# PRE - FEASIBILITY REPORT

FOR OBTAINING ENVIRONMENT CLEARANCE

FOR PROPOSED COMMERCIAL COMPLEX

## "SURAT DIAMOND BOURSE"

BY

## M/s. SDB DIAMOND BOURSE

Located at

Block No.: 177/P, Moje: Khajod, Taluka: Surat City, District: Surat, State: Gujarat-395007.

Prepared by:

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# EXECUTIVE SUMMARY OF THE REPORT

**M/s. SDB DIAMOND BOURSE** is planning to construct a Commercial Complex of "Surat Diamond Bourse" at **Block No. 177/P, Moje- Khajod, Taluka- Surat City, District – Surat, State- Gujarat.** The commercial complex will be constructed on the government barren land. Around 1,43,825.40 $m^2$ land will be utilized for the proposed project. The proposed built area for the project will be 6,31,826.7 $m^2$ of area.

## PROJECT COST

Cost of the proposed project is Rs. 2207.5 Crores.

## REQUIREMENTS FOR THE PROJECT

### LAND:

Around **143825.40 sq. m.** land will be utilized for the proposed constructed project. The commercial complex will be constructed on the government barren land.

### WATER CONSUMPTION:

During construction phase approx 575 KLD water will be utilized for the domestic purpose and for construction activity, which will be sourced from Dream City through SMC. During Operational Phase water requirement will be approx 1790 KLD (Fresh- 900 KLD + Recycled- 890 KLD) shall be met through Dream City network.

### ELECTRICAL ENERGY:

During Construction Phase total power requirement will be 1650 KVA and 1 no of D.G. Set of 2000 KVA will be required.

During Operational Phase total power requirement will be 18.8 MW. Power supply shall be met from DGVCL. In case of power failure, 7 Nos D.G. Set of 2000 KVA each will be provided.

### WASTE WATER GENERATION AND ITS TREATMENT:

During Construction phase 180 KLD water will be generated which will be disposed of through underground drainage network of Dream City.

During Operation phase 890 KLD domestic wastes shall be generated during operational phase which will be further treated into the adequate capacity STP and the treated waste water will be reused for flushing, cooling and gardening work.

### SOLID WASTE GENERATION AND ITS DISPOSAL METHOD

Door to Door solid waste collection system will be carried out. That will be provided at project site also.

### GREEN BELT DEVELOPMENT

Green Belt area shall be developed at plot boundary and road side. Around 6,244 $m^2$ area will be provided for the green belt development.

# INDEX

# CHAPTER- 1 INTRODUCTION OF THE PROJECT

## 1.1 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

M/s. SBD Diamond bourse is planning to set up the Commercial Complex at Block No. 177/P, Moje-Khajod, Taluka- Surat City, District – Surat, State- Gujarat-395007.

INTERNAL FACILITIES:

1. Earthquake proof, R.C.C. Design
2. Lower Basement, Upper Basement + Ground Floor + 1 building interconnected with 9 towers having 15 Floor structure in complex with 4697 nos. of office units.
3. Tiles flooring
4. Internal Plumbing & sanitation
5. Internal & Common electrification
6. Office roof, with water proofing
7. U.G. tank & O/H tank with Pump.

B. PHYSICAL INFRASTRUCTURE FACILITIES:

1. Surround pavement (paver blocks)
2. Drainage Network
3. Water supply Network
4. RCC internal roads
5. Street lights on internal roads
6. Fire and Safety Provisions in campus and individual buildings.

The proposed products fall under Category 8(b) as stated in Environment Impact Assessment Notification Published on 14th September, 2006.

Surat Diamond Bourse, a company floated recently by diamond barons, plans to establish a new bourse here over a period of four years. Representatives of the company had already submitted a formal expression of interest to the Gujarat government regarding the proposed investment during the Vibrant Gujarat summit and received necessary approvals for the project.

The purpose is to get buyers from across the world to visit the city for business and execute transactions at one place. The proposed hub will have 9 iconic and interconnected buildings of 15 floors and house with 4697 offices. One of the administrative committee members of Surat Diamond Bourse informed that there are total 4500 members.

## 1.2 PROMOTERS BACKGROUND

Details of project promoters are as below:

1. Vallabhai Shamjibhai Patel

2. Govinbhai Lajibhai Dholakia

3. Lajibhai Tulsibhai Patel

4. Ashit Vasantlal Mehta

5. Mathurbhai Madhabhai Savani

6. Manubhai Bholabhai Davariya

7. Jitendra Babulal Shah

## 1.3 BRIEF DESCRIPTION OF NATURE OF THE PROJECT

Surat Diamond Bourse Office will be one of the world's largest office buildings. The building will accommodate over 4,000-5,000 offices for the diamond traders and seeks to become the centre of international diamond trade.

The environmental impact of the development has been consciously minimized while best suiting the highly specialized requirements for a diamond-trading center. Passive design strategies like day-lit workspaces, natural ventilation and indoor/outdoor interaction using landscaping have been incorporated to eliminate/avoid Sick Building Syndrome, which is a common phenomenon is office buildings of such a large scale.

Given the scale of the development, the primary challenge was to navigate large volumes of people. The approach was to elevate the users' spatial and transitional experience across the building without highlighting the expanse of the structure. At site level, the master planning involved a conscious traffic segregation ensuring vehicular efficiency and pedestrian safety. While the ground level was used for vehicular movement, the podium level is exclusively designed for pedestrian circulation. Thus, the design strategy employed was one quite similar to an airport terminal and resulted in a 22 km long consolidated walk-able corridor across 15 floors. Functional proximities were governed by optimising travel distances right from the site entrance till the farthest possible office module in less than 4 minutes. Grand entrance lobbies create a strong arrival experience and are located well within 100 M or 1.5min walking distance from each site entrance. Each core is located within a 35 seconds walk from each lobby. Secondary cores are located further at a distance of 1 minute walking distance from the primary cores.

Exploring the potential of adaptive comfort and creating a controlled microclimate helped realize the possibility of using natural ventilation and (protected) open spaces for interactive functions of the programme. The overall morphology of the building channelizes the prevailing winds making natural ventilation an effective strategy. Common facilities making up over 40% of the built-up area were naturally ventilated to serve as comfortable interactive spots promoting social integrity.

The central spine connecting all offices is designed as an interactive hub comprising of break-out spaces, green atriums and a host of visual experiences. Dense vegetation within and around the building not only has a psychological advantage but also improves the indoor air quality, purifying and adding to the oxygen levels.

An interconnected network of courtyards creates a variety of views and aids the occupants with psychological mapping while on the move. The courts on the Western side are heavily landscaped to act as a buffer from the afternoon sun and the Eastern courts support functions like the food courts, recreational and interaction spaces. These courts foster the transactional and informal bazaar culture, functioning as incubators for new businesses.

Open landscaped areas were created using passive strategies which help control the local microclimate of the campus and expected to reduce radiant heat/temperatures by over 10°C. Leveled landscape ensures equal ease of access for people with different physical abilities. Public plaza leads to a host of recreational activities at the Diamond club – emphasizing the concept of social inclusion.

### Need for the Project and Its Importance to the Country and/or Region

Surat Diamond Bourse will be seen as an exemplar for integrating high-density commercial architecture along with efficient climate-responsive design. The project will be equipped with the state-of-the-art facilities that include safe deposit vaults, customs clearance house, world standard convention centre, exhibition centers, training center.

### Employment Generation (Direct and Indirect)

During construction phase nos. of workers will be 5000 and during operation phase nos. of visitors will be 1419 and nos. of permanent staff will be 31220.

# CHAPTER-2 PROJECT DESCRIPTION

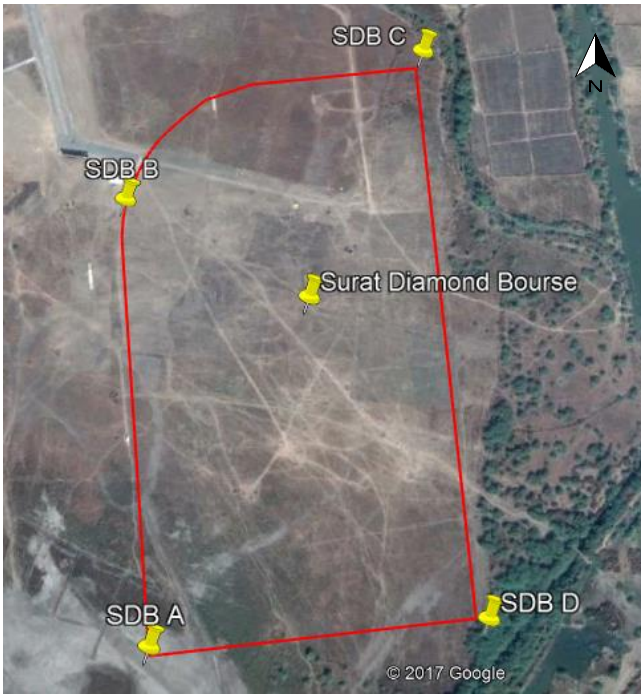
## 2.1 TYPE OF PROJECT INCLUDING INTERLINKED AND INTERDEPENDENT PROJECTS

Development in India has increased economic growth and improved living standards of people. These growths are achieved through industrialization, infrastructure development. The industrialization has played a major role in development of the country. This industrialization is also has many other benefits. Although the industrial development leads to rapid consumption of natural resources, fuel etc. in day to day operational activity. To control the pollutions from industrial activity, government has framed regulations which are governed by Ministry of Environment, Forests and Climate Change in India.

## 2.2 LOCATION

**M/s. SDB DIAMOND BOURSE** is planning to construct a project of "Commercial Complex" at **Block No. 177/P, Moje- Khajod, Taluka- Surat City, District – Surat, State- Gujarat.** The commercial complex will be constructed on the government barren land. Around 1,43,825.40 $m^2$ land will be utilized for the proposed project. The proposed built area for the project will be 6,31,826.7 $m^2$ of area. A map showing project site is given in

*Figure Error! No text of specified style in document.-1.*




| Identification | Latitude & Longitude |
|---|---|
| | 21° 6'36.87"N 72°47'42.80"E |
| A | 21° 06'42.49"N 72°47'37.20"E |
| B | 21° 06'42.50"N 72°47'38.53"E |
| C | 21° 06'44.08"N 72°47'47.20"E |
| D | 21° 06'27.30"N 72°47'47.26"E |

*Figure Error! No text of specified style in document.-1: Location of the Project Site*

*Figure- 2.2 Location of the project Site*

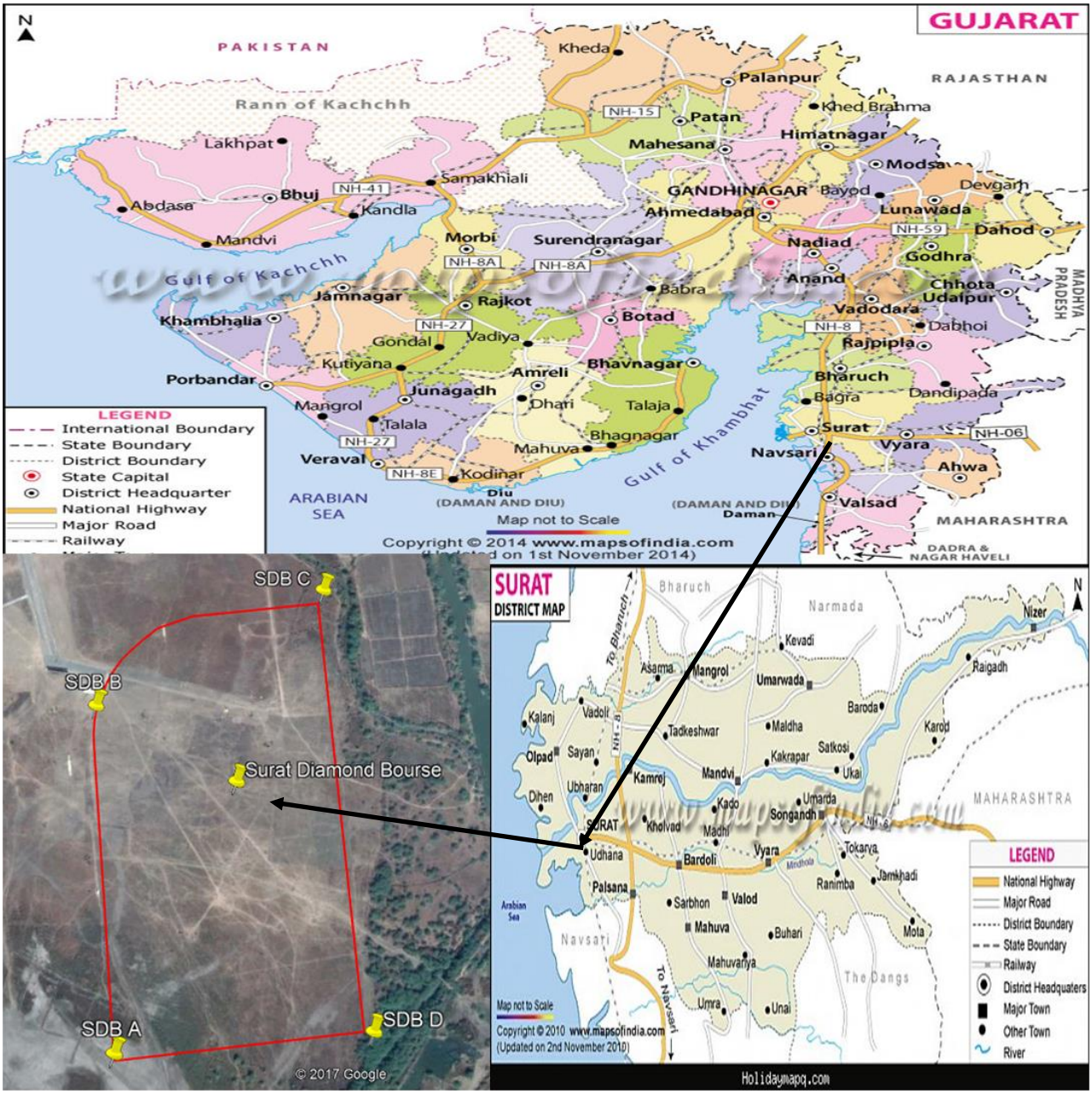



Table Error! No text of specified style in document.-1: Salient Features In the Surroundings Area of the Site within 10 Km Radius

| Sr. No. | Feature | Description |
|---|---|---|
| 1. | Address | Block No. 177/P, Moje- Khajod, Taluka- Surat City, District – Surat, State- Gujarat-395007 |
| 2. | GPS Co-ordinates | 21° 6'36.87"N<br>72°47'42.80"E |
| 3. | Power station | Dakshin Gujarat Vij Company Limited |
| 4. | Temperature Range | 12-45 °C |
| 5. | Annual Rainfall | 1192 m |

| Sr. No. | Feature | Description |
|---|---|---|
| 6. | Nearest Airport | Surat at approximately 5.63 Km from the proposed site in West North West direction. |
| 7. | Nearest Road | NH-288 6.59 km in NE<br>SH-168 1.23 km in N |
| 8. | Nearest Railway Station | Bhestan at approx. 7.13 Km from proposed site in East direction |
| 9. | Nearest City | Surat at approx. 7.54 km in North North-East direction |
| 10. | Nearest River | Mindhola river approx. 4.89 km in South direction. |
| 11. | Seismic Zone | Zone-III (Medium Risk Zone) |
| 12. | National Park and / Sanctuary | None within 10 km radius. |

## 2.3 SELECTION OF THE PROPOSED PROJECT SITE

All the physical infrastructure facilities like water supply, drainage & storm drain are planned on the Dream City project. So all proposed infrastructure facilities will be available from this road and city level infrastructure facilities will be available at site.

## 2.4 SIZE OF OPERATION

Proposed project is the construction project of commercial complex "Surat Diamond Bourse" having land area is around 1,43,825.40 $m^2$ with built up area 6,31,826.7 $m^2$.

## 2.5 RAW MATERIAL REQUIREMENTS

Construction materials i.e. cement reinforced steel, sand, Coarse Aggregate, bricks etc. will be procured from the local market as per requirements. Approximate Quantities are mentioned below table:

TABLE 2.2: RAW MATERIALS REQUIREMENT

| SR. NO. | ITEM | QUANTITY | UNITS | SOURCE | MODE OF TRANSPORTATION |
|---|---|---|---|---|---|
| 1. | Cement | 2,05,976 | Bags | Surat District | Trucks |
| 2. | Sand | 7,39,237 | Cu. Mt. | Surat District | Trucks |
| 3. | Coarse aggregate | 3,22,232 | Cu. Mt. | Surat District | Trucks |
| 4. | Reinforced steel | 5,05,461 | Ton | Surat District | Trucks |
| 5. | Bricks | 1,82,21,882 | Nos. | Surat District | Trucks |

## 2.6 AVAILABILITY OF WATER ITS SOURCE & POWER REQUIREMENT ITS SOURCE

### 2.6.1 WATER REQUIREMENT AND ITS SOURCE

The main source of water supply is Dream City. Treated Water will be supplied from Dream City. During Construction phase source of water will be the source from Dream city. Total water requirement for the proposed project during operational phase will be 1790 KLD.

### 2.6.2 POWER REQUIREMENT AND ITS SOURCE

During Construction total power requirement will be 1650 KVA and source will be DGVCL. In case of power failure, one no. of 200 KVA D. G. Set will be provided.

During Operational Phase total power requirement will be 18.8 KW and source will be DGVCL. In case of power failure, 7 no. of 2000 KVA D. G. Set will be provided.

## 2.7 QUANTITY OF WASTES TO BE GENERATED AND THEIR DISPOSAL

During Construction Phase domestic waste water of around 180 KLD generated which will be disposed off through underground network of dream city.

During Operational Phase water requirement will be approx 1790 KLD (Fresh- 900 KLD + Recycled – 890 KLD) shall be met through Dream City network. During operational phase 890 KLD domestic waste water shall be generated which will be further treated into the adequate capacity STP and the treated waste water will be reused for flushing, cooling and gardening work.

## 2.8 QUANTITY OF WASTES TO BE GENERATED AND SCHEME FOR THEIR MANAGEMENT/DISPOSAL

For details of water consumption and wastewater generation*. Refer Additional Attachment.*

For details of solid and hazardous waste management. *Refer Additional Attachment.*

# CHAPTER- 3 SITE ANALYSIS

## 3.1 CONNECTIVITY

The unit is well connected to the road, highways, railways, airports. Details of the facility with distance from the unit are as under:

| Sr. No. | Particular | Description | Distance (km) | Direction |
|---|---|---|---|---|
| 1. | Nearest National Highway | NH-288<br>SH-168 | 6.59<br>1.23 | NE<br>N |
| 2. | Nearest town | Surat | 7.54 | NNE |
| 3. | Nearest Airport | Surat | 5.63 | WNW |
| 4. | Nearest Railway station | Bhestan | 7.13 | E |

## 3.2 COMMUNICATION

Proposed project site is well connected with telephone, telefax etc. all the communications facilities are well developed in the area.

## 3.3 TOPOGRAPHY AND GEOGRAPHY

The geography of Surat is such that it has an average elevation of about 13 meters. Land and Soil condition found in the project study area is saline in nature.

## 3.4 CLIMATE OF THE STUDY AREA

Surat has a tropical savanna climate moderated strongly by the Arabian Sea. The summer begins in early March and lasts till June. April and May are the hottest months, the average maximum temperature being 42 °C (99 °F). Monsoon begins in late June and the city receives about 1,200 millimeters (47 in) of rain by the end of September, with the average maximum being 32 °C (90 °F) during those months. October and November see the retreat of the monsoon and a return of high temperatures till late November. Winter starts in December and ends in late February, with average temperatures of around 23 °C (73 °F).

## 3.5 EXISTING LAND USE PATTERN

There is no Forest, National park; Wild life sanctuary within a radius of 10 km.

# CHAPTER-4 PLANNING BRIEF

## 4.1 PLANNING CONCEPT

The proposed construction project of "Surat Diamond Bourse" at **Block No. 177/P, Moje- Khajod, Taluka-Surat City, District – Surat, State- Gujarat-395007.**

## 4.2 POPULATION PROJECTION

The proposed construction project is 'Surat Diamond Bourse' at **Block No. 177/P, Moje- Khajod, Taluka-Surat City, District – Surat, State- Gujarat-395007**. During construction period approximately5000 Nos. man power was required.

## 4.3 LAND USE PLANNING

For the proposed project Green Belt area development is going on at plot boundary, road side and Stretch of open land. Detailed plan layout is attached as ***additional document***. Detailed land use breakup mentioned in the below mentioned table:

TABLE 4.1: DETAILS OF LAND USE BREAKUP

| NO. | PARTICULAR | AREA IN SQ. M. TOTAL |
|---|---|---|
| 1. | Plot / Land Area | 1,43,825.40 |
| 2. | Built-up Area | 6,31,826.7 |
| 3. | FSI Area | 3,98,176.42 |
| 4. | Parking Area | 2,14,757.42 |
| 5. | Common Plot Area | 14,388.94 |

## 4.4 ASSESSMENT OF INFRASTRUCTURE DEMAND

Surat is referred as the commercial capital of the Indian state of Gujarat. Surat is one of the fastest growing cities in India with a population in 2010 nearly the double of that in 2001. Surat is widely regarded as one of the cleanest cities in the country with the city proper being the third cleanest city in India. The city is located 306 km south of state capital Gandhinagar, and is situated on the left bank of the Tapti River. The city is largely recognized for its textile and diamond businesses. It is also known as the diamond capital of the world and the textile capital of India. 92% of the world's diamonds are cut and polished in surat. It has one of the highest GDP growth rates in India at 11.5% as of 2008.

As surat is gradually expanding as a metropolitan city Real Estate sector is also growing in and around region of surat, so various areas in outskirts of Surat have been included in the city limit. Thus the demand of commercial complexes is also increasing with leaps and bounces.

## 4.5 AMENTIES / FACILITIES

Following facilities will be provided in the proposed unit:

- Main Entrance lobby & reception
- Auction House
- Food Zone
- Banks
- Customs & Excise Office
- Money Transfer Desks
- Courier Desks
- Travel Desk
- Medical Centre / Infirmary
- Health Club
- Safe Deposit Vault
- Conference Hall
- Banquet Hall
- Kitchen and Ancillary Spaces

# CHAPTER-5 PROPOSED INFRASTRUCTURE

## 5.1 COMMERICAL AREA

Construction project of Surat Diamond Bourse at Block No. 177/P, Moje- Khajod, Taluka- Surat City, District – Surat, State- Gujarat-395007.

TABLE 5.1: DETAILS OF BUILT-UP AREA

| Particulars | Built Up area (Sq.mt) | F.S.I Area (Sq.mt) |
|---|---|---|
| Lower Basement | 98275.59 | 3138.39 |
| Upper basement area | 98144.24 | 5990.16 |
| Ground Floor | 32885.75 | 30238.72 |
| Typical Floor (1st & 2nd Floor) | 58,316.30 | 52,148.24 |
| Typical (with refuge area (6,9,13 floor) | 85,710.12 | 77,046.21 |
| Typical (without refuge area) No. of Floor 10 | 2,58,494.79 | 2,29,614.70 |
| Total Proposed Built Up & FSI | 6,31,826.7 | 3,98,176.42 |

## 5.2 GREEN BELT

The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas. The green belt helps to capture the fugitive emission and to attenuate the noise generated apart from improving the aesthetics. Development of green belt and other forms of greenery shall also prevent soil erosion and washing away of topsoil besides helping in stabilizing the functional ecosystem and further to make the climate more conducive and to restore water balance. 6244 $m^2$ area will be developed as green belt area with Lawn, plants and flowers spread. Green belt will be developed at plant boundary, road side, around offices & buildings and Stretch of open land. The selection of tree species suitable for plantation at the industry are governed by guiding factors as stated below:

- The trees should be tolerant to air pollutants present in the area
- The trees should be able to grow and thrive on soil of the area, be evergreen, inhabitant, having minimum of leaf fall.
- The trees should be tall in peripheral curtain plantation and with large and spreading canopy in primary and secondary attenuation zone.
- The trees should posses extensive foliar area to provide maximum impinging surface for continued efficient adsorption and absorption of pollutants.
- The trees should be fast growing and indigenous and should maintain ecological, land and hydrological balance of the region.

- It is also recommended to plant few trees, which are sensitive to air pollution, as air pollution indicator.
- It is also recommended to carry out extensive plantation within premises.

Keeping in view the climatic conditions, status of soils and vegetation types in and around the project area the species shall be selected for proposed green belt development.

## 5.3 CONNECTIVITY

The proposed project site is well connected with the road, railway and air.

## 5.4 SEWERAGE SYSTEM

### 5.4.1 TYPE OF SEWAGE SYSTEM PROPOSED

Regular drainage line of $NP_3$ class R.C.C. pipes will be laid on the internal roads of the developed site. This will be connected with regular sewer line, disposing the sewage water through dream city drainage line.

### 5.4.2 NO OF SEPTIC TANKS, MANHOLE ETC. (WHICHEVER IS APPLICABLE)

As regular drainage line reaching up to drainage network of dream city, no need of any septic tank. Manholes at regular interval of 30m will be provided.

# CHAPTER-6 REHABILITATION AND RESETTLEMENT (R & R) PLAN

The commercial complex has constructed on the government barren land. There was no human population on the land, so there is no need of Rehabilitation & Resettlement plan.

# CHAPTER- 7 PROJECT SCHEDULE & COST ESTIMATES

## 7.1 TIME SCHEDULE FOR THE PROJECT

Implementation of Project within a pre-determined time frame is an important factor for the success of a project. Timely implementation saves on various costs like interest, administrative overheads and helps to realize the goals as per pre-determined objectives. Implementation of Project involves co-ordination of different activities at various levels of the firm and amongst different outside agencies. We are giving here under the details of the Project Implementation.

TABLE 7.1: PROJECT IMPLEMENTATION SCHEDULE

| SR. NO. | PARTICULARS | DURATION IN MONTH |
|---|---|---|
| 1. | Foundation and work up to plinth | May 2018 |
| 2. | Ground Floor Works | July 2019 |
| 3. | First to Fifteen Works | March 2021 |
| 4. | Terrace Cabin Works | June 2021 |
| 5. | Outer Plaster Works | December 2021 |
| 6. | Plumbing, Sanitation & Electrification | December 2021 |
| 7. | Colour Work | December 2021 |
| 8. | Drainage and water supply Services | January 2022 |
| 9. | Street Light and Road services | May 2022 |
| | TOTAL | 4 Years |

## 7.2 ESTIMATED PROJECT COST

Cost of the construction project was approx Rs. 2207.5 Crores.