifty Six Thousand Only) as per the valuation report.

1. PURPOSE OF THE REPORT

Proposed redevelopment of plots bearing C.S. No. 590, of Malabar Hill Division, Mumbai and thereby obtain CRZ Clearance as per clause 33(7) of DCR – 1991 in force as on 6th January 2011. The Plot is occupied by a dilapidated structure. The said dilapidated category structure is now proposed to be redeveloped on the plot. The present proposal envisage the redevelopment by availing captive FSI+ admissible TDR+ admissible fungible FSI+ Free of FSI areas as per DCRs in force as on TODAY.

As the site under reference is affected by CRZ-II zone, it attracts the CRZ legislation as per 6th January 2011 notification for Coastal Regulation Zone (CRZ and the regulating activities in the CRZ).

2. DESCRIPTION OF THE PROJECT

3.1 NATURE OF THE PROJECT

This is a proposal for redevelopment of residential building situated at C.S. No. 590, of Malabar Hill Division, Mumbai, in CRZ-II belt, as the same is situated within 500 mtr. from Arabian Sea. The proposal is for redevelopment of residential building, which is situated on the landward side of authorized structures, as can be seen from the Tikka Sheet, in existence much prior to 1967. The Plot

is situated in Residential zone and not under any reservation as per 1967 DP as well as Revised 1993 DP.

3.2 SIZE OF THE PROJECT

Total Area of the said plot is 2437.31 sq. mtrs. Cost of the Project is Rs.182,36,56,000/- (Rupees One hundred and eighty two Crores, thirty Six Lakh and Fifty Six Thousand Only).

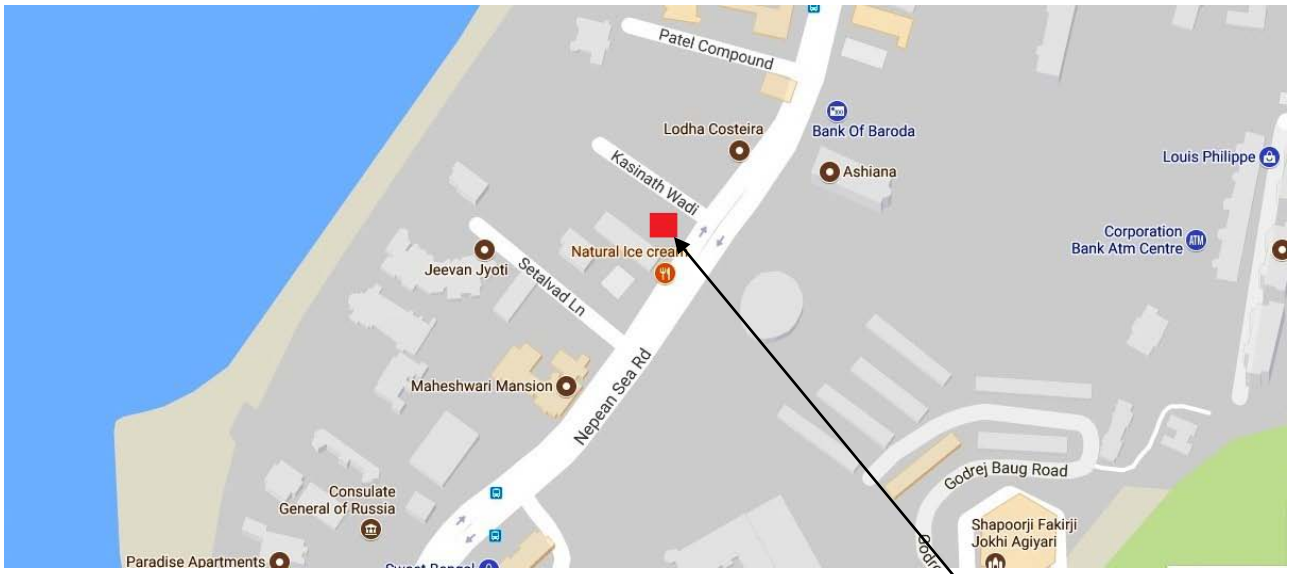
3.3 LOCATION

The C.S. No. 590, of Malabar Hill Division, Mumbai,is in the heart of the city. The nearest railway station is Grant Road Railway Station, 2.0 kilometers on the Western line.

Google Earth Image of the site

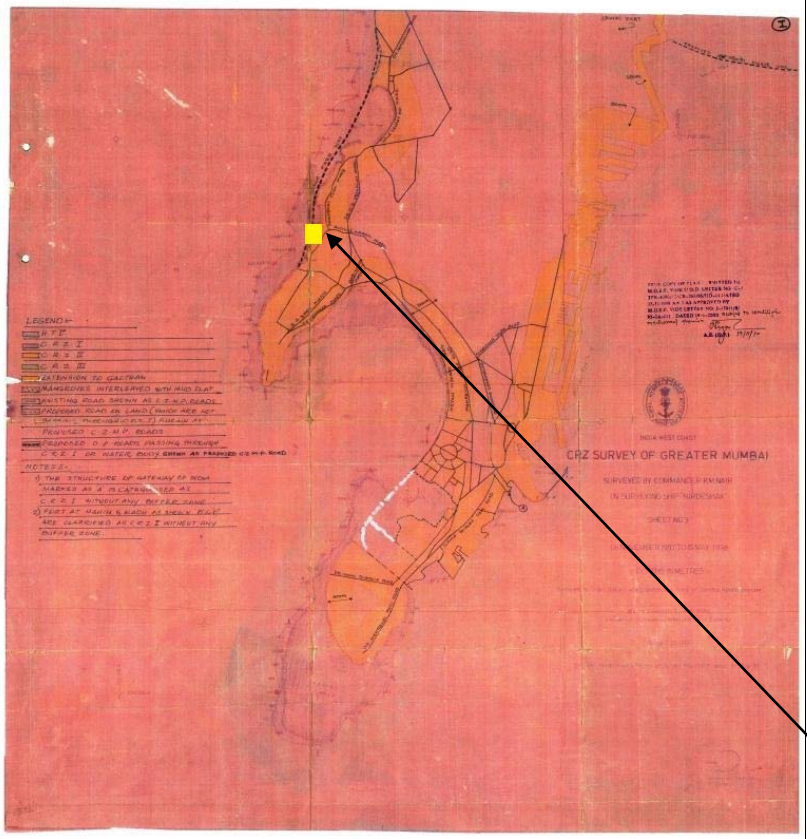
SITE UNDERREFERENCE

Location map of the site



SITE UNDER REFERENCE

CZMP Plan showing location of reference Plot



SITE UNDER REFERENCE

3.4 SITE DESCRIPTION

The site under reference is affected by CRZ-II zone and the property falls on landward side of the authorized structures, as can be seen from the Tikka Sheet, in existence much prior to 1967. 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.

Town / Tehsil	:	Mumbai
District	:	Greater Mumbai
State	:	Maharashtra
Latitude	:	**18°57'45.62"N**
Longitude	:	**72°48'8.08"E**

3.5 PROPOSED DEVELOPMENTS

3.5.1 AREA STATEMENT

A	Area Statement	Total (in sq.mt)
1.	Area of plot	2437.31 m^2
2.	Deductions for	
	a) set back area	98.25 m^2
	b) Proposed Road	0.00 m^2
	d)Any Reservation	0.00 m^2
	d) Total of a+b+c	98.25 m^2
3.	Balance Area of plot (Restricted for FSI Purpose)	2339.06 m^2
4.	Deductions for	0.00 m^2
	a) Recreational Ground area	0.00 m^2

	b) Internal Road	0.00 m^2
	c) Total a +b	0.00 m^2
5.	Net area of plot	2125.00 m^2
6.	Additions for FSI purpose	
	a) set back area	98.25 m^2
7.	Total Area (3+6a)	2223.25 m^2
8.	FSI Permissible	
	a) Plot Potential (2125.00 x 1.33)	2826.25 m^2
	b)TDR Permissible on Plot (0.456 x 1.33)	1066.61 m^2
9.	c) FSI Permissible for Set Back Area (98.25 x 2.50)	245.62 m^2
10.	Total Permissible Built Up Area (8a +8b +8c)	4138.48 m^2
11.	Existing Built Up Area	0.00 m^2
12.	Proposed Built Up Area	4094.62 m^2
13.	Excess Balcony Area	0.00 m^2
14.	Total Built Up Area	4094.62 m^2
15	Balance Built Up Area	0.00 m^2
	Details of FSI Availed as per DCR 35 (4)	
1	Fungible BUA component proposed vide DCR 35 (4) for purely Proposed Tenement (4094.62 x 35%))	1433.12 m^2
2	Fungible BUA component proposed vide DCR 35 (4) for Non Residential	0.00 m^2
3	Total Fungible BUA vide DCR 35 (4)	1433.12 m^2
4	Total Gross Built Up Area Proposed	5527.74 m^2
	Building Structure	One Basement + Ground Floor + 1^{st} to 25^{th} Upper floors
	Height of Building	97.00 Meters

PROJECT DEVELOPMENT DETAILS

Proposed development		
1	Structure of Building	a Two of basement (car parking and services) + stilt floor for parking + 1st to 9th floor for parking + 10th to 25th floor for residential use
2	Tenements existing	
3	Tenements proposed	32 Nos.
4	Height of Building from Ground level	97.00 Meters
5	Emergency Power supply (D.G. Nos. x KVa	1 no. 500 KVa
6	Salient features of the project	
	• 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	

3.5.2 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 m^3/Day**	**Loss m^3/Day**	**Effluent m^3/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 labour 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

• One STP shall be provided for treatment of sewage

• Proper management of channelization of water to avoid water logging at site.

Sr. No	Component/Head	Occupant load	Water Requirement m^3/day		Remarks
			Domestic	Flushing	
8.	Total Residential population	224	20.16	10.08	@ 90/45 lpcd
2.	Total non residential population	48	0.96	1.2	@ 20/25 lpcd
3.	Total Quantity of Water Required	32.40 CMD			For a total population 285 Nos. of people.

4.	Car Washing Water Requirement	3.89 CMD	(@10 Litres per car)
5.	Garden Water Requirement	2.25 CMD	
4.	Sewage generation	25.43 CMD	The sewage will be sent to STP of capacity 41 CMD, which after treatment will be used for flushing and non domestic use like car washing, gardening, etc
5.	Sludge generated	0.52 CMD	
6.	Sewage treatment plant treated water	25.38 CMD	

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.

Anticipated Impacts

• Lowering the infiltration capacity and increased run off

• Increased run off, Water logging in the low lying areas

• Stress on existing water supply & generation of waste water.

Mitigation Measures

• Provision of storm water drainage system with adequate capacity & proper maintenance of storm water drainage

• Use of water efficient technologies to reduce water consumption

• Treatment of waste water into Sewage Treatment Plant Recycling of STP treated sewage for flushing and gardening

i) **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: 0.65 MW

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

ENERGY SAVING MEASURES

The following Energy Conservation Methods are proposed in the project:

- Solar & LED Lights for common area use.
- Use of Solar System for Hot water Requirement.
- DG sets will be kept 6m or more away from Buildings.

ii) FUEL

DURING CONSTRUCTION PHASE

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

All the equipment are electrically driven except JCB, porcelain, 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) POWER

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 224 persons residing in the building, 48 persons will be non residential staff including drivers, security etc. in the building.

v) DEMOLITION WASTE AND CONSTRUCTION WASTE MANAGEMENT

As per the G.S.R. 317(E), dated 29.03.2016, Construction and Demolition Waste Management Rules, 2016,

"*(4) Duties of the waste generator -*
(1) Every waste generator shall prima-facie be responsible for collection, segregation of concrete, soil and others and storage of construction and demolition waste generated, as directed or notified by the concerned local authority in consonance with these rules.

(4) Every waste generator shall keep the construction and demolition waste within the premise or get the waste deposited at collection centre so made by the local body or handover it to the authorized processing facilities of construction and demolition waste; and ensure that there is no littering or deposition of construction and demolition waste so as to prevent obstruction to the traffic or the public or drains.

(5) Every waste generator shall pay relevant charges for collection, transportation, processing and disposal as notified by the concerned authorities;"

The project proponent will apply to the The Collector and District Magistrate Office, Mumbai City and the Solid Waste Management Department, M.C.G.M., for "Permission for handling, transportation & dumping" of debris and construction waste generated under "Debris Management

Plan" for the project and dump the demolition and construction waste at said the permission letter given by MCGM.

The following care will be taken-

1. The developer will barricade along the boundary of the plot to sufficient height (i.e. Minimum 20 ft.) so as to avoid escape of dust particles, as well as deposit to spreas on street/ footpath, drains, etc
2. The developer will make arrangement to cover the vehicles deployed, to be covered by tarpaulin or other suitable material.
3. Desinated transport Contractor and designated vehicles with given numbers, on the permissions, with designated path will be followed.

4. 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.

4.1 LIST OF MATERIALS

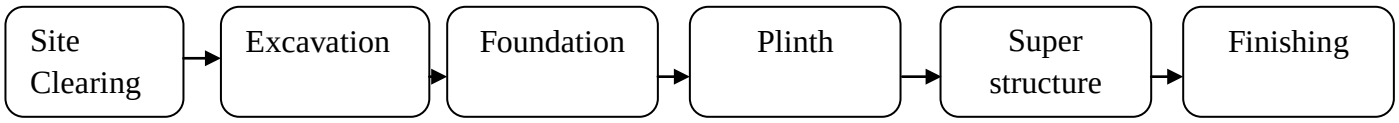
The approximate construction material required for the proposed redevelopment is given below.

Sr. No.	Item	Unit	Quantity	Source	Process
1.	Sand	CUM	7010	River bed	Nil
2.	Aggregate	CUM	15594	Quarry	Crushing
3.	Standard Bricks	M.T.	5644	Red Soil	Heating, Moulding
4.	Timber	M.T.	256	Forest	Cutting & Trimming
5.	Construction Waste	Kg/ Day	481	-	-

- 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.

4.2 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 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 6.5 mtrs 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. 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 handing 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.

4.4 SEISMICITY:

Seismic zone map was initially based on the amount of damage suffered by the different regions of India because of earthquakes. Following are the varied seismic zones of the nation,

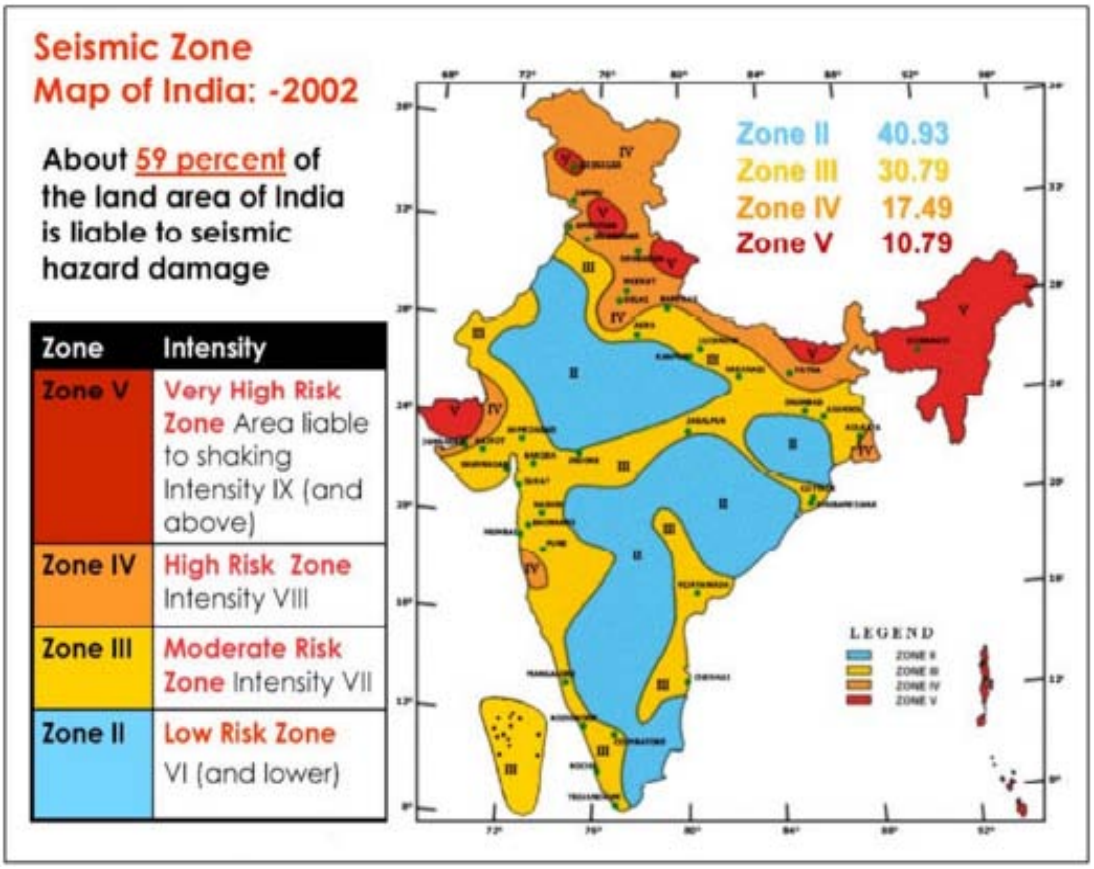
• Zone - II: This is said to be the least active seismic zone.

• Zone - III: It is included in the moderate seismic zone.

• Zone - IV: This is considered to be the high seismic zone.

• Zone - V: It is the highest seismic zone.

Proposed project and Study Area comes under Seismic Zone III.



5. ENVIRONMENTAL CONCERNS

5.1 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	Average Range at Colaba*	Permissible Range	CPCB Limits
SPM ($\mu g/m^3$)	159	100 ~ 200	200
RSPM ($\mu g/m^3$)	52	50 ~ 100	100
SO2 ($\mu g/m^3$)	5	50 ~ 80	80
NO_2 ($\mu g/m^3$)	18	40 ~ 80	80
NH_3($\mu g/m^3$)	47	40 ~ 80	80

Ref:

1. 24 Hourly values as per Central Pollution Control Board, National Ambient Air Quality Monitoring, Notification 11th April, 1994, Schedule 1.
2. *The 24 hourly average concentrations of SPM, RSPM, PM10 and gaseous pollutants at Colaba, Air Quality Assessment, Emissions Inventory &Source Apportionment Studies: Mumbai, November 2010.

5.2 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.

5.3 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.

Sewage generated during operation phase will amount to 25.43 CMD which will be treated in the Sewage Treatment Plant. The treated water will be used for non domestic purposes such as gardening, flushing, car washing, etc.

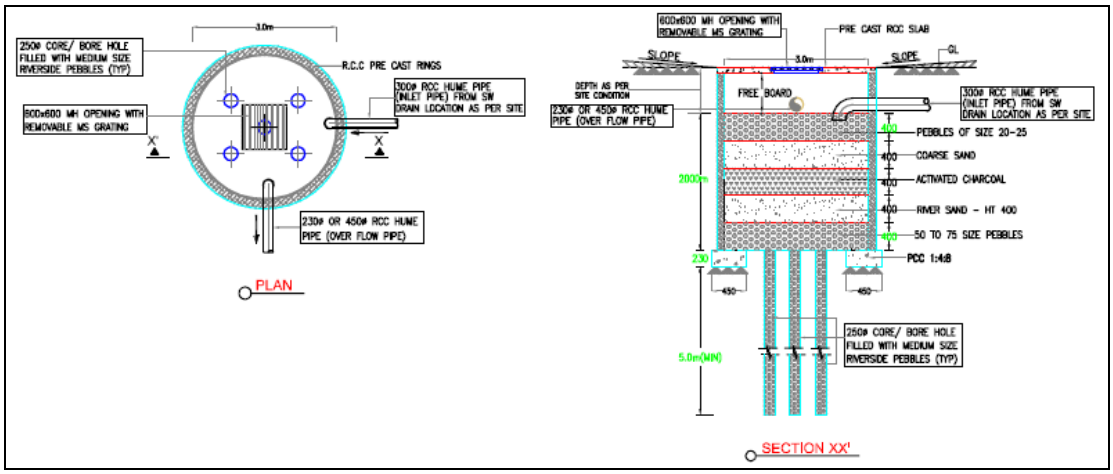
3] **Treatment & Disposal**: - The Domestic Effluent generated in construction phase will be disposed off in existing MCGM Sewer.

4] **Rain Water Harvesting**: - The Plot is occupied by a dilapidated building. The said building is now proposed to be redeveloped. The plot is already covered with dilapidated structure. The said building is now proposed to be redeveloped in basement (car parking and services) + stilt floor for parking + 1st to 9th floor for parking + 10th to 25th floor for residential use. Roof rain water harvesting is proposed in the project. The permeable paver blocks are proposed along with Recharge pits to increase the percolation of rain water

into the soil rather than flowing to the drain.

*** (AS PER MOEF GUIDELINES)**

- **Percolation Pits: (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.

5.4 NOISE POLLUTION

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

5.5 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 –III) 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 area electric power driven.

5.6 SOLID WASTE MANANGMENT DURING OPERATIONAL PHASE

1] The project proponents have proposed provision for segregation and collection of biodegradable & non-biodegradable waste within the premises.

2] Solid transfer stations have been proposed for collection, sorting, segregation, storage & transportation of biodegradable and non-biodegradable waste.

Calculation for quantum of solid waste to be generated in the building:

- Total no of persons = 272 persons
- Generation of Total waste per person = 500 grams/day (as per Solid waste management study – Year - 2005 conducted by NEERI)
- Total solid waste generation will be 285 x 500 gms/person/day = 136.00 Kg
- Generation of organic waste = 30.84% of total waste (ref. Table 2 in next page)
- So total organic waste generated by the occupants = 136 x 0.3098 grams = 41.88Kg by all occupants of the building.
- We will provide one bins of each capacity 10 kg at every landing.
- Dry waste will be collected separately in wheeled bins as required as per MCGM guideline and transported to common collection area by MCGM.
- Segregation of non biodegradable and biodegradable garbage on site.
- Bio degradable garbage: Treatment in OWC (Organic Waste Convertor)
- Non- biodegradable garbage: Segregated into recyclable and non-recyclable waste.
- Recyclable waste: Handed over to recyclers and
- Non-recyclable waste: Handed over to M.C.G.M.
- STP Sludge (Dry sludge): Used as manure within the premises for plants.
- We will provide two bins of each capacity 5 kg at every landing.
- The debris generated due to demolition and excavated material shall be partly reused on site and partly shall be disposed off to authorized Landfill sites with permission from M.C.G.M.

Source: Municipal Solid Waste Management in India: Present Practices and Future Challenge, Sunil Kumar,

http://www.cd3wd.com/CD3WD_40/ASDB_SMARTSAN/Kumar.pdf

Table 1

Per Capita Quantity of Municipal Solid Waste in Indian Cities (NEERI, 1996)

Population Range (in million)	Average Per Capita Value kg/capita/per day
1.0 – 0.5	0.21
0.5 – 1.0	0.25
1.0 – 2.0	0.27
2.0 – 5.0	0.35
> 5.0	0.50

Table 2

Physico-chemical Characteristics of MSW in Indian Cities (NEERI, 1996)

Population range (in million)	Number of cities surveyed	Paper*	Rubber*, leather and synthetics	Glass*	Metals*	Total* compos-table matter	Inert* material	Nitrogen+ as Total Nitrogen	Phosphorous+ as P_2O_5	Potassium+ as K_2O	C/N ratio	Calorific value in Kcal/kg
0.1 to 0.5	12	2.91	0.78	0.56	0.33	44.57	43.59	0.71	0.63	0.83	30.94	1009.89
0.5 to 1.0	15	2.95	0.73	0.35	0.32	40.04	48.38	0.66	0.56	0.69	21.13	900.61
1.0 to 2.0	9	4.71	0.71	0.46	0.49	38.95	44.73	0.64	0.82	0.72	23.68	980.05
2.0 to 5.0	3	3.18	0.48	0.48	0.59	56.67	49.07	0.56	0.69	0.78	22.45	907.18
>5	4	6.43	0.28	0.94	0.80	30.84	53.90	0.56	0.52	0.52	30.11	800.70

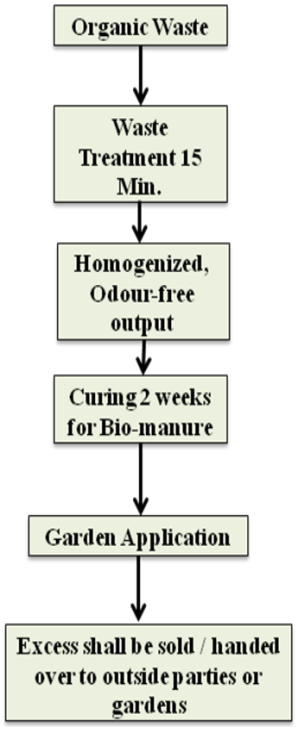
* All values are in percent, and are calculated on wet weight basis

+ All values are in percent, and are calculated on dry weight basis

A sample waste collection bin to be Kept in lobby area

Bins recommended by BMC to be used for shifting the waste from building to common area

We will be using organic waste converter to treat and create manure from the organic waste. Manure generated will used for plantation and gardening purpose.



ORGANIC WASTE CONVERTER COMPOSTING PROCESS

6. 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 Jan 2018 while the date of completion will be June 2022 if everything went as per planning

7. TRAFFIC MANAGEMENT

7.1 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.

7.2 OPERATIONAL PHASE

- About 164 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 having width of 18.30 m.

8. 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.

8.1 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 6.50 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 5.0 mtrs when the structures get raised above the required height from the ground.

9. 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.