

# EXECUTIVE SUMMARY

**Interchange of Garden area, Sewage Purification Plant  
reservation and Residential zone**

*for*

*Implementation of Slum Rehabilitation Scheme (SRA) on plot  
bearing C. T. S. NO. B 906 (pt) and 1152 (pt) of Village  
Bandra, Kandeshwari road, Bandra (W), H/W ward, Mumbai  
400 101, Maharashtra State.*

Developer

**M/s. Hare Krishna Developers**



## 1.1 Introduction

Mumbai the capital of Maharashtra is also the financial capital and the most densely populated city of India. Mumbai has grown in recent decades for many residential and commercial developments. Migration, both from within the state and outside is a natural corollary of development. Mumbai is a magnet that attracts people in search of jobs and opportunities. This population growth has requirement of housing, transportation, provision of civics amenities etc. We are aware that there are constraints on the availability of open land within the city limits coupled with fast growing demand for houses and shortage of housing stock. Hence M/s. Hare Krishna Developers has identified a possibility in this field to provide space for accommodation and affordable housing under D. C. Regulation 33(10).

## 1.2 Need of the Project

The proposed plot bearing C. T. S. B 906 (pt) and 1152 (pt) of of Village Bandra, Kandeshwari road, Bandra (W), H/W ward, Mumbai 400 101, Maharashtra State, as shown in Google image in Figure 1.

As per MCGM DP Remarks & Plan dated 16<sup>th</sup> July 2014 the plot U/R is 'Residential Zone (R)' and has two reservations of Garden & proposed Sewage Purification Plant. As per MCGM Letter No. CHE/37/DPWS/H&K dated 9<sup>th</sup> April 2003 the plot under reference land bearing C.T.S. No. B 906 (pt) and 1152 (pt) of Bandra-B Village H/W ward are entirely reserved for the public purpose of Garden and proposed Sewage Purification Plant. It is a part of larger reservation. At present the land has slums known as Jafar Buva colony zopadpatti and Jafar Baba Kadeshwari Rahivasi Seva Sangh (CHS). The total area of this plot is 4910.49 Sq Mts., which have 282 slum structures out of which 250 are protected structures. As per Government G. R. No. Zopadi Punarvasan Yojana 1096/68 Gunisel dated 16<sup>th</sup> May, 1996 and amended D. C. Regulation 33(10) and therefore eligible for free alternative accommodation under Slum Rehabilitation Scheme.

The proposed project pertains to Interchange of Garden area, Sewage Purification Plant reservation and Residential zone and Implementation of Slum Rehabilitation Scheme (SRA) on site u/r.



Figure 1: Proposed Plot on Google image (Plot marked in Red)

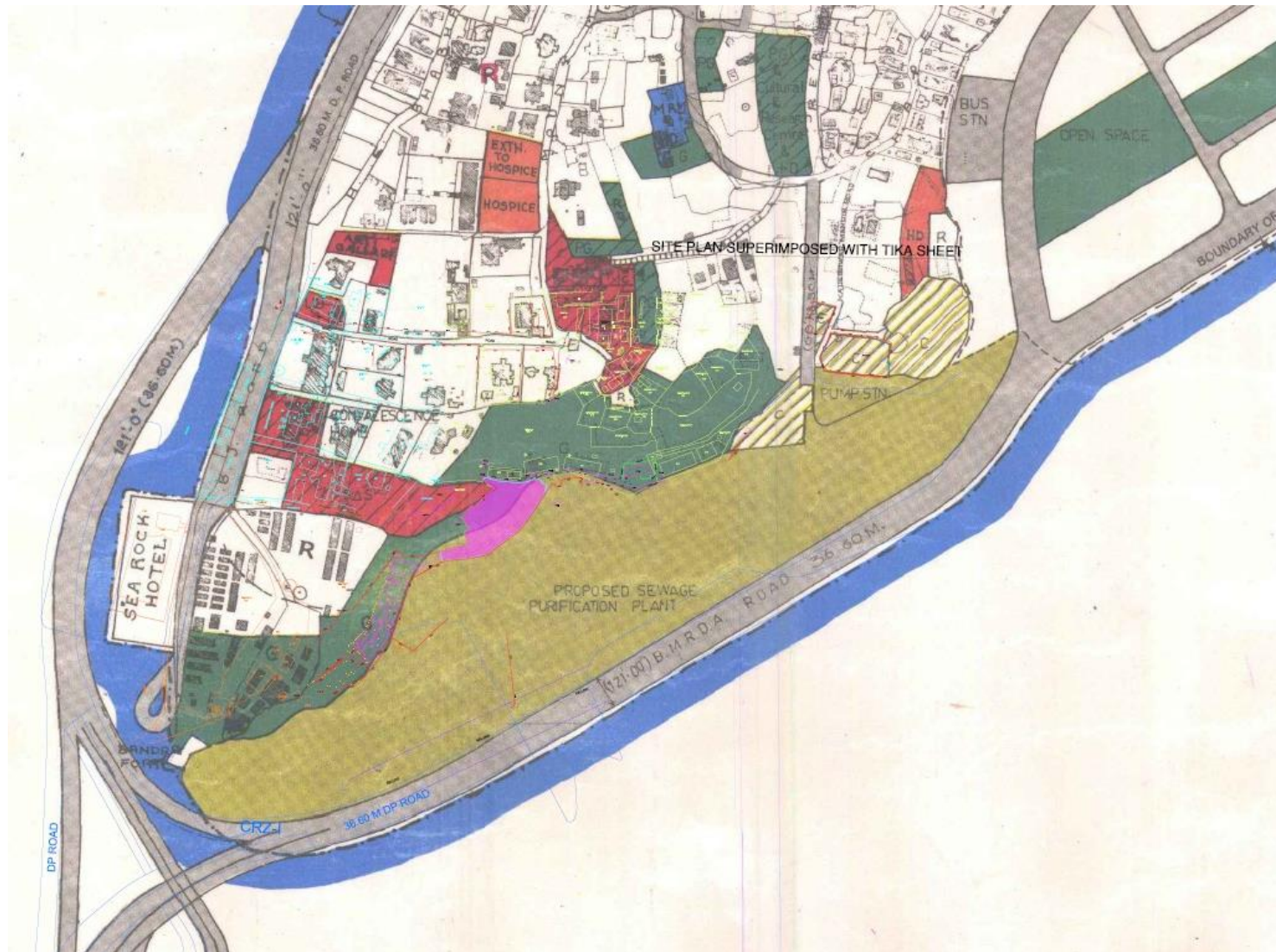


Figure 2: DP Plan

### **1.3 Applicability of CRZ Notification**

The demarcation of HTL w. r. t the plot U/R has already been obtained from IRS Chennai, authorized agency and the proposed site is partially affected by CRZ II & III (Please refer to Figure 3). As per approved CZMP of Mumbai the site U/R falls in CRZ II zone (Please refer to Figure 4).

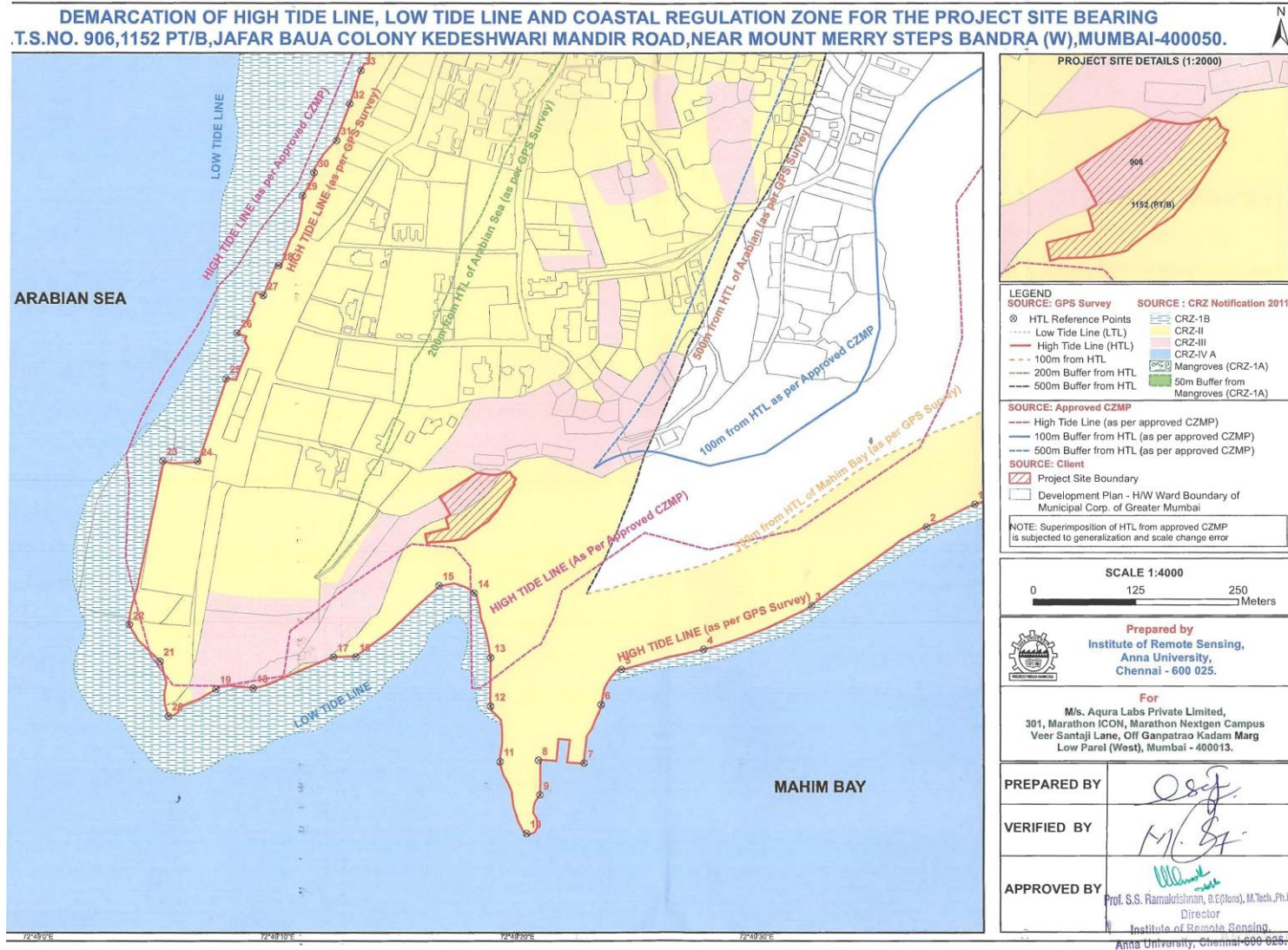


Figure 3: HTL Demarcation Plan from IRS Chennai.

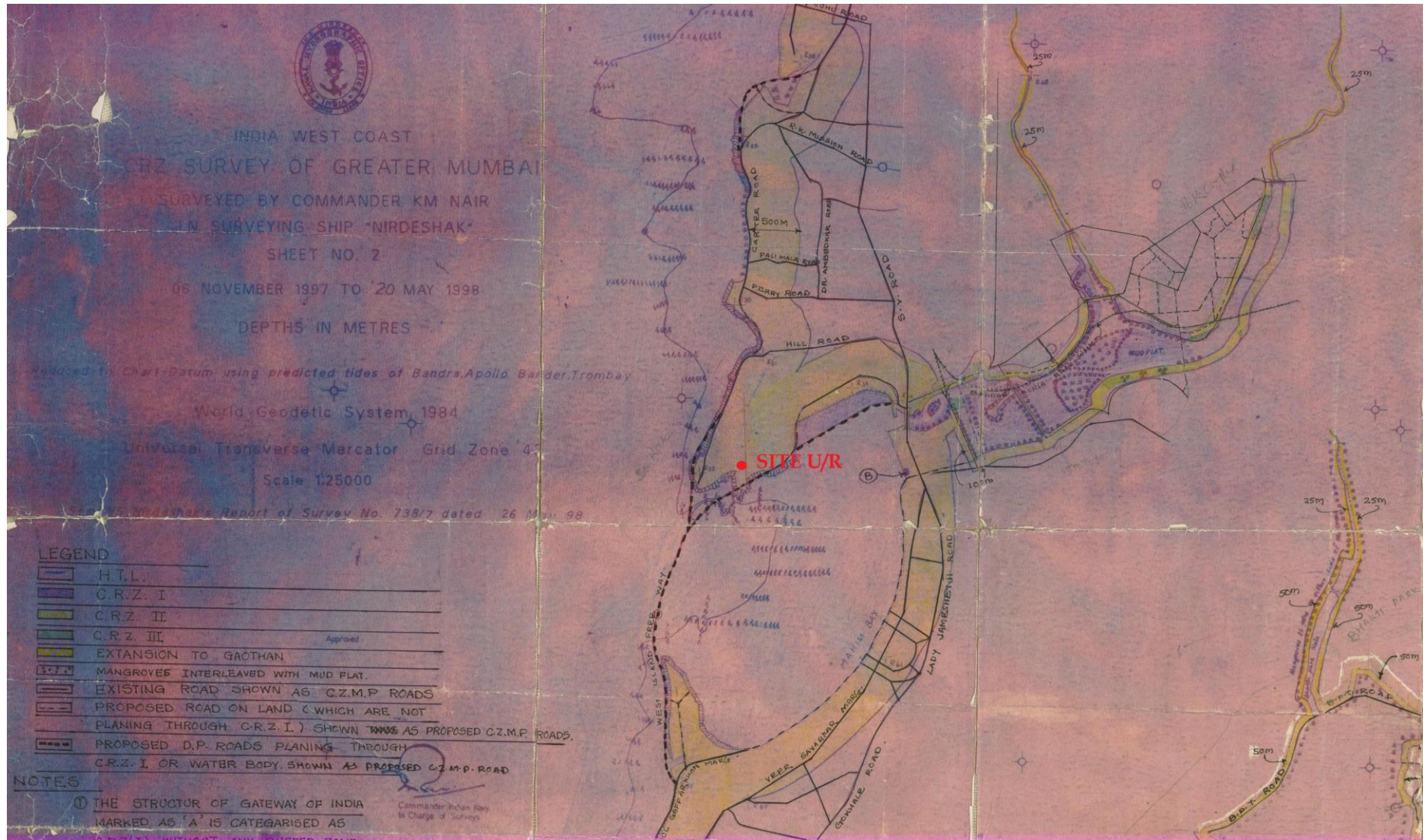


Figure 4: CZMP of Mumbai



#### 1.4 Identification of Project Proponent

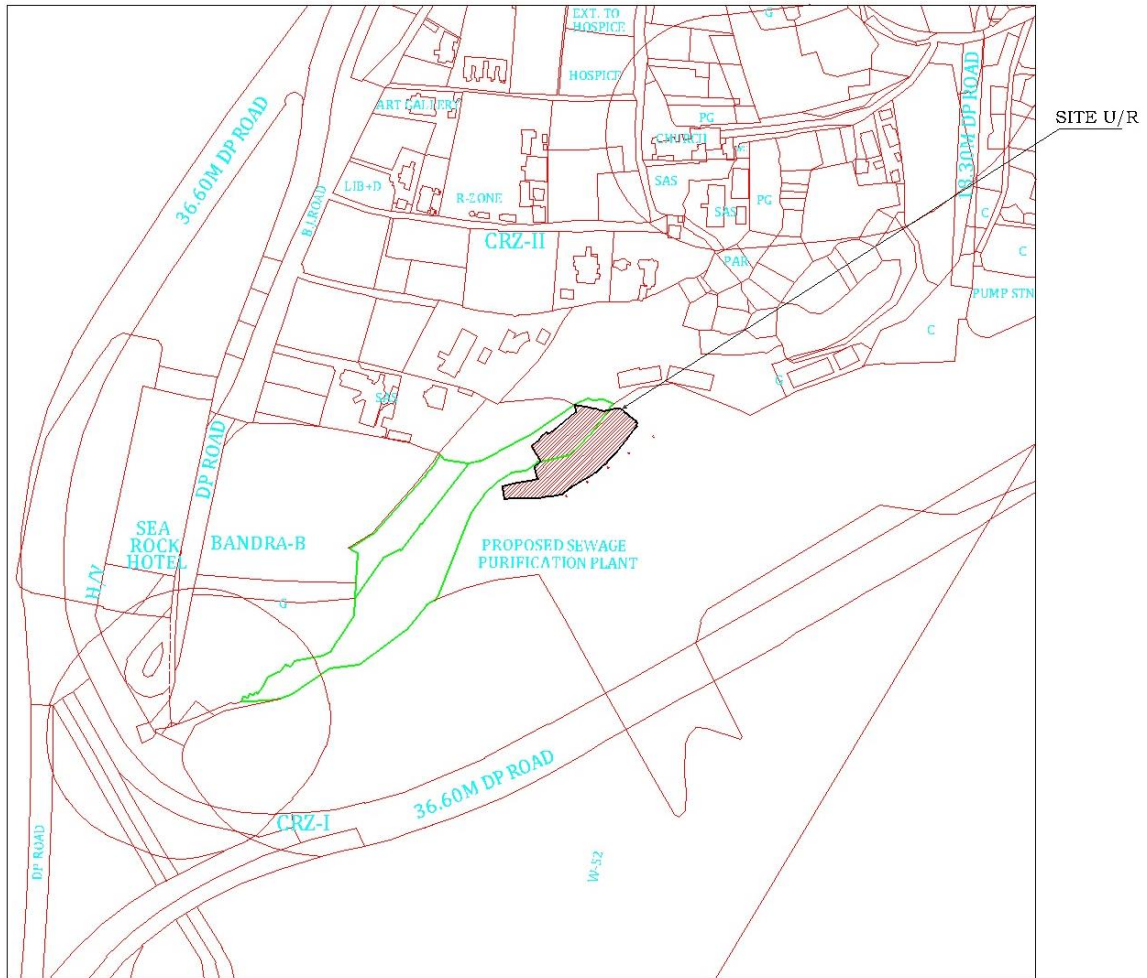
M/s. Hare Krishna Developers has proposed redevelopment on plot bearing C. T. S. B 906 (pt) and 1152 (pt) of of Village Bandra, Kandeshwari road, Bandra (W), H/W ward, Mumbai. The details of the project proponent are given in Table1.

**Table 1: Details of Project Proponent**

Sr. No.	Particular	Details
1.	Name of Developer	Hare Krishna Developers
2.	Name of Contact person	Praveen Awate
3.	Designation of Contact person	Partner
4.	Contact No	9821088902
5.	Email	praveen.awate@gmail.com
6.	Address	29, 1st floor, Kantharia Mansion, Gokhale Road (S), Dadar (W), Mumbai 400028.

#### 1.5 Location of the Project

The proposed project admeasuring about 4910.49 sq. m. of plot area is situated on C. T. S. B 906 (pt) and 1152 (pt) of Village Bandra, Kandeshwari road, Bandra (W), H/W ward, Mumbai. Location Plan & Block Plan of Proposed Project are given in Figure 5 & 6 respectively. The proposed plot has reservation of Garden and proposed Sewage Purification Plant but at present the proposed plot is occupied by slum dwellers (Please refer to Figure 7). As per Zopadi Punarvasan Yojana the slum dwellers are eligible for free alternative accommodation under Slum Rehabilitation Scheme. Therefore developer M/s. Hare Krishna Developer has proposed redevelopment of the proposed plot as per D. C. Regulation 33(10) of 1991.



**LOCATION PLAN**  
SCALE 1:4000

**Figure 5: Location Plan of Proposed Site**

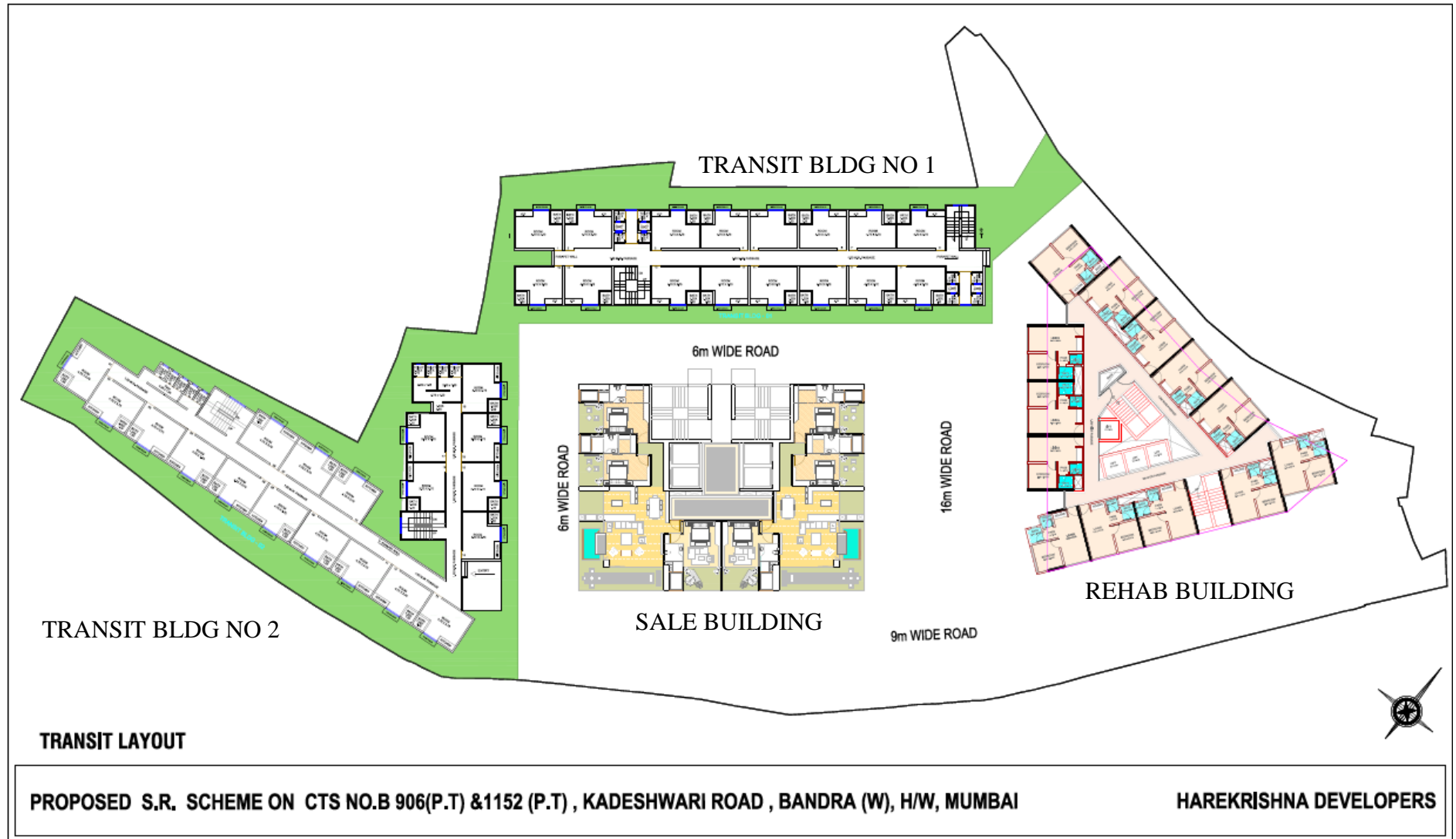


Figure 6: Block Plan of the proposed Site



**Figure 7: Google Image of Site U/R showing Slum encroachment**

## 1.6 Description of Project Site

The proposed project admeasuring about 4910.49 sq. m. of plot area is situated on C. T. S. B 906 (pt) and 1152 (pt) of of Village Bandra, Kandeshwari road, Bandra (W), H/W ward, Mumbai. The proposed project has access from Khandeshwar Mandir Road. The environmental features are illustrated in given Table 2 given below.

**Table 2: Environmental Setting of Proposed Project**

Sr. No.	Particulars	Details
1	Latitude	19° 02'38.95" N
2	Longitude	72° 49'18.46" E
3	Elevation above MSL	11.0 m above Mean Sea Level
4	Climatic Conditions	Maximum Temperature :34.4 °C Minimum Temperature :17.5 °C Annual Rainfall :2567.5 mm
5	Present land use at the proposed site	Residential (Slums)
6	Transport Connectivity	
A	Nearest Highway	Western Express Highway (1.3 Km - S)
B	Nearest Railway Station	Bandra Railway Station (3.2 km – E) Mahim Railway Station (4.4 km – SE)
C	Nearest Road	Khandeshwar Mandir Road (NE)
7	Social Aspect	
A	Nearest School/College	Mount Mary Convent High School (1.3 km - N) Saint Joseph's Convent High School (1.0 km - W)
B	Nearest Hospital	Lilavati Hospital & Research Centre (1.7 Km - NE) Holy Family Hospital (1.8 km - N)
C	Nearest Fire Station	Bandra Reclamation Fire Station
D	Nearest Police Station	Bandra Police station
8	Hills/Valleys	Nil
9	Ecologically sensitive zones within 15-km distance	Not applicable
10	Seismic Zone	Zone – III

## 1.7 Brief Description of Proposed Project

The proposed project admeasuring about 4910.49 sq. m. of plot area is situated on C. T. S. B 906 (pt) and 1152 (pt) of of Village Bandra, Kandeshwari road, Bandra (W), H/W ward, Mumbai. The proposed residential building comprises of 2 Buildings, Rehab Building: 2 Basements + Ground Floor + 1<sup>st</sup> to 23<sup>rd</sup> upper residential floors and Sale Building: 3 Basements + Ground Floor + 7 Parking Floors + 3 Podiums + Transfer Floor + Service Floor + 1<sup>st</sup> to 28<sup>th</sup> Upper Residential Floors including Fire Check & Service Floors. The brief description of the proposed project is given Table 3.

**Table 3: Brief description of the project**

#	Particular	Details
1	Project Type	Residential Building Project
2	Location	
	CTS No	C. T. S. NO. B 906 (pt) and 1152 (pt)
	Village	Bandra
	Tehsil	Bandra
	District	Mumbai
	State	Maharashtra
3	Site fall under CRZ I/II/III	CRZ - II (As per Approved CZMP)
4	Distance of proposed building from HTL	245 m (approx.)
5	No of Building	2 Buildings: 1 Rehab Building 1 Sale Building
6	Configuration of proposed Buildings	Rehab Building: 2 Basements + Ground Floor + 23 upper Floors Sale Building: 3 Basements + Ground Floor + 7 Parking Floors + 3 Podiums + Transfer Floor + Service Floor + 1 <sup>st</sup> to 28 <sup>th</sup> Upper Residential Floors including Fire Check & Service Floors
7	No. of Units/Flats	Rehab Building: 282 Flats Sale Building: 56 Flats TOTAL: 338 Flats
8	Expected Population	Rehab Building: 1241 Nos. Sale Building: 308 Nos.
9	Water	
	Source	MCGM
	Total water requirement	196 m <sup>3</sup> /day
	Total sewer generation	177 m <sup>3</sup> /day
	Mode Of Disposal	STP for treatment of waste water. Treated water will be used for Flushing & Gardening Purpose.
10	Solid Waste Generation	647.68 kg/day

	Mode of Disposal	Biodegradable waste will be treated in OWC & compost will be used as manure for Gardening Purpose. Non Biodegradable waste will be Handed over to MCGM
11	Power	
	Source	B.E.S.T / TATA Power
	Requirement	Max Demand: Approx. 1148 KW Conn Load: Approx. 2010 KW
12	DG Set	1900 kVA
13	Project cost	373,10,00,000.

### 1.8 Project Layout

The proposed project redevelopment project Slum Rehabilitation Scheme. Area details of the proposed project are as given below:

Proforma - A		
Sr. No.	Particulars	Details (Sq. Mt.)
1	Total Area of Plot	4910.49
2	Deductions for	
a.	Road Setback	--
b.	Reservation Garden Area	1821.33
c.	Purification Plant Area	590.00
3	Net Plot Area (1 - 2)	2499.16
4	Deduction for 15% R.G.	--
5	Balance Plot Area	2499.16
6	Addition	
a.	Garden	1821.33
b.	Sewage Purification Plant	590.00
7	Total Plot Area for F.S.I Statement (5+6)	4910.49
8	F.S.I Permissible in-situ	4.00
9	Permissible BUA (7x8)	19641.96
10	Rehab BUA	8312.68
11	Rehab Component	11496.52
12	Sale Component	11496.52
13	Total BUA Sanctioned for Scheme (10+12)	19809.02
14	F.S.I Sanctioned for Project (13/7)	4.03
15	Sale BUA Permissible in-situ (9-10)	11329.28
16	TDR Generated if any	167.24
17	Total BUA proposed to be consumed at site (10+15)	19641.96
18	No. of Eligible Rehab Tenements	251 Nos.
19	Reservations	
	1) Buildable: a) Garden	1821.33
	b) Sewage Purification Plant	590.00

## 2.0 DESCRIPTION OF THE ENVIRONMENT

### 2.1 METEOROLOGICAL

<b>Relative Humidity</b>	<b>Temperature</b>	<b>Rainfall</b>
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: 36 °C Annual Mean Minimum Temperature: 16.5 °C	Total Mean Annual Rainfall: 2567 mm

### 2.2 AMBIENT AIR QUALITY

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

<b>Parameters</b>	<b>Range of Pollutants Present</b>	<b>Unit</b>
SO <sub>2</sub>	19.0 – 29.0	µg/m <sup>3</sup>
NO <sub>x</sub>	26.5 – 42.0	µg/m <sup>3</sup>
RSPM	78.0 – 168.0	µg/m <sup>3</sup>

### 2.3 NOISE LEVEL

#### **Day Time Noise Levels [(L<sub>day</sub>)]**

The noise levels ranged between 48.20 dB (A) to 74.60 dB (A).

#### **Night Time Noise Levels (L<sub>night</sub>)**

The noise levels ranged between 25.99 dB (A) to 51.15 dB (A).

### 2.4 WATER QUALITY

#### **Ground Water Quality:**

<b>Parameters</b>	<b>Units</b>
pH	7.8
Suspended Solids	400 mg/L
TDS	280 mg/L
Conductivity	300 µs/cm
Chloride	302 mg/L
Hardness	200 mg/L

### 2.5 DEMOGRAPHY AND SOCIO –ECONOMIC PROFILE

Ward	Area	Land Area	Households	Population	Density/Km <sup>2</sup>
H/W	Bandra	11.55 Sq. Km	84228.2 Apporx.	421141 Approx.	36462 Approx.

Source: <http://www.mcgm.gov.in/irj/portal/anonymous/qlwardhw>



### 3. WATER AND WASTE WATER MANAGEMENT

#### 3.1 Construction Phase:

During construction phase, water will be supplied by MCGM for drinking and other domestic purposes for the construction labors and tanker water to be used for construction. Total water requirement during the construction phase is about 50 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).

#### Water Requirement and Waste generation during Construction Phase

Sr. No.	Purpose	Source	Quantity (m <sup>3</sup> /day)	Waste water generated (m <sup>3</sup> /day)
1.	Domestic use of construction labors	MCGM	10	8 (@80% of water supply)
2.	Construction activity	Tanker	40	
<b>Total</b>			<b>50</b>	

#### 3.2 Mitigation measures:

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

#### 3.3 Operation Phase:

The average water consumption for residential buildings has been calculated as 135 liter 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 4A & Table 4B. Water Balance during Non Monsoon and Monsoon season is given in figure 7A & 7B respectively.

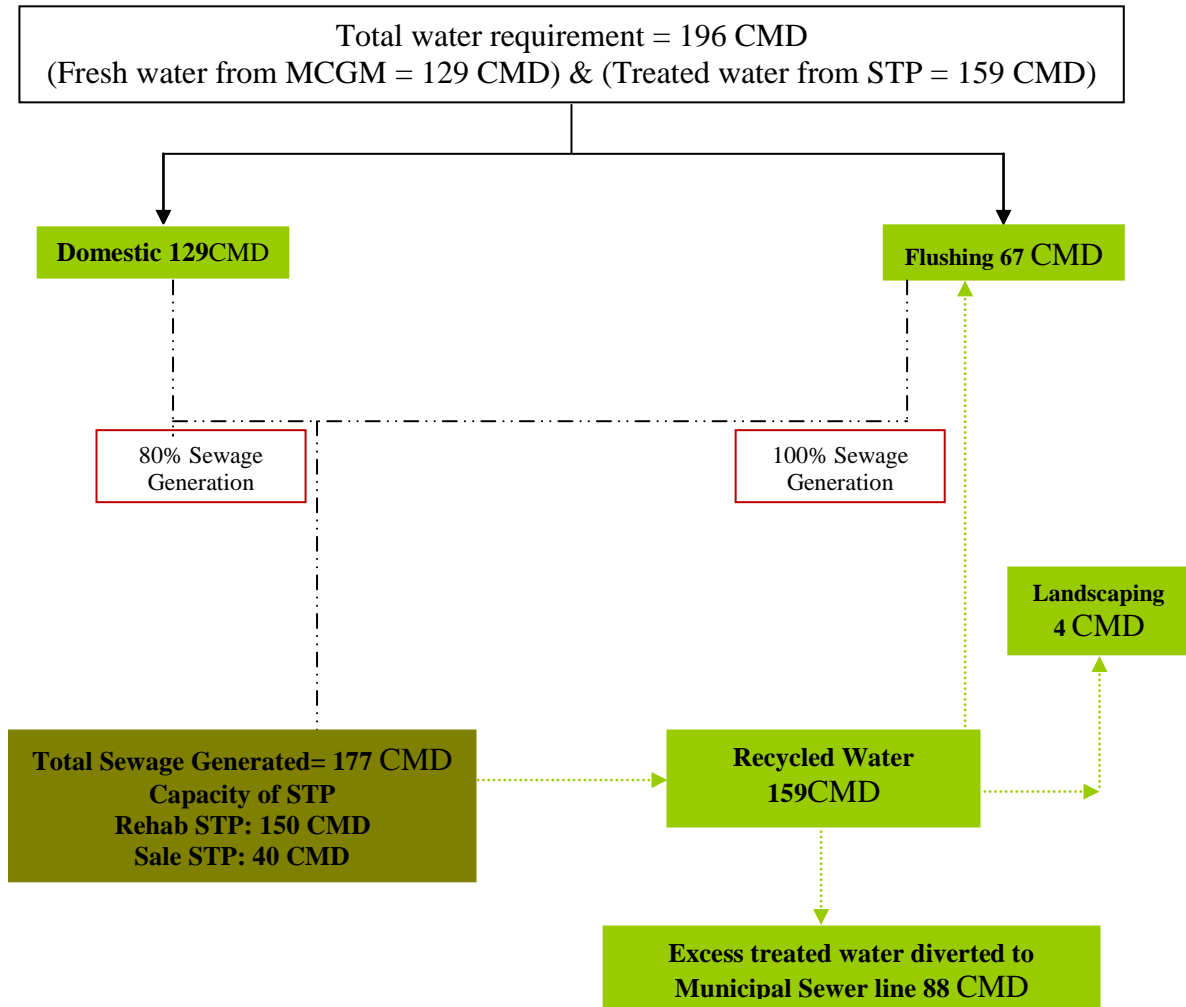
**Table 4A: Water Requirement during Operation Phase**

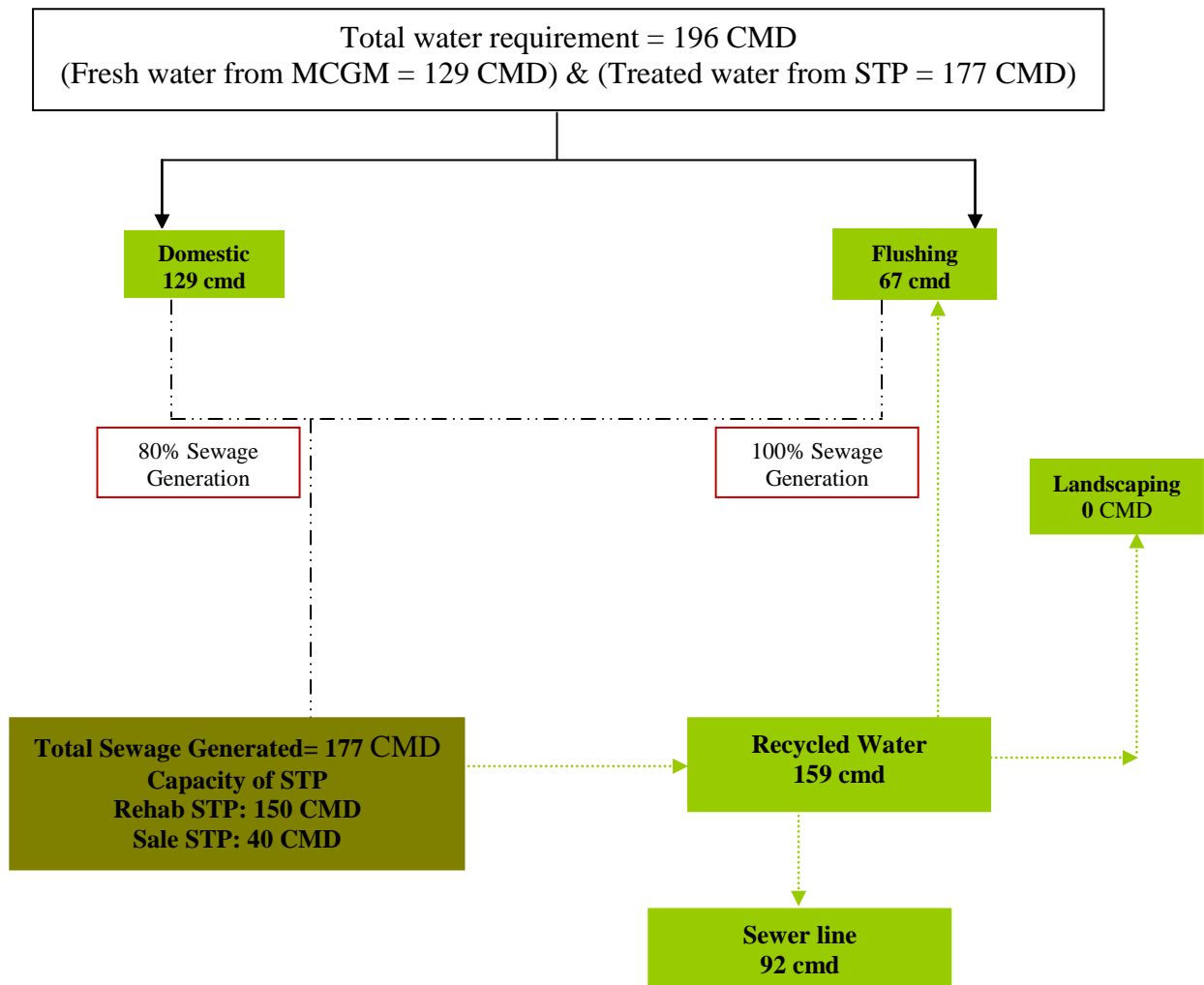
Type	Population	Domestic		Flushing	
		Standard (lpcd)	Quantity (m <sup>3</sup> /day)	Standard (lpcd)	Quantity (m <sup>3</sup> /day)
Rehab Building (282 units)	1128	90	102	45	51
Floating/Visitors	113	20	2	25	2.8
Sale Building (56 units)	280	90	25	45	12.6
Floating/Visitors	28	20	0.6	25	0.7
<b>Total</b>	<b>1549</b>	<b>--</b>	<b>129</b>	<b>--</b>	<b>67</b>
			<b>196</b>		

**Table 4B: Waste & Waste water Details**

Sr. No.	Details	m <sup>3</sup> /day
1	Total Water requirement	196
2	Waste water generation	177
3	STP Capacity	Rehab -150 & Sale -40
4	Treated water from STP	159
5	Gardening Water Requirement	4
6	Excess treated water to Municipal Sewer line	88

**Figure 7A: Water Balance for Non Monsoon season**



**Figure 7B: Water Balance for Monsoon season****3.4 Mitigation measures:**

Total wastewater generation from the proposed activity would be approximately 177 CMD. It would be treated in 2 STPs of capacity Rehab 150 CMD & Sale 40 CMD, treated water (159 CMD) would be used for gardening & flushing and excess would be discharged directly into Municipal sewer line. STP will be provided of MBBR Technology.

## 4. SOLID WASTE MANAGEMENT

### 4.1 Construction phase

During the construction phase, 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.

### 4.2 Operation phase

During operation phase, solid waste would be generated @0.45 kg/day/person for proposed residential purposes. The details of solid waste generated during operation phase are given in Table 5.

**Table 5: Solid Waste Generated during Operation Phase**

Type	Popula- tion	Standard (kg/day/ person)	Quantity (Kg/day)	Solid Waste Generation (Kg/day)	
				Biodegradable Waste (60 %)	Non Biodegradable Waste (40%)
Rehab Building (282 units)	1128	0.45	507.60	304.60	203
Floating/Visitors	113	0.1	11.30	6.80	4.50
Sale Building (56 units)	280	0.45	126	75.60	50.40
Floating/Visitors	28	0.1	2.8	1.7	1.1
<b>Total</b>	<b>1549</b>		<b>647.68</b>	<b>388.61</b>	<b>259.07</b>

Solid waste generated from the proposed project would be due to consumption of food materials, plastic, packing material and paper. Management of solid waste generated during the operation phase would include collection, transportation and disposal in a manner so as to cause minimal environment impact. For this, it would be made mandatory for waste to be segregated into bio-degradable waste and non-biodegradable waste right at the source of waste generation. Biodegradable waste would be transferred to mechanical composting units within the premises for treatment and non-degradable waste would be disposed through authorized municipal waste disposal system.

### Proposed method for Solid Waste Management

Sr. No.	Waste Type	Collection and Storage	Method of Disposal
1.	Biodegradable (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.	Non Biodegradable (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.

### 5. ENERGY MANAGEMENT

Source: The electricity supply will be from B.E.S.T / TATA Power

Power Requirement: Construction Phase: 100 KW

Operation Phase:

Maximum Demand: 1148 KW

Connected Load: 2010 KW

D.G back up for essential services: 1 No. of D. G. Set of Capacity 1900 KVA

- Diesel would be required to run the D.G. set in case of power failure. 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. Hence the quantity would vary depending on usage.
- It will be stored in drums / tins with proper identification marks/labels in identified areas only.
- Fire safety measures will be taken as per the guidelines from concern authority.
- All safety and fire precaution will be followed.

#### ***Energy conservation measures to be implemented are:***

- Use of Solar energy for compound lightings.
- Selection of Energy efficient equipments (BEE STAR RATED).
- Use of energy efficient lamps, luminaries and control devices

- Ensuring proper utilization of daylight and control glare from windows through architectural design.
- Maintaining lighter finishes on ceiling, walls and furnishings
- Implementing periodic schedule for cleaning of luminaries and group replacement of lamps at suitable intervals
- Use of solar lights for garden & street lighting

## 6. 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. Details of mitigation measures during construction and operational phase are given below:

	ACTIVITY	IMPACTS	MITIGATION
<b>CONSTRUCTION PHASE</b>			
1.	Demolition work	Dust emissions Debris generation	<ul style="list-style-type: none"> <li>• Barricading all around the proposed site</li> <li>• Debris generated will be handed over to authorized MCGM contractor for disposal at low lying site recognized by SWM department of MCGM.</li> </ul>
2.	Transportation	Dust emission	<ul style="list-style-type: none"> <li>• Covered truck used</li> <li>• Only PUC certified vehicles allowed</li> <li>• Raw materials and debris will be transported during non peak hours.</li> </ul>
3.	Surface water run off	Generation of silt during monsoon	<ul style="list-style-type: none"> <li>• Silt traps &amp; ditches will provided to arrest soil particle</li> </ul>
<b>OPERATION PHASE</b>			
1.	Water	Wastewater generation	<ul style="list-style-type: none"> <li>• Waste water would be treated in proposed STP and reused. Balance water would be diverted to existing municipal sewer line.</li> </ul>
2.	D. G set	Noise, emission	<ul style="list-style-type: none"> <li>• Acoustic enclosure will provide.</li> <li>• Stack as per CPCB guideline</li> </ul>
3.	Storm water	Incremental Run off	<ul style="list-style-type: none"> <li>• RWH will provide to bring down the increment run off.</li> </ul>
4.	Solid waste	Plastic waste, glass, paper etc	<ul style="list-style-type: none"> <li>• Segregated and recyclable waste would be sold to vendor and rest will handed over to MCGM for final disposal.</li> </ul>
		Biodegradable	<ul style="list-style-type: none"> <li>• Biodegradable waste would be treated in</li> </ul>

	waste	OWC and compost would be used in gardens.
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## 7. 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
- Fire Detection and alarm system; and
- Different types of fire extinguishers.
- 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 and overhead tank will be provided. This will serve the fire fighting needs of the project.

## 8. ENVIRONMENTAL MONITORING PROGRAMME

### 8.1 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 near the DG set shall be monitored once in three months.



**ENVIRONMENTAL MONITORING PLAN**

<b>During Construction Phase</b>				
	<b>Item</b>	<b>Parameters</b>	<b>Frequency</b>	<b>Location</b>
1.	Ambient Air Quality	SPM,RSPM,SO <sub>2</sub> 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
<b>During Operation Phase</b>				
	<b>Item</b>	<b>Parameters</b>	<b>Frequency</b>	<b>Location</b>
1.	Ambient Air Quality	SPM,RSPM,SO <sub>2</sub> 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

**9. ENVIRONMENTAL MANAGEMENT PLAN**

Preparation of Environmental Management Plan (EMP) is a must to fulfill bifocal aspect of the statutory compliance as well as that of social concern.

**9.1 AIR & NOISE ENVIRONMENT**

- Monitor the consented parameters for ambient air, regularly.
- Monitor the D.G stack
- Monitor the work zone to satisfy the requirements for health and environment.
- PUC vehicles
- Water sprinklers
- Trucks Covered & Smooth Roads.
- Green Belt development

**9.2 WATER ENVIRONMENT**

- Keep record of input water every day for quantity and periodically of quality.
- Rain water harvesting System.
- Water conservation shall be accorded highest priority in every section of the activity.

### **9.3 SOLID WASTE**

- Proper disposal of solid waste generated on site.
- Segregation of waste at source
- Using compost as manure in garden areas

### **9.4 BIOLOGICAL ENVIRONMENT**

- Special attention is planned to maintain green belt in and around the premises.
- Adequate provisions are made to facilitate daily watering of all plants and lawns.
- Ensure the availability of water for green belt.
- Development & maintenance of green belt to be considered as a priority issue.
- Plantation of native trees on periphery of plot area. Native species will be planted on the site.

## **10. 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 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 5.0 mtrs when the structures get raised above the required height from the ground.

## **11. ADDITIONAL STUDIES**

### **Disaster Management Plan**

This provision is applicable in the present case only to safety and fire hazard because it is a hospital & maternity Home building. The only hazards envisaged here are from fire either due to short circuit or gas cylinder in the canteen. 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
- Public address system shall be provided
- Fire pumps, Sprinkler pumps with jockey pumps to be provided
- 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
- 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.

## **12. PROJECT BENEFITS**

- The proposed building would have positive impact on the surrounding area and the people.
- It will provide infrastructure facility to the surrounding area.
- It will create an environment that could support the culture of good standards;
- The development of land for any purpose creates both an immediate demand for services and a flow of revenues to the community and govt. from a variety of sources, for example transportation, property tax, licenses and permits fee etc.
- This project will increase the economic activities around the area, creating avenues for direct/ indirect employment in the post project period. There

would be a wider economic impact in terms of generating opportunities for other business like workshops, marketing, repair and maintenance tasks etc.

- The continuous inflow of people will require local transport systems like autos, taxis etc which would help their business;
- During construction phase, the project will provide temporary employment to many unskilled and semi-skilled laborers in nearby areas. The project will also help in generation of indirect employment to those people who render their services for the personnel directly working in the project.
- **Implementation of Slum Rehabilitation Scheme (SRA) for upgrading standard of living of slum dwellers. This will provide them better standard of living with all basic amenities. The facilities which are proposed are as follows**
  - i. Paved Internal Road
  - ii. Street Lights
  - iii. Storm water Drains
  - iv. Smooth & Comfortable Pedestrians access
  - v. Adequate parking area
  - vi. Society Office
  - vii. Balwadi Centre
  - viii. Welfare Centre
  - ix. Trees along the periphery of the project boundary and green belt development
  - x. Fire Protection will be as specified in NBC norms & CFO NOC.
  - xi. Well planned RWH as per the provisions and directions of U.D.D Govt. of Maharashtra.
  - xii. Good connectivity to public and private transportation facilities catering all the buildings through proper access from layout road and internal roads.
  - xiii. Sewerage Connection & proper drainage facility
  - xiv. Exit sign & Emergency escape route sign are provided in all buildings.
  - xv. Evacuation plan from the buildings and evacuation plan for reaching assembly point will be displayed in society office and on each floor for Disaster Management.
  - xvi. Improved aesthetic value of proposed area and surrounding area.
  - xvii. Positive impact on hygiene conditions.
  - xviii. Well planned and systematic development of the proposed area as per DC rules of MCGM.
  - xix. Improving and upgrading the standard of living of the people