EXECUTIVE SUMMARY

for

Redevelopment of Existing Residential Building known as 'Harmas House'

at

Plot bearing C.S. No. 832,Plot no.95,Worli Division at Khan Abdul Gaffar Khan Road, Worli, Mumbai 400018

Developer

KARP ESTATE PRIVATE LIMITED

Mumbai, the capital of Maharashtra is also the financial capital and the most populated city of India. Mumbai has grown in recent decades for many residential and commercial developments. Diminishing of Industrial zones and development of corporate offices, mall culture in very short period is one of the features of today's Mumbai. Mumbai has many old, dilapidated structures. They are very unsafe to retain. Many of them are in CRZ zones. Development of those by rehabilitant those tenants along with development of new flats to compensate the development charges will not be possible if Extra FSI is not used. Because of CRZ conditions the FSI restriction makes those structures unattended.

1.1 PREAMBLE

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. On the other hand that there are thousands of ageing buildings which are dilapidated and have reached a stage where it is not possible to carry out structural repairs and rehabilitation as the same are not economically viable. The redevelopment of dilapidated building has become a necessity since the problem of old and dilapidated buildings in the city of Mumbai grows more acute with each passing year and with each passing monsoon more and more building becomes dangerous and unfit for habitation. Hence, Karp Estate Private Limited has identified business possibility in this field to provide space for accommodation.

1.2 NEED OF PROJECT

Many buildings collapse each year, killing or injuring people. Many of these buildings are so run down that they are unrepairable and the only solution is to put them down totally and to reconstruct them. Government has floated various schemes wherein they have allowed incentive FSI for carrying out redevelopment schemes. Proposed redevelopment thus will help the existing tenants to get permanent, safe structure. At present they are residing in old building.

As per MCGM – Notice under section 354 of the Mumbai Municipal Corporation Act Notice No: - ACGS/BFJ6-189/354/28/2011-12 Dated:- 30/4/2011 states that the

building is in dilapidated condition, therefore redevelopment of such dilapidated building is proposed to provide safe structure to the tenants.

The photographs of the existing building are given in Figure 1.1 below.


10 09 2015


10 09 2015

Figure 1.1: Photographs of Existing Buildings at Proposed Site

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

Karp Estate Private Limited has proposed redevelopment of a residential building 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	Karp Estate Private Limited
2	Name of Contact person	Mr. Debashis Mitra
3.	Designation of Contact person	Head - Planning
4.	Contact No	+91 22 6152 3000 +91 22 6152 3071
5.	Email	debashis@namangroup.com
6.	Address	Naman Centre,C-31,G-Block, Bandra Kurla Complex, Bandra (E), Mumbai -400 051. Tel. No. +91 22 61523000

1.5 LOCATION OF THE PROJECT

The proposed project admeasuring about 2584.38 Sq. m. of Plot bearing C.S. No. 832, Plot no.95, Worli Division at Khan Abdul Gaffar Khan Road, Worli, Mumbai. The Google image of the proposed site is given in Figure 1.2 and Location of Proposed Project on CZMP is given in Figure 1.3.

Figure 1.2 Location of Proposed Project on Google Image

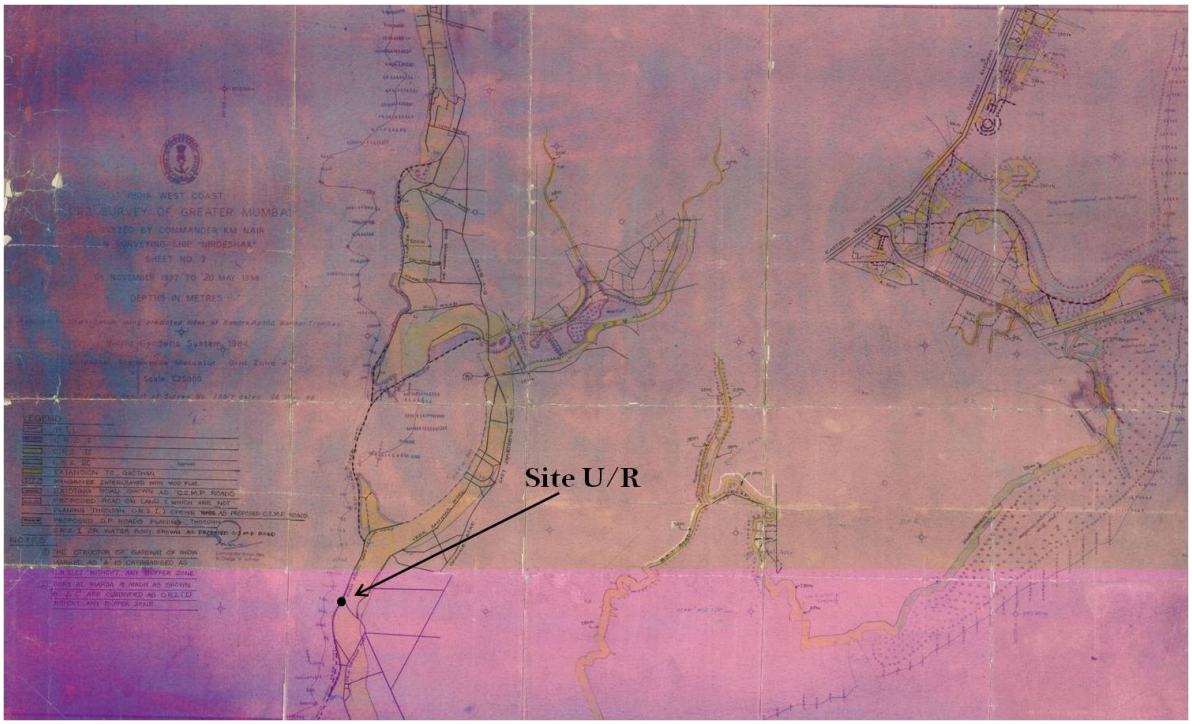

Figure 1.3: Location of Project site on CZMP

1.6 DESCRIPTION OF PROJECT SITE

The proposed project has existing access road from R. G. Thadani Marg and Khan Abdul Gafar Khan Road. The environmental features are illustrated in given Table 1.2 given below. The plan showing the block plan of the proposed project is shown in Figure 1.4.

Table-1.2: Environmental Setting of Proposed Project

Sr. No.	Particulars	Details
1	Latitude	19^0 01'13.23" N
2	Longitude	72^0 48'47.44" E
3	Elevation above MSL	10 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 zone as per D.P Remarks
6	Transport Connectivity	
A	Nearest Highway	Western Express Highway
B	Nearest Railway Station	Elphinstone Railway Station -3.4km - E Lower Parel Railway Station -3.5 km -E Curry Road Railway Station - 3.8km - E
C	Nearest Road	Worli Seaface Road , R.G. Thadani Marg & Khan Abdul Gafar Khan Road.
7	Social Aspect	
A	Nearest School/College	• Worli Seaface English School • The French International School of Bombay • BMC High School • Green Lawns School Worli • Sanjeevani Vidya Mandir • Maratha Mandir Babasaheb Gawade High School • Jijamata Nagar Municipal Urdu School • Gokul English Primary School • Watumull Institute of Electronic Engineering and Computer Technology • Universal College of Management, science & Commerce • Rachana Sansad College
B	Nearest Hospital	Worli Dispensary M.A.Podar Hospital ESIS Hospital
C	Nearest Fire Station	Worli Fire Station - 3.5km - N
D	Nearest Police Station	Worli Police Station
8	Hills/Valleys	Nil
9	Ecologically sensitive zones within 15-km distance	CRZ - II

Sr. No.	Particulars	Details
10	Seismic Zone	Zone – III

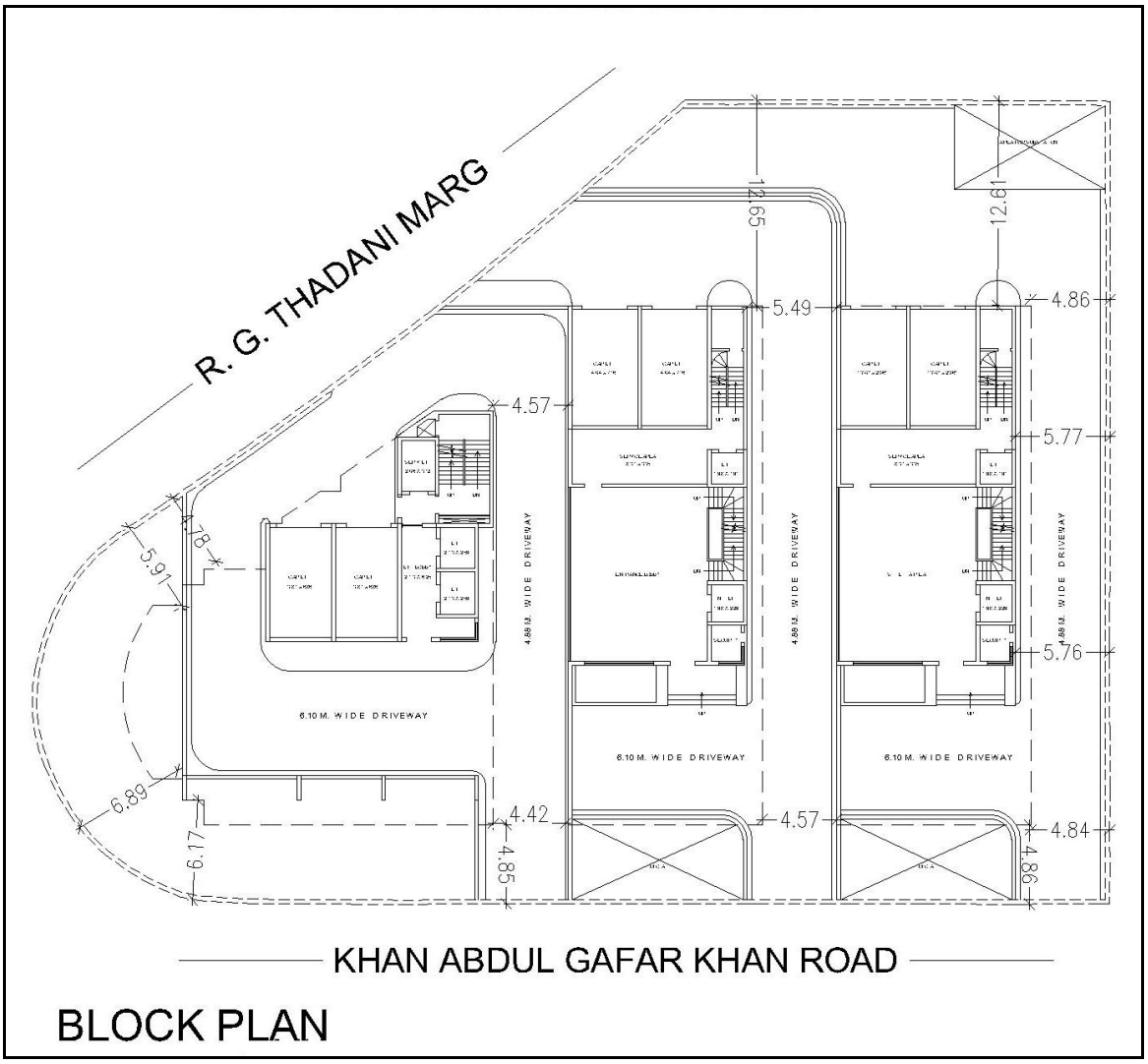

Figure 1.4: Block Plan of the Proposed Site

1.7 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	
	CTS No	C.S. No. 832, Plot no.95
	Village	Worli
	Tehsil	Mumbai
	District	Mumbai
	State	Maharashtra
3	Site fall under CRZ I/II/III	CRZ - II
4	Distance of proposed building from HTL	37 m (approx.)
5	Proposed Plot Area	2584.38 Sq. m
6	Permissible FSI	1.33
7	FSI consumed	1.329
8	Proposed BUA	3436.40 Sq. m
9	Total Construction area	17088.6 Sq. m
10	No. of Building	3 Building (Residential & Parking)
11	Configuration of proposed Buildings	***Building 1*** : 3rd Basement (Service Floor) + Basement 2 &1 (Parking) Stilt (Entrance lobby) + 1st to 6th Podium floors (Parking) + 7th Service floor + 8th to 18th Residential Floors (4 Duplex + 1 Triplex).
		Building 2 &3 : 3 Basements (Parking) + Stilt Floor + 1st Floor (Parking) + 2nd to 5th floors (Residential floors).
12	Population	43 Nos. (Residential) + 7 Nos. (Floating)
13	Water	
a	Source	MCGM
b	Total water requirement	6 KLD
c	Total sewer generation	5 KLD
d	Mode Of Disposal	Wastewater generated on site is connected to the existing Municipal Sewer line.
14	Solid Waste Generation	18 kg/day
	Mode of Disposal	Solid waste will be handed over to the MCGM waste collecting vehicles.
16	Power	
a	Requirement	Maximum Demand: 260 KW
b	Source	B. E. S. T
17	Project cost	Rs. 118,80,00,000/-
18	Parking Details	Parking Required: 20 Nos. Parking Provided: 34 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: 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.

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 48.20 dB (A) to 74.60 dB (A).

Night Time Noise Levels (L_{night})

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

2.5 WATER QUALITY

Ground Water Quality:

Parameters	**Units**
pH	7.8
Suspended Solids	40.0 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^2
G/S	Worli	10 Sq. Km	112639Apporx.	5,63,195 Approx.	56319.5 Approx.

Source: http://www.mcgm.gov.in/irj/portal/anonymous/qlwardgs

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 labors and by tankers 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). 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 (m^3/day)	Waste water generated (m^3/day)
1.	Domestic use of construction workers	MCGM	10	8 (@80% of water supply)
2.	Construction activity	Tanker water	40	--
	Total		**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:

The average water consumption for residential buildings has been calculated as 135 litres per capita per day (as prescribed by the National Building Code of India 2005, Part 9 ,Section 1 ,Page No. 19). During operation phase, water supplied by MCGM would be used for domestic purpose and for other purposes like flushing.

Table 1.5: Water Requirement during Operation Phase

Type	Population	Domestic		Flushing	
		Standard (CMD)	Quantity (CMD)	Standard (CMD)	Quantity (CMD)
Residential	43	90	3.87	45	1.94
Visitors/Servants/ Drivers (10%)	7	20	0.14	25	0.18
			4		2
Total	50	6			

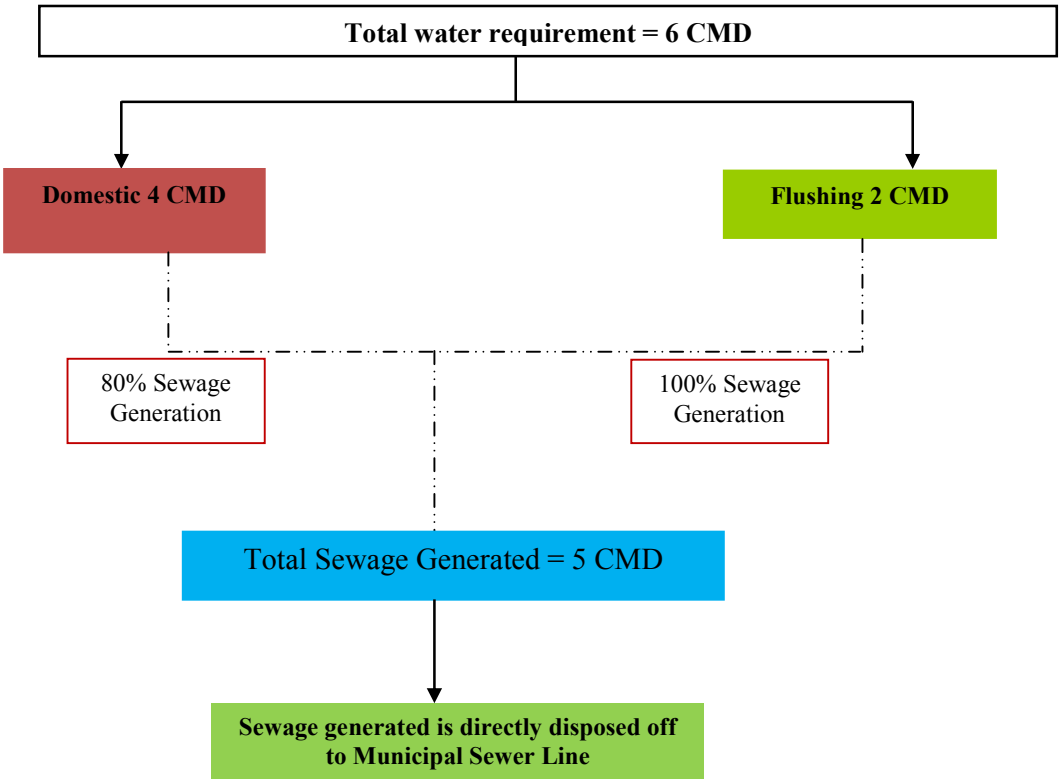

Figure 1.6: Water Balance

Sewage line will be collected to existing municipal sewer line.

3.2 SOLID WASTE GENERATION AND MITIGATION MEASURES

Construction stage

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 @ 0.4 Kg/day/person 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 disposed off into the garbage collecting vehicles of the local authorities.

Table 1.6. Solid Waste Calculation during operation phase

Type	Population	Standard (kg/day/person)	Quantity (kg/day)	Solid Waste Generation (Kg/day)	
				Biodegradable waste (60 %)	Non-biodegradable waste (40%)
Residential	43	0.4	17.2	10.3	6.9
Floating	7	0.1	0.7	0.4	0.3
Total	**50**		**18**	**11**	**7**

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

Maximum Demand – 260 KW

The building will have following energy saving measures

- External lighting is proposed on solar.
- Light fixtures will be used with energy saving CFL & T5 fluorescent tube with electronic chocks.
- Selection of Energy efficient equipments (BEE STAR RATED).
- All vertical fenestration will be as per ECBC

3.4 AIR & NOISE POLLUTION & CONTROL MEASURES

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

3.5 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 tank 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**

  Waste water generated will be disposed off directly into Municipal sewer line.

- **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,	Quarterly	Municipal supply

		biological parameters.		
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 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 m 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 for fire fighting.
- Exit sign & Emergency escape route sign 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
- 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

Adequate land will be available for open spaces and other non-building purposes approx. 288.18 Sq. m. area will be taken for green cover / lawn development in the proposed facility. Suitable plant species of local varieties will be planted with adequate spacing and density for their fast growth and survival.

8.0 CONCLUSION

The project proponents M/s. Karp Estate Private Limited seems to be safety conscious and alert about good housekeeping and is environment friendly. We may conclude as under:

- Proposed Redevelopment project is in Worli area of Mumbai. The site under reference is affected by CRZ-II zone. It abuts HTL. It is the landward side of the existing Khan Abdul Gafar Khan Road.
- Hence the work is permitted subject to the approval of CRZ clearance. Thus property attract 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. CFO approval is already obtained
- Building is designed to meet requirements of seismic zone III.
- Rain water harvesting is proposed to recharge the runoff water.
- Ambient Air Quality of the project site will be within the permissible limit as prescribed by National Ambient Air Quality Standards.
- Solid waste generated will be handed over to the authorized Municipal vehicles for final disposal.
- 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 14 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.