EXECUTIVE SUMMARY

for

Reconstruction of Existing Building Project

at

Property bearing C. S. No. 577, Malabar Hill Division, Nepean sea Road, (L.J. Marg), Mumbai.

Developer

M/s. ADROIT ESTATE DEVELOPERS PVT. LTD.

INTRODUCTION:

It is a Reconstruction project undertaken **by M/s. Adroit Estate Developers Pvt. Ltd** for the Reconstruction of Existing building on Property bearing C.S. No. 577 of Malbar hill division, at Neapean sea road, L. J marg, Mumbai, Maharashtra.

Since it is reconstruction project, there will be no significant changes in existing land use pattern by proposed project. The proposed project is in accordance with the approved Development Plan of Mumbai. The existing land use pattern is Residential.

The design of this project and utilities is thoroughly planned with the objectives of providing facilities to the people and keeping the mind on sustainable development.

The Site is well connected by road networks.

1.1 NEED OF PROJECT:

The existing structures on the site were old and in dilapidated condition, any further repair to the structures was not possible, hence there was urgent attention and need for the rehabilitation of existing members through the redevelopment of old & Dilapidated structures under “D. C. Regulations of 33 (6)”. Under the proposed scheme the existing inhabitants if any will get new housing tenements with all basic amenities with better infrastructure. The entire complex will be provided with proper water supply, drainage facility and access road.

The proposed project falls under CRZ-II on Land-word side of authorized structure as per CZMP.

Generally it is envisaged that some of the developmental activities adjacent to coastal area or marine areas would inevitably interact with marine environment causing short and long-term physical, chemical and biological changes. Unless adequate preventive and control measures are planned and implemented, these changes may cause disturbances to coastal environment due to alterations in marine water and sediment quality and also entail disruption of environmental quality along the coastline. Therefore, measures are required to be taken well in advance to protect sensitive areas, viz. ecological, commercial fishing and recreational. Offshore developments thus aggravate such problems posing new challenges for environmental management.

In order to minimize adverse impacts on the marine / coastal environment, it is therefore essential that preventive and control measures are delineated, incorporated and implemented by company in their further developmental plans.

1.2 PROJECT DESCRIPTION:

Proposed **"Reconstruction of Existing building Project"** [under D. C. Regulations of 33 (5)] the proposed project comprises of following:

Basement + stilt + 1 to 10 floors Parking floors + 11 to 28 th floors residential.

The photographs of buildings are given in Figure 1.1 below.

Figure 1:1 Photographs of Building

1.3 APPLICABILITY OF CRZ NOTIFICATION

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). According to para 4 (d) of CRZ notification 2011, the proposal for the construction in the areas falling in CRZ-II shall be approved by the concerned State or Union territory Planning authorities. In accordance with this notification one can obtain recommendations from the concerned CZMA and subsequently CRZ clearance accord on the basis of requisite documents like Form I, CZMP map, DP plan etc.

1.4 IDENTIFICATION OF PROJECT PROPONENT

M/s Adroit Estates Developers Pvt. Ltd. has proposed reconstruction of existing building project on subjected land. The details of the project proponent are given in Table1.1.

Table-1.1: Details of Contact Person

Sr. No.	Particular	Details
1	Name of Developer	M/s Adroit Estates Developers Pvt. Ltd.
2	Name of Contact person	Mr. Kanti G. Gowani.
3.	Designation of Contact person	Director
4.	Contact No	+91-9821064884
5.	Email	kggowani@gmail.com
6.	Address	M/s Adroit Estates Developers Pvt. Ltd 302 , Tardeo aircondition market , Tardeo , Mumbai-400034

1.5 LOCATION OF THE PROJECT

The proposed project admeasuring about 1841.98 sq. m. of plot area is situated on C. S No. 577 of Malabar Hill Division in D Ward, Mumbai. The Google image of the proposed site is given in Figure 1.2 and Location of Proposed Project on CZMP Map is given in Figure 1.3.

figure 1.2 :Location of Proposed Project on Google Image

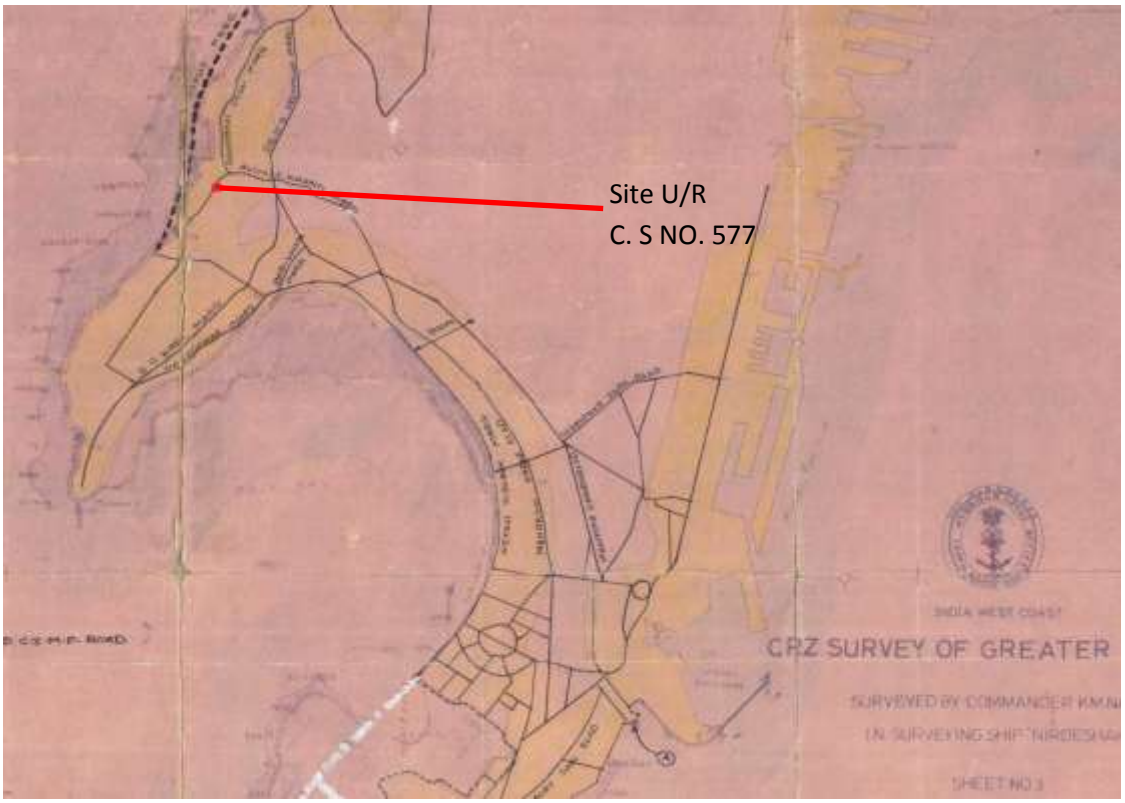

Fig. 1.3: Showing Location of Proposed Project on CZMP Map

1.6 DESCRIPTION OF PROJECT SITE

The proposed project has existing Neapean sea road at Malabar hill. The environmental features are illustrated in given Table 1.2 given below.

Table-1.2: Environmental Setting of Proposed Project

Sr. No.	Particulars	Details
1	Latitude	18^0 57' 46.93" N
2	Longitude	72^0 48' 11.64" E
3	Elevation above MSL	14.02 m above Mean Sea Level
4	Climatic Conditions	Maximum Temperature :32 °C Minimum Temperature :25 °C Annual Rainfall :242.2 cm
5	Present land use at the proposed site	Residential
6	Transport Connectivity	
A	Nearest Highway	Neapean Sea road.
B	Nearest Railway Station	Grant road Railway Station (2 km – NE)
C	Nearest Road	Neapean Sea road.
7	Social Aspect	
A	Nearest School/College	Sophiya college (2.5E) Willson College (2 km - NE) Prajali International School (0.3 km -NE)
B	Nearest Hospital	Breach Candy Hospital (1km - NE)
C	Nearest Fire Station	Malabar Hill
8	Hills/Valleys	Nil
9	Ecologically sensitive zones within 15-km distance	CRZ - II
10	Seismic Zone	Zone – III

1.7 PROJECT LAYOUT

The proposed project is Reconstruction of existing building project which comprises of Basement + stilt + 1^{st} to 10^{th} parking floors + 11^{th} to 28^{th} Upper residential Floors for residential purpose. The plan showing the location plan and block plan of the proposed project are shown in Figure 1.4 and 1.5 respectively.

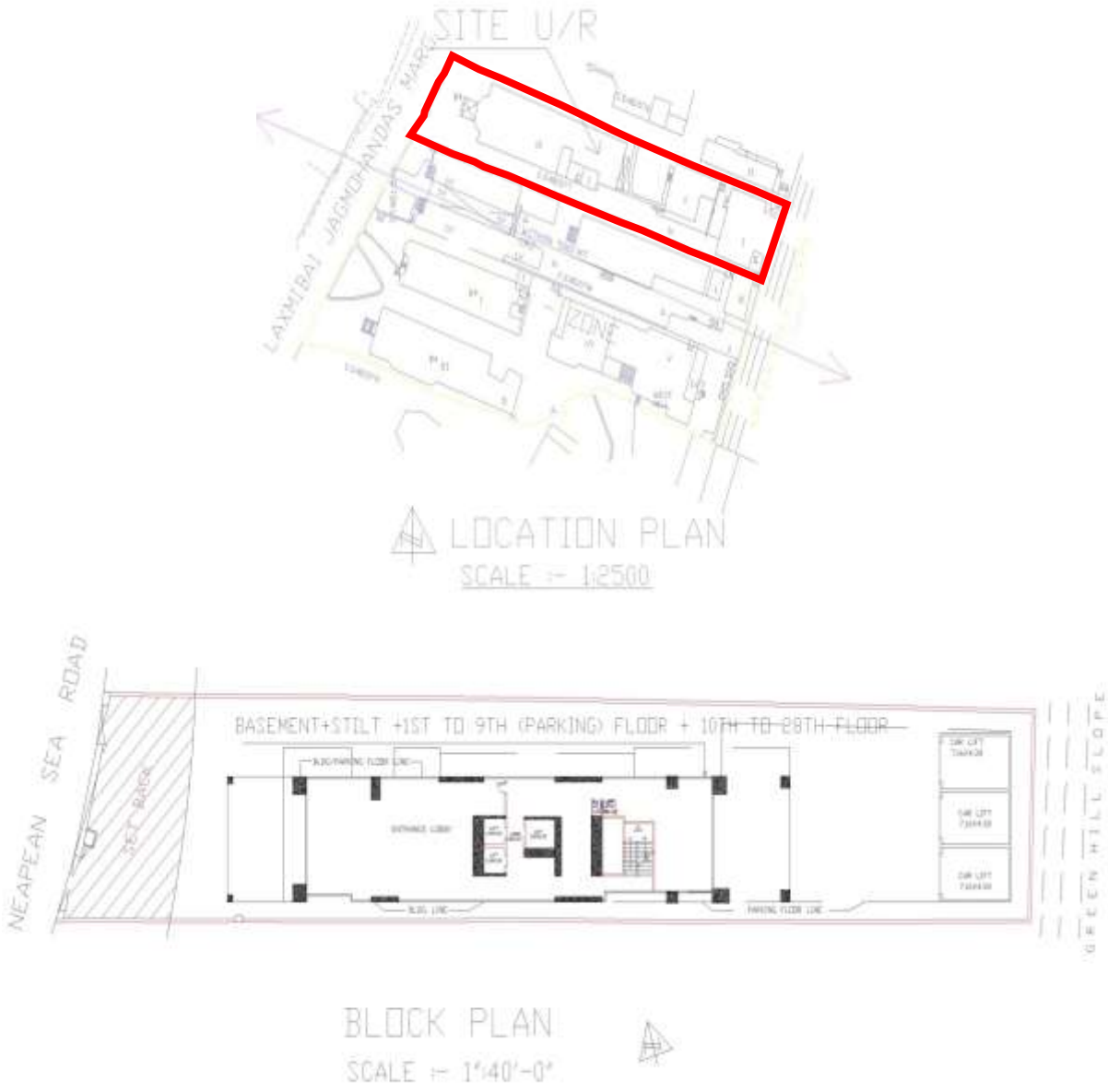

Figure 1.4: Location Plan & Block Plan of the Proposed Site

1.8 BRIEF DESCRIPTION OF PROJECT

The brief description of the proposed project is given Table 1.3.

Table 1.3: Brief description of the project

#	Particular	Details
1	Project Type	Residential
2	Location	D Ward
	CTS No	CTS No. 577
	Village	Malabar Hill division
	Tehsil	
	District	Mumbai
	State	Maharashtra
3	Site fall under CRZ I/II/III	CRZ - II
4	Distance of proposed building from HTL	176.34 m (approx.)
5	Proposed Plot Area	1841.98sq. m
6	Permissible FSI	1.33
7	Permissible BUA	2449.83 sq. m
8	Proposed BUA	2416.84 sq. m
9	Total Construction area	sq. m
10	No of Building	1
11	Configuration of proposed Buildings	Basement + Stilt + 1st to 10th Parking Floors + 11th to 28th Upper Floors.
12	Population	248 (Residents + visitors)
13	Water	
a	Source	MCGM
b	Total water requirement	33 KLD
c	Total sewer generation	27 KLD
d	Mode Of Disposal	Excess wastewater to Municipal Sewer line.
14	Solid Waste Generation	409 kg/day
	Mode of Disposal	In house management - OWC/Handed over to MC
16	Power	
a	Requirement	Connected Load: 100 KW Maximum Demand: 930 KVA
b	Source	B. E. S. T
17	Project cost	13 Crore.
18	Parking Details	Parking Provided: 99 Nos.

2.0 DESCRIPTION OF THE ENVIRONMENT

2.1 METEOROLOGICAL

Relative Humidity	***Temperature***	***Rainfall***
Climate of district Mumbai can be generally classified as warm and moderately humid. Relative humidity ranges from 32 % in April to 82 % in July.	Annual Mean Maximum Temperature: 32 °C Annual Mean Minimum Temperature: 30.5 °C	Total Mean Annual Rainfall: 2422mm

2.2 AMBIENT AIR QUALITY

The range of average values of the pollutants is as below.

Parameters	Range of Pollutants Present	Unit
SO_2	19.0 – 29.0	$\mu g/m^3$
NO_x	26.5 – 42.0	$\mu g/m^3$
RSPM	78.0 – 168.0	$\mu g/m^3$

2.3 NOISE LEVEL

Day Time Noise Levels [(L_{day})]

The noise levels ranged between 44.00 dB (A) to 53.10 dB (A).

Night Time Noise Levels (L_{night})

The noise levels ranged between 36.00 dB (A) to 40.00 dB (A).

2.5 WATER QUALITY

Ground Water Quality:

Parameters	Units
pH	7.7 – 7.9
Suspended Solids	40.0 mg/L
TDS	280 mg/L
Conductivity	492 µs/cm
Chloride	302 mg/L
Hardness	200 mg/L

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

3.1 WATER SUPPLY AND WASTE WATER MANAGEMENT

Construction Phase:

Water Supply:

During construction phase, water will be supplied by MCGM for drinking and other domestic purposes of the construction labours and by tankers to be used for construction. Total water requirement during the construction phase is about 08 cmd. Water will be utilized for domestic use of construction laborers and for construction activity.

Waste water generation:

Waste water during the construction phase will be sewage generation, estimated as 8 cmd (80% of water supplied). The details of Water Requirement and Waste generation during Construction Phase are given in Table 1.4.

Table 1.4: Water Requirement and Waste generation during Construction Phase

Sr. No.	Purpose	Source	Quantity (cub.m/day)	Waste water generated (cub.m/day)
1.	Domestic use of construction workers	MCGM	22.50	8 (@80% of water supply)
2.	Construction activity	Tanker water	20	--
	Total		42.50	**8**

Management:

1. Temporary toilets would be made available for construction workers. It would be directly connected to the existing municipal sewer line for disposal of wastewater.
2. Care will be taken to ensure that the water used for construction purposes does not accumulate on the site to prevent breeding of mosquitoes.

Operation Phase:

Water Supply:

During operation phase, water supplied by MCGM will be used for domestic purpose and for other purposes like flushing, gardening etc,

Water requirement

The average water consumption for residential buildings has been calculated as 135 litre per capita per day (90 liter for domestic purposes and 45 liter for flushing) (as prescribed by the Central Public Health and Environmental Engineering Organization or CPHEEO). During operation phase, water supplied by MCGM would be used for domestic purpose and for other purposes like flushing & gardening etc., treated water from proposed Sewage Treatment Plants (STP) would be used. The details of Water Requirement and Waste generation during Operation Phase are given in Table 1.5 A and 1.5 B. Water Balance during Monsoon and non-monsoon season is given in figure 1.6A & 1.6 B respectively.

Table 1.5 A: Water Requirement during Operation Phase

Purpose	Quantity (CMD)
Total water requirement	32
Domestic water requirement	21
Flushing water requirement	11
Landscape Water Requirement	1.2
Total sewage generation	28
waste water generated shall be disposed to Municipal sewer line	

Table 1.5 B: Water Requirement and Waste generation during Operation Phase

Sr. No.	Description	No. of Flats	No of persons per flat	Total Nos. of People	Domestic (liter)	Flushing (liters)	Total water Demand (liters)	Waste water generated (Liters)
1	Floor 11,13,15,17,19,21,23,25,27	27	5	135	12150	6075	18225	14580
2	Floor 12,14,16,18,20,22,24,26,28.	18	5	90	8100	4050	12150	9720
3	Visitors			23	345	690	1035	828
	Total	**45**		**248**	**20595**	**10815**	**31410**	**25128**
	Domestic water requirement (CMD) = 21							
	Flushing water requirement (CMD) = 11							
	Total Water requirement (CMD) = 32							
	Waste water generation (CMD) = 28							
	For landscaping = 1.2cum/day							

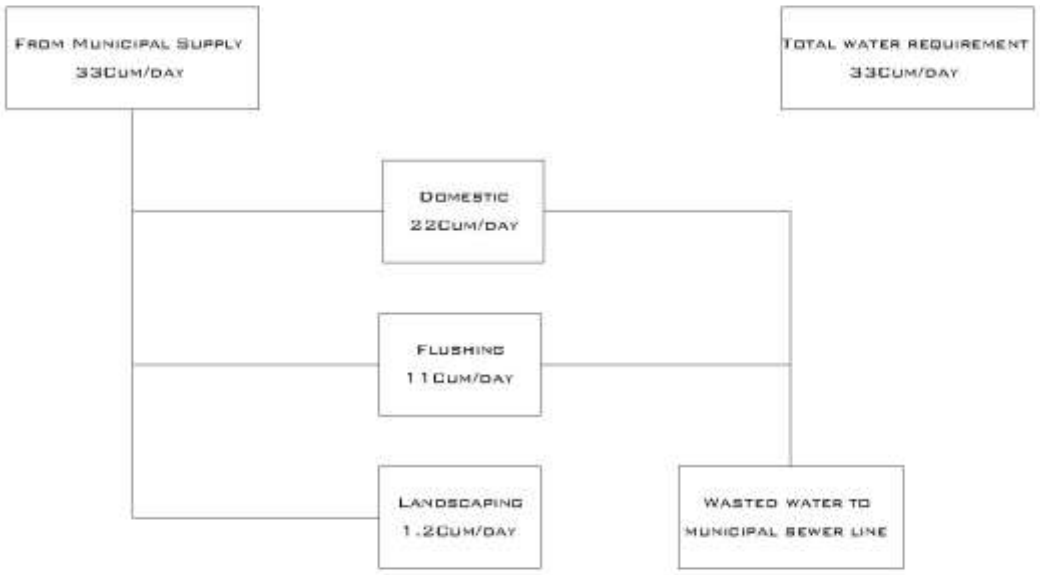

Figure 1.6B: Water Balance for Non Monsoon season

3.2 SOLID WASTE GENERATION AND MITIGATION

MEASURES <u>Construction stage</u>

During the construction stage, construction waste would be generated which would include debris, concrete, steel and other metals, bricks, pallets, packaging and paper products, railings, door and window casings, fixtures, tiles, furnishings etc.

Operation stage

During operation phase, solid waste will be generated @ 0.45 Kg/day for residential purposes. The details of solid waste generated during operation phase are given in Table 1.6.

The main solid waste generated from the proposed project is due to consumption of food materials, plastic, packing material and paper. The solid waste will be segregate at the site and recyclable material will be sold out through vendors. Biodegradable waste would be transferred to mechanical composting units within the premises and rest will be disposed off into the garbage collecting vehicles of the local authorities.

Proposed method for Solid Waste Management

Sr. No.	Waste Type	Collection and Storage	Method of Disposal
1.	organic waste	Manual collection & storage at ground level.	Treatment in Mechanical composting units provided at the ground level within the premises. The manure generated will be used for gardening.
2.	Inorganic waste	Manual collection & storage in closed rooms at ambient temperature.	Disposed to the Municipal waste collection system and recyclable waste to be taken away by private contractor for resale.

Table 1.6: Solid Waste Generated during Operation Phase

Sr. No.	DESCRIPTION	No. of Flats	No of people per flat	Total No of People	Quantity of refuse Kg/person/day	Total Solid waste Generated(Kg/ Day)	Bio-degradable waste generated @60% of total waste (Kg/Day)	Non-Biodegradable waste generated @40% of total waste (Kg/Day)
1	Floor 11 , 13,15,17,19,21 ,23,25,27.	27	5	135	0.45	60.75	36.45	24.30
2	Floor 12,14,16,18,20,22,24,26,28.	18	5	90	0.45	40.50	24.30	16.20
3	Visitors			23	0.1	2.3	1.38	0.92
	TOTAL	**45**		**248**		103.55	62.13	41.42
						0.10 MT/D	0.06 MT/D	0.04 MT/D

3.3 POWER REQUIREMENT

During Construction Phase:

Power required for the general purpose will be approx. 100 KW & shall be taken from Local Authority from the existing connection.

During Operational Phase:

Source of Power – B. E. S. T

Connected Load- 100KW

Maximum Demand – 930 KVA

DG Back up –DG set with Acoustic enclosures and with synchronizing Panel

2 No. DG set of 630 KVA capacities. The same will be operated for essential power requirements such as fire lifts, water pumps and passage lighting etc. As in Mumbai there is hardly any power failure is observed, but for essential back up DG set is proposed.

The building will have following energy conservation measures

Most of the common area lighting are proposed to work on LEDs & CFL

Solar lighting to possible extent for open area.

LED and energy efficient CFL lamps have been considered in all rooms.

Capacitors for PF to reduce power demand of the system.

Hydro-pneumatic pumps are proposed for Water supply system.

All cables shall be de-rated to avoid heating during use. This also indirectly reduces losses and improves reliability.

VED based hydro pneumatic system.

Efficient condensate return & recovery system.

3.3 AIR & NOISE POLLUTION & CONTROL MEASURES

The sources of air & noise pollution are D. G. sets and vehicular movement and honking. By implementing appropriate mitigation measures these effects are expected to become insignificant.

3.5 STORM WATER-COLLECTION AND DISPOSAL

Storm water drains will be constructed according to municipal regulations. Storm water from the entire plot will be collected through network of storm drains. Storm water from plot area will be collected in the rainwater harvesting pits provided for this purpose. The overflow from these pits, if any, will be then discharged in the proposed drains.

3.6 FIRE FIGHTING MEASURES

For protection of the facility against fire, all the units will be equipped with any one or a combination of the following fire fighting systems:

- Hydrant system;
- Smoke detector and smoke alarm system, sprinklers system
- Fire Detection and alarm system; and
- Different types of fire extinguishers and sand buckets.
- Provision of refuge area
- Precautions will be taken as per NBC & C.F.O NOC

For storage of water for fire fighting in case of emergency, a firewater underground sump will be provided. This will serve the fire fighting needs of the project.

4.0 ENVIRONMENTAL MONITORING PROGRAMME

4.1 Environmental Monitoring

The Post Project Monitoring to be carried out at the project site will be as mentioned below:

- **Air Pollution and Meteorological Aspects**

  Both ambient air quality and stack emissions shall be monitored. The ambient air quality shall be monitored once in three months by engaging the services of the laboratory approved by SPCB/MoEF.

- **Wastewater Quality**

  The wastewater generated from sanitation shall be monitored once in a month for physico-chemical characteristics and results reported to SPCB. The treated water from STP shall be monitored once in a month for physico-chemical characteristics and results.

- **Noise Levels**

  Noise levels shall be monitored once in three months.

Environmental Monitoring Plan

During Construction Phase				
	Item	**Parameters**	**Frequency**	**Location**
1.	Ambient Air Quality	SPM,RSPM,SO_2 NOX , HC & CO	Quarterly	At major construction area. (total 1 station)
2.	Noise Level	Equivalent noise Level dB (A)	Daily	At major construction area. (total 1 station)
3.	Drinking Water	Analysis of water for physical, chemical, biological parameters.	Quarterly	Municipal supply
During Operation Phase				
	Item	**Parameters**	**Frequency**	**Location**
1.	Ambient Air Quality	SPM,RSPM,SO_2 NOX , HC & CO	Quarterly	Total 1 station
2.	Noise Level	Equivalent noise Level dB (A)	Quarterly	Total 1 station
3.	Drinking Water	Analysis of water for physical, chemical, biological parameters	Quarterly	Municipal supply

5.0 Environment 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.

Safety Measures Onsite

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.
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.

6.0 Additional Studies
Disaster Management Plan

This provision is applicable in the present case only to safety and fire hazard because it is a small residential unit. The only hazards envisaged here are from fire either due to short circuit

or gas cylinder in the kitchen of individual houses. There are no other manmade disasters expected. We have not considered here the natural disasters like flooding, earth quake etc.

Normal safety plans and precautions are expected to be in place as per CFO and MCGM guidelines. To maintain the ecological balance and check any probable harmful effect, proper EMP, good housekeeping around project site, have been suggested.

The fire safety measures followed will be:

- Underground and overhead water storage tank
- Exit sign & Emergency escape route sign shall be provided
- Fire pumps, Sprinkler pumps with jockey pumps to be provided
- Diesel driven standby pump
- Pressurized wet risers at mid-landing in the duct adjoining each staircase with hydrant outlet and hose reel on each floor
- Portable extinguisher and bucket filled with sand shall be kept in Electric meter room, Lift machine room and entire parking.
- Automatic smoke detection & Fire alarm system
- Provision of Refuge Area
- Fire escape staircases, fire lift & fire safety doors as per DC Regulations and in the line with NBC 2005

The Disaster Management Plan studies include:

- Identification of the major hazards to people and the environment;
- Assessment of the risks
- Develop warning system wherever possible
- Develop manpower and measures to prevent / control the risks
- Make advance preparations to face the disaster, minimize the losses, provide help to affected people
- Planning to recover from the effects of the hazard.

7.0 LANDSCAPING AND GREENBELT DEVELOPMENT

11 no. Palm tree on open ground and 13 no. Ornamental trees will be planted on 10th floor area and 245.58 sq.m. R.G. proposed on 10th floor .

8.0 PROJECT BENEFITS

The project proponent seems to be safety conscious and alert about good housekeeping and is environment friendly. We may conclude as under:

- Proposed Reconstruction of existing building project is in Malabar hill area of Mumbai. The site under reference is affected by CRZ-II zone. Thus property attracts the CRZ legislation, which is reflected in CZMP plan.
- The proponents are following all the Firefighting safety rules and regulations as prescribed by M.C.G.M. and CFO regulations.
- Building will be designed to meet requirements of seismic zone III- Earthquake resistant.
- Rain water harvesting system is proposed on site.
- Ambient Air Quality of the project site will be within the permissible limit as prescribed by National Ambient Air Quality Standards.
- Solid waste will be collected and segregated and kept separately for wet and dry garbage. Dry garbage will be sorted into recyclable and non recyclable. Recyclable dry garbage will be disposed to authorized recycling agencies and non recyclable will be sent to land fill sites by the municipality. Wet garbage will be treated by Organic waste converter and will be used as manure in garden area.
- Air, water, Noise, soil parameters will be studied during construction as well as after construction to minimize the environmental impact by taking proper precautionary measures.
- No significant impact is seen on flora and fauna.
- Fly-ash will be used in concrete work.
- Total 11no trees on open ground and 13 no trees Ornamental trees will be planted along with landscape development to improve microclimate.

- The project will generate employment opportunities during construction stage and also at operational phase.
- Proposed buildings have considered energy efficient lighting.