

**EXECUTIVE SUMMARY****INTRODUCTION**

**Opal Estate Pvt. Ltd.** is proposing Redevelopment of Residential Building known as “**Bob Bunglow**” on plot bearing C.S.No.50, situated at Dolkar Street & Hospital lane, E ward, Mazgoan, Mumbai which comes within the municipal limits of Municipal Corporation of greater Mumbai.

The existing structure is proposed to be demolished and new structure is proposed. The proposed redevelopment of the project is considered under CRZ II.

**PROJECT DETAILS**

The total built up area of proposed project 1548.44m<sup>2</sup>. The total plot area of the proposed redevelopment project is 621.24 m<sup>2</sup>

The area statement is tabulated below:

**Area Statement**

1	Total Plot area	621.24	m <sup>2</sup>
2	Permissible FSI	1553.10	m <sup>2</sup>
3	Proposed FSI Area	1548.44	m <sup>2</sup>
4	Non FSI Area	1063.9	m <sup>2</sup>
5	Total Construction Area	2612.34	m <sup>2</sup>

**Project Summary**

Sr. No.	Details	Quantity
1.	Project Cost	Rs. 44.4 Cr
2.	Total Water Requirement	34 m <sup>3</sup> /day
3.	Sewage Generation	27 m <sup>3</sup> /day
4.	Total Power Requirement	0.2 MW
5.	Total Solid Waste Generation	127 kg/day

**BASELINE ENVIRONMENT**

The baseline environmental status of the study region has been collected by the study team to ascertain the present environmental conditions around the proposed construction site. The study region for this assessment has been confined to 5 km radius from the project site.

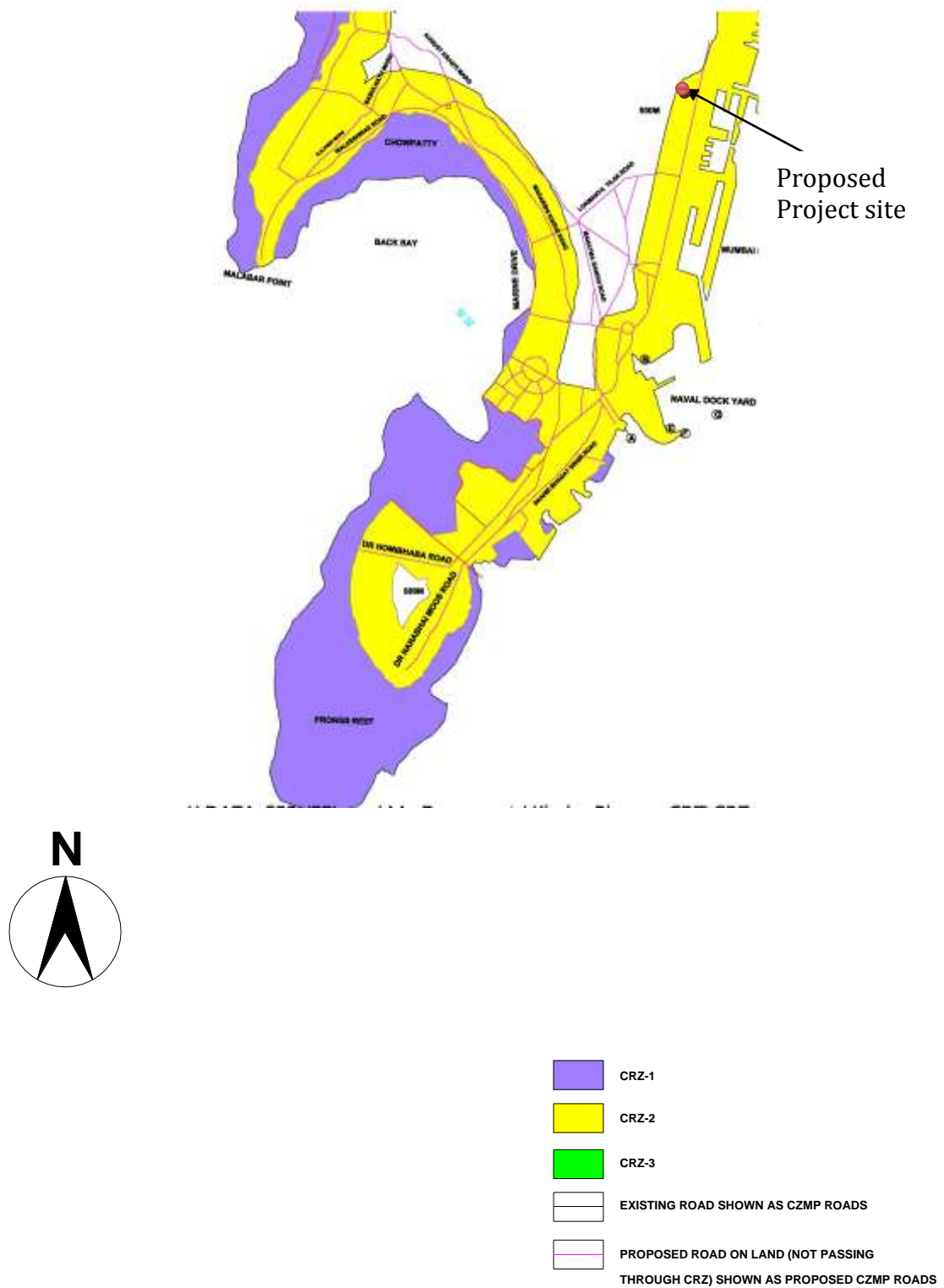
### Geographical Context

The proposed redevelopment site is under coastal regulation zone planned at Mazgaon division, located on 18°57'51.07"N latitude and 72°50'41.66"E longitude. The proposed site is located at about 2.4 km away from Chatrapati Shivaji Terminus and 0.5 km away from Dockyard road railway station. The proposed project site is approachable by Hospital Lane from south side and Dolkar Street from north Side. The complex is planned in the plot admeasuring 621.24 m<sup>2</sup> areas.

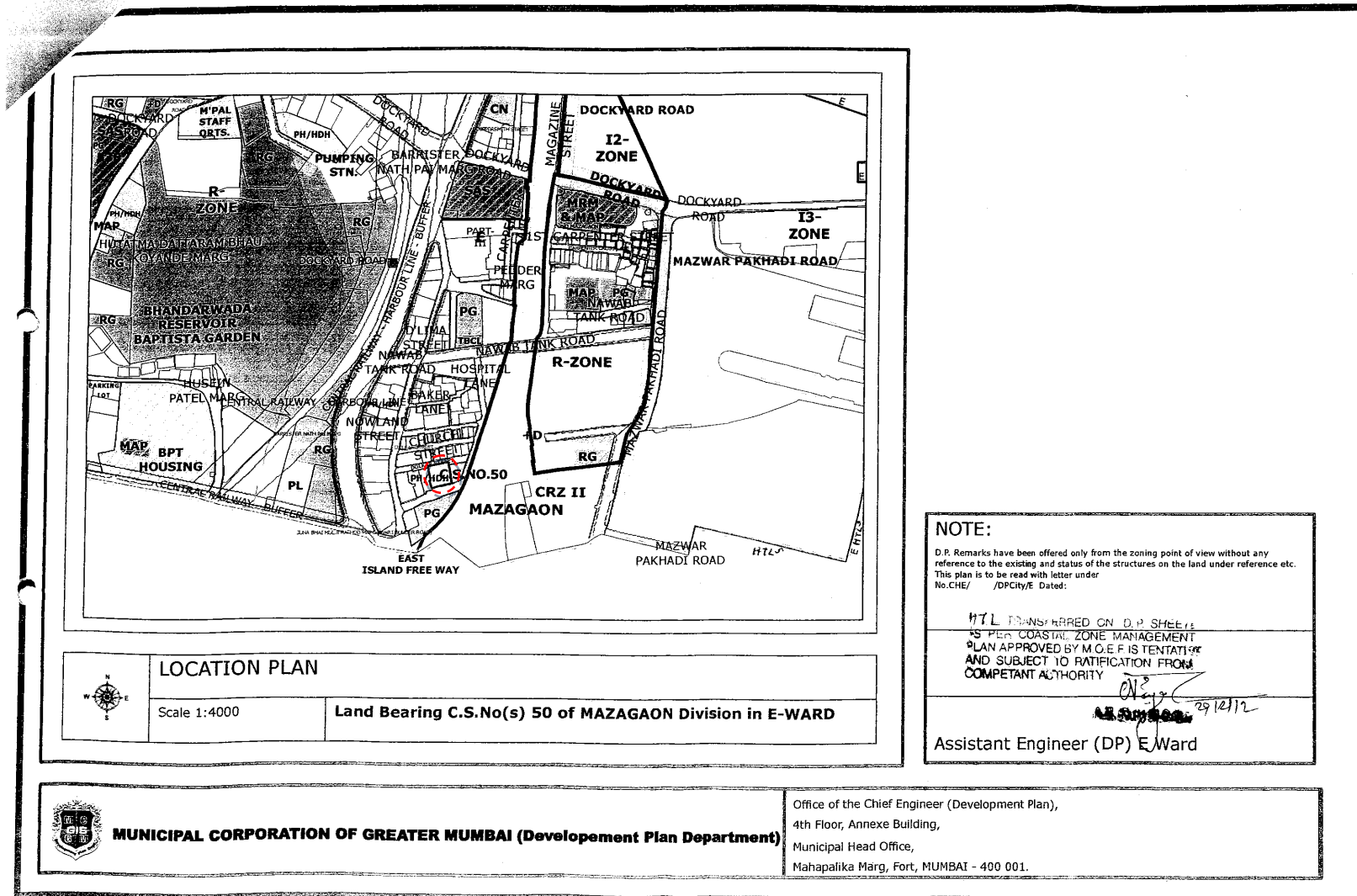
### Location of the proposed redevelopment project:



## CRZ Demarcation:



## DP Remark



### Data Sources

The study team has collected the secondary information as well as the primary information on various environmental attributes. Information on existing environmental conditions has been gathered from several sources including:

- Site surveys and field experiments to gather the information on Meteorology, Air Quality, and Water Quality, Noise Quality, Biological environment and traffic were conducted by the study team.
- The published literature mainly Gazetteers and Environmental Status Report of Brihan Mumbai Municipal Corporation,
- Maps from Geological Survey of India and Development Plans of Brihan Mumbai Municipal Corporation.
- Mumbai City Census Data 2001 and satellite imagery.
- Secondary data from IMD, Santacruz.

Key aspects of prevailing baseline environmental qualities are as follows:

### Meteorology

The climate of this region is mostly humid throughout the year. It receives heavy rainfall in the monsoon season. On an average, the temperature varies from 16.6°C to 37.9°C with marginal difference between summer and winter months and weather remains damp nearly throughout the year. The year may be divided into four seasons, as outlined below:

Season	Period
Summer	March to May
Monsoon	June to September
Post monsoon	October to November
Winter	December to February

### Ambient Air Quality

Air quality was measured at three locations in the study area considering the prevalent upwind and downwind directions. Concentrations of Suspended particulate matter, Respirable Particulate Matter, PM<sub>2.5</sub>, Sulphur dioxide, oxides of Nitrogen, Carbon Monoxide were measured. All the parameters were in the normal range and in conformance with their respective National Ambient Air Quality Standards.

### Water Quality

Arabian Sea falls in the 5 km study region. No water samples were taken because there is no source of ground water on the site and drinking water will be supplied by MCGM.

**Noise Quality**

The quality of noise was monitored at three locations in the study area. The locations selected were such as to represent residential & commercial areas. At two locations the day time noise levels were found to be within the ambient noise quality standards for day time prescribed by CPCB. The day time noise levels were found in the range of 55-65dB (C). And the Night time noise levels were found in the range of 40-44 dB (C).

**Traffic Pattern and Density**

The traffic survey was conducted to ascertain the present traffic scenario along Eastern Freeway. It has been observed from analysis of traffic surveys that surrounding road network has acceptable level of traffic carrying capacity considering the total traffic vis-à-vis total volume (i.e. both directions) during both the AM and PM peak hours.

**Land use**

The study area is predominantly well developed residential and commercial in nature. The proposed project is a redevelopment and hence there would be no change the land use.

**Flora and fauna**

A field survey undertaken around the study area and analysis of secondary data with respect to flora & fauna indicates the following:

- Plant species have been observed in the area which includes trees, shrubs and climbers; herbs are common and found in other parts of Maharashtra as well.
- The area supports varied habitats for invertebrate & vertebrate species. The avian fauna species form a major portion of vertebrate group.

**Socio-Economic Characteristics**

The project site comes under the Girgaon Division. The main land use is built-up area. The major occupational activity of the population is in service sector. An analysis of the secondary data regarding educational facilities in the study area reveals adequate availability of schooling facilities at primary and secondary levels. An average meeting the national standards with regard to health, medical infrastructural facilities is also available in the area. Besides, the area is well connected and has a fairly good amount of accessible infrastructural facilities.

**Environmental Impact Identification**

The Environmental Impact Assessment report enumerates the likely impacts due to implementation of proposed project on environmental components such as Air, Noise, Water, Land, Biological and Socio-economic environment.

**Air Environment**

During construction phase emissions from construction machinery and transportation vehicles would mainly contain particulates, SO<sub>2</sub>, NO<sub>x</sub> and CO. Dust in the atmosphere may increase during clearing and excavation.

In the functional phase impact may be mainly due to vehicular emissions.

### Noise Environment

During construction phase operation of construction and material handling machinery and use of DG sets may lead to increase in ambient noise levels.

In functional phase impact on noise may be due to vehicular traffic and operation of DG sets in case of power failure.

### Water Environment

Probable source of pollution could be spillage of oil and fuels used for construction machinery. Also sewage from the sanitary facilities for workers on the site may contaminate water. Provision will be made for septic tanks and soak pits to maintain proper hygiene.

Impact during functional phase will be mainly due to discharge of domestic sewage.

Total water requirement will be 34 m<sup>3</sup>/d. The sewage generated through the proposed project will be around 27m<sup>3</sup>/day. Sullage Treatment Plant of capacity 20 m<sup>3</sup> will be provided to treat the sullage.

**Water Balance chart**

Particulars	No of Flats /rooms	occupancy	Total Population	Water Requirement Basis (in lpcd)*		Total Water Requirement/ person	Water Demand m <sup>3</sup> /day
				Domestic	Flushing		
<b>Residential Building</b>							
Flats	47	5	235	90	45	135	32
Guest (1)	47	1	47	15	30	45	2
<b>Total</b>			<b>282</b>				<b>34</b>
<b>Sewage Generation</b>							<b>27</b>
Sullage available for residential	47	5	235			65	15
Sullage available for guest	47	1	47			10	0.5
<b>Total</b>			<b>235</b>				<b>16</b>
<b>Flushing</b>							
Flats	47	5	235		45		11
Guest (1)	47	1	47		30		1
Total water requirement for Flushing							12
Kitchen Use			235	15			4
Excess to Municipal sewer							20

### Land Environment

Soil erosion caused in the activities like clearing, cutting, filling and levelling during construction may contaminate the land.

Disposal of solid waste/garbage will be the only land pollutant factor in the functional phase. Appropriate measures will be adopted for its storage and disposal.

Solid waste generated: 127 kg/day. This waste will be disposed as per MSW rule

### Traffic Impact



During construction, movement of haul trucks carrying debris, construction material, etc. and parking of construction vehicles on the road outside the site premises may lead to congestion of traffic.

In the operation phase there will be increase in the vehicular movement because of the residents and visitors. The analysis indicates that the traffic in the proposed conditions during both the morning and evening peak hours are well below the capacity of the access road. Hence there would be no adverse impact on adjoining road traffic on account of this development.



### Biological Environment

During construction phase there will be no significant impact as there will be no cutting of trees from the construction site.

The impact on ecological environment during the use phase of the project will be positive as landscaping and plantation will be done along plot boundary.

### Socio-economic Environment



In construction phase it will create work opportunity for the local population. No negative impact is envisaged.

Overall positive impact in the functional phase, as the project in the activities such as maintenance of buildings and ancillary services.

**Environmental Management Plan**

Measures which will be adopted to reduce the magnitude of negative impacts from the proposed project during construction and functional phase are discussed below in the Environment Management Plan.

## Environmental Management Plan during Construction Phase

Sr. No.	Environmental Components	Predicted Impacts	Probable source of Impact	Mitigation Measures	Remarks
<b>CONSTRUCTION PHASE</b>					
1.	Ambient Air Quality	Negative impact inside construction site premises. No negative impact outside site.	Dust emissions from excavation, air emissions from machinery and other construction activities at site.	Dust reduction measures such as road watering. Periodic maintenance of construction equipment. Use of good quality fuels. Use of Personal Protective Equipments	Impacts are temporary during construction phase. Impacts will be confined to short distances, as coarse particles will settle within the short distance from activities.
2.	Noise	Negative impact near noise generation sources inside premises.  No significant impact on ambient noise levels in the surrounding area.	Noise generated from construction activities and operation of construction equipment and DG sets	Use of well maintained equipment. Heavy construction activity limited to day-time hours only. Use of noise mufflers in portable DG sets and construction vehicle. Use of earplugs/muffs by construction staff.	Temporary impacts during construction phase. No blasting or other high noise activities envisaged.
3.	Water quality	No significant negative impact.	Surface runoff from project site. Oil/fuel and waste spills. Improper debris disposal.	Silt fences to reduce run-off Secondary containment and dykes in material storage areas.	Impact will be temporary. Local labour will be employed to reduce size of labour camps. No perennial surface water resource adjacent to site.
4	Land	Minor negative impact	Excavation, Construction debris, waste from labour camp.	Reutilisation and recycling of construction debris  Topsoil will be conserved and used for	

Sr. No.	Environmental Components	Predicted Impacts	Probable source of Impact	Mitigation Measures	Remarks
<b>CONSTRUCTION PHASE</b>					
				landscaping in functional phase.-	
5.	Aesthetics	Minor negative impacts	Construction activities and Excavation	The impacts will be compensated by extensive tree plantation and gardening in the use phase.	Short term impact restricted only in the initial stages of construction.
6.	Biological	No Significant impacts	Cutting of trees in the labour camps for cooking, Habitat disturbance during construction activity.	Suitable alternatives for this purpose will be found.	The site is devoid of any tree cover. There is no significant flora, fauna diversity and density
7.	Socio-economic	Overall positive impact	Increased job opportunity for locals.	--	--
8	Traffic Pattern	No Negative Impact	Haul truck movement and possibility of traffic congestion outside site on the road.	Adequate parking space for haul trucks will be provided inside the site.	--

## Environmental Management Plan during functional Phase

Sr. No.	Environmental Components	Predicted Impacts	Probable Source Of Impact	Mitigation Measures	Remarks
<b>FUNCTIONAL PHASE</b>					
1.	Ambient Air Quality	Minor Negative impact	Particulate and gaseous emissions from DG sets and vehicle movement	Use of low sulphur good fuel Periodic maintenance of DG sets. Use of CNG/LPG as a fuel should be encouraged.	DG sets will be used only during power failure.
2.	Noise	Minor negative impact inside premises.	Noise from vehicle movement and operation of diesel generator sets during power failure.	Housing of DG sets in buildings with appropriate acoustics. Traffic management measures to reduce noise	--
3.	Water	No significant adverse impact	Oil/ fuel and waste spills in vehicle parking area. Discharge of sewage. Discharge of contaminated storm water	As the sewage generation will be around 20 m <sup>3</sup> /day, The sullage generated from the proposed project will be 10 m <sup>3</sup> /day. Sullage Treatment plant of capacity 15 m <sup>3</sup> will be provided. Rainwater harvesting will be done by providing RWH tank for the proposed building Good housekeeping and storm water management will be followed.	
4	Land	No negative impact	Storage and disposal of solid wastes. Discharge of sewage.	Treatment and reuse of treated water. Integrated waste management and spill control plan	Segregation of dry and wet garbage before will be done before disposal.

Sr. No.	Environmental Components	Predicted Impacts	Probable Source Of Impact	Mitigation Measures	Remarks
<b>FUNCTIONAL PHASE</b>					
			Fuel and material spills.	Waste will be disposed as per MSW rule.	
5	Biological	Overall Positive impact	Cutting and uprooting trees Habitat disturbance	Green spaces inside the premises will help to compensate the earlier effect from vegetation.	Landscaping will help in reducing any adverse impacts on air and noise quality.
6	Socio-economic	Overall Major Positive impact	Increased job opportunity in commercial complex, hotel and ancillary maintenance services.	--	Positive and long term impact-
7	Traffic Pattern	No significant Impact	The Building is likely to add moderately to the traffic flow considered during peak hour.	Traffic Management practises will be employed.  Adequate parking space will be provided in the premises.	The existing traffic flow in the peak hours is below the capacity of the road to cater the traffic. Thus Project will add no significant additional traffic burden on the road.
8	Aesthetics	Positive Impact	Landscaping and gardens	--	Help in improving general ambience of the area.