BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, PRINCIPAL BENCH, NEW DELHI
ORIGINAL APPLICATION NO. 596 OF 2025

IN THE MATTER OF:

National Media Centre Co-operative House Building Society Ltd. & Ors. …Applicant(s)

Versus

State of Haryana & Ors. ….Respondent(s)

N.D.O.H.: 10.04.2026

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Chapter 5: ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)

Consideration of alternative technologies to be used in building material, energy conservation and transportation methods are addressed in this chapter.

5.1 CONSERVATION MEASURES

Energy Efficient Building Material for Wall-

Following low-energy/ recycled material-based finishes/ products will be used in the exteriors (paving etc.) and interiors (flooring, doors/ windows, frames, interior wood finishes, paneling, false ceiling etc.), which use low-energy materials and products and industrial waste/ recycled products and minimize the use of wood as a natural resource.

- Use of ready mix concrete containing fly ash or PPC which contains fly ash
- Use of PPC (which contains minimum 15% of fly ash) in mortar and plaster
- Use of PPC or fly ash-based paving blocks/ tiles and pre-cast elements
- Composite wood products such as hardboards, block-boards, plywood etc. made from recycled wood scrap & dusts.
- Fibrous gypsum plaster boards made from industrial wastes
- Finished concrete flooring, ceiling tiles, ceramic tiles etc. which are made from low embodied energy products & recycled materials or from resource efficient finishes

Energy Efficient Features:

- Maximum utilization of natural light
- Energy efficient LED Lighting for entire development
- Use of solar lights in common areas
- Appropriate design to reduce heat gain and loss
- Roof-top thermal insulation.
- Low U-value and low solar heat gain co-efficient value (SHGC) for glazing glass
- Vertical fenestration area shall be maximum 60% of gross wall area as per ECBC
- Energy efficient high COP water cooled chillers for HVAC system with CFC free refrigerant
- Energy efficient motors for AHUs, ventilation fans and cooling towers
- Secondary variable speed pumping system for chilled water distribution system
- Selection of high efficiency fans for air handling units and ventilation system
- Cooling tower selection for minimum drift and noise level; energy efficient motors

- Power factor shall be maintained 0.95 or higher to reduce electrical power distribution losses
- Use of timers and photoelectric sensors to switch ON/ OFF external landscape & facade lighting
- Transformers shall have minimum no load losses as compared to conventional transformers
- Pumps & equipment selected for energy efficient operation.

5.1.1 Energy Conservation Measures

HAREDA norms shall be followed.

Additional reduction in Energy consumption has been considered in individual heads for the following measures:

a. Timer to switch ON / OFF external and landscape lighting and switch off 50% lights automatically at mid night or at pre-set time.

b. Use of VFD on motors/ fans.

5.1.2 Water Conservation Measures

a) Low flow flushing systems working on 3 & 6 litres/ flush instead of conventional 12.5 litres.

b) Low flow taps with aerators to reduce the flow rate by 50-0%, e.g. from 15 l/min to 6 l/min. Since it is high rise building, pressure reducing valves will be installed to reduce the water pressure and water flow

c) Sensor based fixtures will be used for urinals and taps in wash basins

5.2 ENERGY EFFICIENCY OF BUILDING MATERIAL

Guideline shall be provided to plot owners so that building can be made energy efficient. U value of roof, wall & fenestration will be within the specification of ECBC norms.

Chapter 6: ENVIRONMENTAL MONITORING PLAN

6.1 DETAILS OF MONITORING TO JUDGE EFFECTIVENESS OF ENVIRONMENTAL CONTROL MEASURES

To check the efficiency of system with proposed modifications a regular monitoring programme has been drawn. The program has been outlined for construction and operation phase. The details of which are given below

During Construction/Installation Phase:

TABLE 6-1ENVIRONMENTAL MONITORING PLAN DURING CONSTRUCTION PHASE

During Construction Phase

Sr. No.	Type of Monitoring	Frequency of Monitoring	Parameter	Location
1	Ambient Air Quality	Six Monthly	Particulate Matter (PM 2.5) Partculate Matter (PM 10) Sulphur Dioxide (SO2) Nitrogen Oxides (NOx)	Four Locations in and around the project site
2.	Ambient Noise Level Monitoring	Six Monthly	Day and Night noise level	Two locations
3.	Water Quality	Six Monthly	All parameters mentioned in IS:10500	One drinking water sample
4.	Soil Quality Monitoring	Six Monthly	All parameters to check soil Fertility	Four Locations in and around the project site

During operation Phase:

Sr. No.	Type of Monitoring	Frequency of Monitoring	Parameter	Location
1	Ambient Air Quality	Annually	Particulate Matter (PM 2.5), Partculate Matter (PM 10), Sulphur Dioxide (SO2), Nitrogen Oxides (NOx)	Four Locations in and around the project site
2.	Stack Monitoring	Annually	Particulate Matter, Sulphur Dioxide (SO2), Nitrogen Oxides (NOx)	All DG sets installed for backup purposes
3.	Ambient Noise Level Monitoring	Annually	Day and Night noise level	Two locations
4.	DG Set Noise Level	Annually	Inside and Outside of DG Set Enclosure	One Locations

6.2 SUMBISSION OF SIX MONTHLY COMPLIANCES

As per the standard environment clearance conditions, six monthly compliances of the conditions mentioned in the EC letter has to be submitted to various concerned officials of MOEF, SPCB and Regional office of CPCB. These compliances have to be submitted in the months of June and December for the periods April to September and October to March respectively every year for construction phase till the construction is completed and operation phase for the life of the project.

6.3 ENVIRONMENT AUDIT

Annual Environment Audit has to be conducted to check the compliance of environmental conditions. The report shall be submitted to MoEF&CC R.O. and regional Pollution Control Board

Chapter 7: ADDITIONAL STUDIES

Risk is a potential that a chosen action or activity will lead to a loss of human or property. Risk assessment is a step for Risk Management. Risk assessment is determination of qualitative and quantitative value of risk related situation or hazard.

Hazard is a situation that poses a level of threat to life health or environment.

Risk assessment involves the following:

- Hazard Identification
- Vulnerability Analysis
- Risk Analysis
- Emergency Preparedness Plan

7.1 HAZARD IDENTIFICATION

The project is shopping/commercial building and there may be following types of hazards:

Natural hazard:

1. Earthquake
2. Flooding

Man-made hazard:

1. Fire & explosion
2. Electrical
3. Mechanical
4. Radiation
5. Thermal
6. Chemical

7.2 VULNERABILITY ANALYSIS

This is a shopping/commercial building hence staff & visitors are vulnerable to risks.

The vulnerable analysis is done on all the hazards as below:

	During Construction	**During Operation**
HAZARD IDENTIFICATION		
Natural hazard		
Earthquake	For all blocks which will be under construction	For all blocks
Flood	For immediate areas of construction	For the complete shopping/commercial building

Man-made hazard		
Fire & explosion	For all areas working area	For complete shopping/commercial building
Electrical	Same	Same
Mechanical	Cranes & Machineries	Elevator DG set room
Radiation	Within the shopping/commercial building	Within the shopping/commercial building
Thermal	Within the shopping/commercial building	Within the shopping/commercial building
Chemical	Storage area	Storage of Chemical

7.3 RISK ANALYSIS

The risk is likelihood of harmful effect big or small due to hazard, together with severity of harm suffered. Risk also depends on number of people exposed to hazard.

Risk analysis provides severity of harm from particular type of hazard.

A safety plan mainly constituting the following shall be implemented during construction & Operation:

During construction Phase	**During Operation Phase**
• Safety mats will be provided at appropriate level and various shafts/ openings will be covered to prevent falls, slips, trips etc. • Necessary safety belts, helmets and eye-masks as required will be enforced at site • Adequate guardrails shall be provided to the staircases and common areas. • Adequate guardrails/ fences shall be provided around the water storage spaces to prevent drowning accidents. • Adequate protection/ fence will be provided around the excavated areas • The machinery and the equipment will be regularly tested and maintained with the specific emphasis against accidents failures	• The project is located at Seismic Zone IV; structural designing will be done as per best structural engineering practices complying with all the applicable codes / standards. • Proper designing of drainage system for domestic as well as storm water shall be provided. • Rain water harvesting pits will have provision of storage for 15 minutes peak rainfall. • Fire Protection system shall be designed as per requirements of National Building Code – 2016

• The deployed Safety officers will ensure that the personnel/ labour are kept at a safe distance from working machinery to avoid accidents/ injuries due to toxic gases/ chemical/ noise. • Moving parts of various parts of machineries/ equipment shall be properly guarded • Required fire extinguishers will be maintained at the construction site. • Arrangements for clean drinking water will be made. • Rest rooms and first aid facilities will be made available for the workers • Fire Protection system shall be designed as per requirements of National Building Code – 2016	• Proper Fire evacuation system shall be provided. • Safety parameters as indicated under Indian Electricity Rules 1956 and ECBC shall be complied. • Periodic replacement of critical components of elevator/ machines.

Earthquake:

The project is located at seismic zone IV.

Flooding:

The project site is located at seismic zone IV where no chances of floods and landslides. However, flooding can occur due to excess rain.

Fire & Explosion:

Since it is a shopping/commercial building, chances of fire are minimal. It can occur due to electrical spark or gas leakage from kitchen.

Fire caused in shopping/commercial building is mainly due to carelessness, short circuits, and malfunctioning of gas regulator, tube, and such related products.

Electrical:
The electrical current can pass to the floor & metals due to inadequate insulation or accidently.

Mechanical:
The mechanical fault can cause the risk & hazard which include the elevators.

Radiation:
Due to use of wireless equipment there may be electromagnetic radiation.

Thermal:
Thermal heat can be generated from the D.G sets and the vehicles in the shopping/commercial building.

Chemical:
Chemicals used in the shopping/commercial building are mainly cleaning agents, & medicines.

7.4 ONSITE EMERGENCY PLAN

An onsite emergency is caused by an accident or hazard that takes place within the shopping/commercial building and the effects are confined to the retails & office building only.

The onsite emergency plan consists of following key elements:

- Health Hazards for construction activities
- Planning as per hazard analysis
- Preventive measures
- Emergency response procedure
- Recovery procedure

Health Hazards for construction activities

- Safety nets will be provided at appropriate level and various shafts/ openings will be covered to prevent falls, slips, trips etc.
- Necessary safety belts, helmets and eye-masks as required will be enforced at site
- Adequate guardrails shall be provided to the staircases and common areas.
- Adequate guardrails/ fences shall be provided around the water storage spaces to prevent drowning accidents.
- Adequate protection/ fence will be provided around the excavated areas.
- The machinery and the equipment's will be regularly tested and maintained with the specific emphasis against accidents failures
- The deployed Safety officers will ensure that the personnel/ labour are kept at a safe distance from working machinery to avoid accidents/ injuries due to toxic gases/ chemical/ noise.
- Moving parts of various parts of machineries/ equipment shall be properly guarded
- Required fire extinguishers will be maintained at the construction site.
- Arrangements for clean drinking water will be made.
- Rest rooms and first aid facilities will be made available for the workers

Planning

1. Mapping of hazard vulnerable area shall be done in consultation with residents.
2. There shall be Disaster Management Cell in place
3. The disaster management cell have following members to share the responsibility
    I. Site Controller (Administrator)
    II. Incident Controller (Asstt. Administrator)
    III. Personal Manager
    IV. Communication Officer
    V. Fire Officer
    VI. Security Officer
    VII. Engineering In-charge

VIII. Fire pump attendant
IX. First Aid Team

Preventive Measures
Earthquake:

The project will be situated in Seismic zone-IV area. Special attention has been given to the structural design of foundation, elements of masonry, timber, plain concrete, reinforced concrete, pre-stressed concrete, and structural steel.

All applicable guidelines will also be followed in this regard to ensure safety of the building and its residents. Structural designing shall be done as per National Building Code 2016.

Flooding:

- Proper designing of drainage system for domestic as well as storm water.
- Rain water harvesting pits will have provision of storage for 15 min rainfall.

Fire: Fire safety measures shall be taken as per NBC Code.

In case of fire, fire extinguisher will be used. Fire extinguishers are put at the entrance of storage rooms. The Fire Extinguisher (FOG) System shall be provided as per fire safety plan. The phone number of nearest fire service stations shall be displayed at various points and also near the fire extinguishers. The fire-fighting system shall be designed as per NBC - 2016.

The commercial building is proposed to be provided with fire protection arrangements such as Manual call points, Underground water storage tank, Overhead storage tank, Portable appliances, Exit signs, D. G. Set, P. A. System, staircase etc. from fire safety point view.

Proposed Fire Safety Measures

Fire Protection system will be designed as per requirements of National Building Code – 2016

Fire hydrant risers connected to the hydrant system with Hydrant landing valves with fire hose cabinet consisting of swinging hose reel, fire man's axe, 63mm dia canvas hose and nozzles.

Externally fire hydrants will be located.

Following Fire-fighting pumps will be provided,

- Main Fire pumps for Hydrant System will be located.

- Main Fire pumps for sprinkler System will be located.

- Stand by pumps for Hydrant System will be located.
- Stand by pumps for Sprinkler System will be located.
- Jockey pumps will be provided.
- Booster pumps will be provided.

Overhead & underground water tanks will be provided for firefighting system.

Automatic Fire Hydrant system as per ECBC 2016 shall be provided.

Automatic Sprinkler system as per ECBC 2016 shall be provided.

Automatic Fire Detection and Alarm System with Voice Evacuation system & PA system as per ECBC 2016 shall be provided.

Kitchen Hoods Fire Suppression system shall be provided.

Portable Fire Extinguishers as per ECBC 2016 shall be provided.

Gas Based Fire Protection System for Electrical Panels as per ECBC 2016 shall be provided.

Gas Based Fire Protection System for IT Rooms as per ECBC 2016 shall be provided.

Refuge areas shall be provided as per NBC 2016 norms

Following Fire-fighting codes and standards shall be followed in the shopping/commercial building:

LIST OF APPLICABLE STANDARDS FOR FIRE ALARM SYSTEM

(1) IS: 2189 - 1962 Code of Practice for Automatic Fire Alarm System.
(2) IS: 2195 - 1962 Specifications for Heat sensitive Fire Detectors.
(3) IS: 732 - 1973 Code of practice for Electrical Wiring installation
(4) UL 168 Under writers laboratory specifications for smoke detectors.

Electrical:

i) Planning Stage:

Safety parameters as indicated under Indian Electricity Rules 1956 and ECBC shall be complied. The following safety measurement are considered

Earthing system

- The earthing system shall be based on the Indian TNS system. The earthing conductors proposed to be used are Copper plate for neutral and body earth.
- The design of the system shall follow the Indian Code of Practice IS 3043: 1987.
- ELCB in Distribution Board
- One Earth Leakage Breaker sensitivity 30 mA shall be used per phase in all Distribution Boards

In addition to that, following measures shall be adopted

- There will be colour coding and labelling of high voltage electrical wires
- Sand bags/ wire bucket shall be placed near the electrical control/panel
- Installation of electrical equipments shall be properly done like insulation, guarding and grounding.
- Work practices and handling of the electrical equipments shall be properly managed.
- Employees and workers shall be trained for awareness of safe work practices and systems.
- Properly maintained equipments and tools will be used.
- Service of electrical equipments shall be done under the supervision of trained personnel.
- Temporary connections made for experimental reasons shall be safe and properly insulated.
- Live electrical terminals shall be shielded.

ii) Operation Stage:

- Have only licensed electricians install, repair and dismantle jobsite wiring.
- Check each extension cord before use.
- Do a thorough check for electrical wiring before cutting through any wall, floor or ceiling.
- Inspect power equipment's on a regular basis.
- Check insulated tools for damage before each use.
- Never modify electrical plugs.

- Keep extension cords in a safe place where they won't be stepped on or driven over. Ensure that all electrical components stay dry. Use the right extension cord for the job.

(i) (A) Electric Hazards & Safety Measures

Safety parameters as indicated under Indian Electricity Rules 1956 and ECBC shall be complied.

The Contractors shall, at their own expense, arrange for safety provisions as per safety codes of Indian Standards Institution, Indian Electricity Act 1956 and such other Rules, Regulations and Laws as may be applicable and as indicated below, in respect of all labour, directly or indirectly employed in the work for performance of the Contractors' part of this agreement. The following safety measurements are considered:

- No inflammable materials shall be stored in places other than the rooms specially constructed for these purposes in accordance with the provisions of Indian Explosives Act.
- Protective and safety equipment such as rubber gauntlets or gloves, earthing rods, line men's belt, portable artificial respiration apparatus etc. should be provided in easily identifiable locations.
- Necessary number of caution board such as "Man on Line, Don't switch on" should be readily available in easily identifiable locations.
- Standard first aid boxes containing materials as prescribed by the St. John Ambulance Brigade or Indian Red Cross should be provided in easily identifiable locations and should be readily available. Periodical examination of the first aid facilities and protective and safety equipment provided shall be undertaken.
- Charts (one in English and one in regional language) displaying methods of living artificial respiration to a recipient of electrical shock shall be prominently displayed at appropriate places.
- A chart containing the names, addresses and telephone numbers of nearest authorized medical practitioners, hospitals, Fire Brigade and also of the officers in charge shall be displayed prominently along with the First Aid Box.
- Steps to train supervisory and authorized persons of the Engineering staff in the First Aid Practices, including various methods of artificial respiration with the help of local authorities such as Fire Brigade, St. John's Ambulance Brigade, Indian Red Cross or other recognized institutions equipped to impart such training shall be taken, as prompt rendering of artificial respiration can save life at time of electric shock.
- No work shall be undertaken on live installations, or on installations which could be energized unless one another person is present to immediately isolate the electric supply in case of any accident and to render first aid, if necessary.

- No work on live L.T. busbar or pedestal switchboards should be handled by a person below the rank of a Wireman and such a work should preferably be done in the presence of the Engineer-in -charge of the work. When working on or near live installations, suitably insulated tools should be used, and special care should be taken to see that those tools accidentally do not drop on live terminals causing shock or dead short.

(B) ELCB in Distribution Board

- One Earth Leakage Breaker sensitivity 30 mA shall be used per phase in all Distribution Boards
- In addition to that, following measures shall be adopted
- There will be color coding and labelling of high voltage electrical wires
- Sand bags/ wire bucket shall be placed near the electrical control/panel
- Installation of electrical equipments shall be properly done like insulation, guarding and grounding.
- Work practices and handling of the electrical equipments shall be properly managed.
- Employees and workers shall be trained for awareness of safe work practices and systems.
- Properly maintained equipments and tools will be used.
- Service of electrical equipments shall be done under the supervision of trained personnel.
- Temporary connections made for experimental reasons shall be safe and properly insulated.
- Live electrical terminals shall be shielded.

(c) Earthing system

The earthing system shall be based on the Indian TNS system. The earthing conductors proposed to be used are Copper plate for neutral and body earth.
The design of the system shall follow the Indian Code of Practice IS 3043: 1987.

Chemicals:

This is a shopping/commercial building, No chemical container tanker shall be allowed inside the colony.

The chemical hazard includes the following:

- Causing fire, explosion.
- Release of harmful /toxic gas or particles.
- Splashing of hot corrosive or toxic liquid.

To prevent chemical hazard following measures shall be taken:

1. Use of safer chemicals as far as possible.
2. Keep material safety Data Sheet (MSOS) of all chemical.
3. Storage of chemical in appropriate container (which is safer for chemical)
4. Storage of chemical at defined place.
5. Proper environment like ventilation, temperature.

6. Use of chemicals by qualified and trained personals.
7. Use of personal protective equipment (PPE) during handing of chemicals.
8. Use of emergency procedures in case of leakage like
    a) Fire-fighting – for fire
    b) Spillage treatment
    c) First aid
    d) Evacuation of area

For shopping/commercial building projects only chemicals used are:

1. Cleaning agent (acid /caustic)
2. Insecticides
3. Medicines

Cleaning agents can be treated by water.

Insecticides shall be contained with specified space during sand & cotton and waste shall be sent to TSDF.

The spray of insecticide shall be done by using gas mask.

Medicines shall be disposed off with proper care.

Terrorism: All the preventive measures shall be taken as given in security plan.

Mechanical:

Mechanical hazards are created by powered operation of equipment or tools.

Mechanical hazards can occur at three locations:

1. Elevators
2. DG set room, Pump & motors room.
3. Vehicular Movement

Following preventive measures shall be taken.

1. Elevators shall be properly maintained with record book of maintenance.
2. Periodic replacement of critical components of elevator/ machine.
3. Proper training to operators of machines.
4. The protective guard will be installed at fan & motors.
5. There will be safe distance demarcation on heavy machines like cranes (during construction)
6. Sign of danger at the hazard places.

Radiation:

The radiation hazard can be of two types:

Ionizing Radiation (nuclear radiation)

Nonionizing radiation (non-nuclear radiation)

In the shopping/commercial building, radiation hazard is non ionizing.

The radiation can be prevented in following manner:

1. Shielding of radiation.

2. Safe distance from radiation source.

3. Sign of radiation hazard at vulnerable areas.

Thermal:

Thermal hazards are objects or substances that transfer energy as heat.

Typical building can have following points of thermal hazard.

- Open flame
- Boiling liquid
- Hot machines/equipments

The thermal hazard can cause burn of skin; following preventive measures can be taken:

1. The open flame area like kitchen and mess shall be restricted.
2. D.G set room will have restricted entry.
3. Operators in the thermal hazard area shall be provided with protective gears like gloves, goggles etc.
4. For emergency first acid room will be maintained.

Emergency Response Procedure

Even after all the preventive measures for any emergency following infrastructure shall be provided.

1. Administrative office shall also make an Emergency Control Room.
2. Assembly area shall be demarked for each type of flats
3. Communication system shall be installed in the shopping/commercial building which includes intercom and public addressing system.
4. Fire alarm shall be installed at vulnerable place.
5. The evacuation plan of each building shall be displayed at each floor of respective building.
6. The safe zones (at the time of emergency) on map shall be displayed at different locations.
7. First Aid facility shall be made available at Control room.

In case of emergency following action shall be taken.

1. The emergency shall be declared in case of following:
   i) Fire alarm buzzing (Fire hazard)
   ii) Vibration/Earthquake feeling (Earthquake)
   iii) Water logging in the shopping/commercial building above 30 cm (Flood)
   iv) Any unusual smell of gas or suffocating feeling (Chemical leakage)
   v) Security alarm from main gate. (Security risk/Terrorism)
2. On declaration of emergency, communication shall be made to residents for any type emergency
3. All the resident of the affected area shall be moved to safe zone

4. The control measures shall be done as per the emergency action plan for each type of hazard.
5. All the members of disaster management cell shall take charge of their respective duties.
6. Outside help like fire tender, police ambulance etc. shall be called by site controller or Incident controller.

Recovery Procedure

The recovery procedure will depend on the type of emergency. Recovery procedure shall be followed by engineering section to restore the essential services like electricity, water, telephone, food items.

7.5 OFFSITE EMERGENCY PLAN

If an accident take place in the shopping/commercial building and its effect are felt outside the shopping/commercial building, the situation thus created is called an offsite emergency.

In this case off site emergency is not applicable.

7.6 SECURITY PLAN

An ISO 27001 and 27002, which are the international best practice information security management standards, defining and guiding Information Security Management System (ISMS) development shall be adopted. These will provide the necessary benchmarking for individual users to know the type of cover and the responsibilities that are defined and shall be provided by the Disaster management cell of a society for its residents. Most importantly, training, to staff needs to be regularly imparted in dealing with such situations.

1. **Manual Checks**: At all gates the visitors and guest shall be manually checked and asked for ID's.
2. **CCTV:** At all important location with a remote viewing facility and record back up. With highest resolution and picture quality. DVR being the back bone, its recording and replaying capabilities must be considered.
3. **Checks at Entrances:** All car entering will be checked thoroughly inclusive of Bonnets, Luggage Hold with hand held, metal detectors, mirrors and other checking stuffs.
4. **Central Control Room**: This will control the security system from inside.
5. **Communication Systems:** Proper communication system to security staff shall help them to coordinate better during emergencies.

Training and Security Drills (including Surveillance System)

Disaster planning is the responsibility of all sections of the community. The police, fire brigade, civil defense, Home Guards, press, clergy, industrial groups, and community groups must participate in the pre-disaster planning. The community as a whole has the responsibility to teach first aid to groups in the community

that could be utilized in disaster situations. The disaster may involve the normal communication network itself. Therefore, two-way radio systems and messenger systems must be included as backups in the event of a communication-system failure.

Proper training, security drill and evacuation drill shall be conducted in a defined time period, so as to train the management people, guards & the security personnel's, in the shopping/commercial building to take control of all odds what so ever come in the way. These trainings shall be conducted for use of weapons and Arms by some trained agencies . The training shall be done periodically.

Making of Standard Operating Procedures

A standard operating procedure manual shall be prepared, followed and maintained for all the eventualities due to attack by armed intruders.

Emergency Response Team

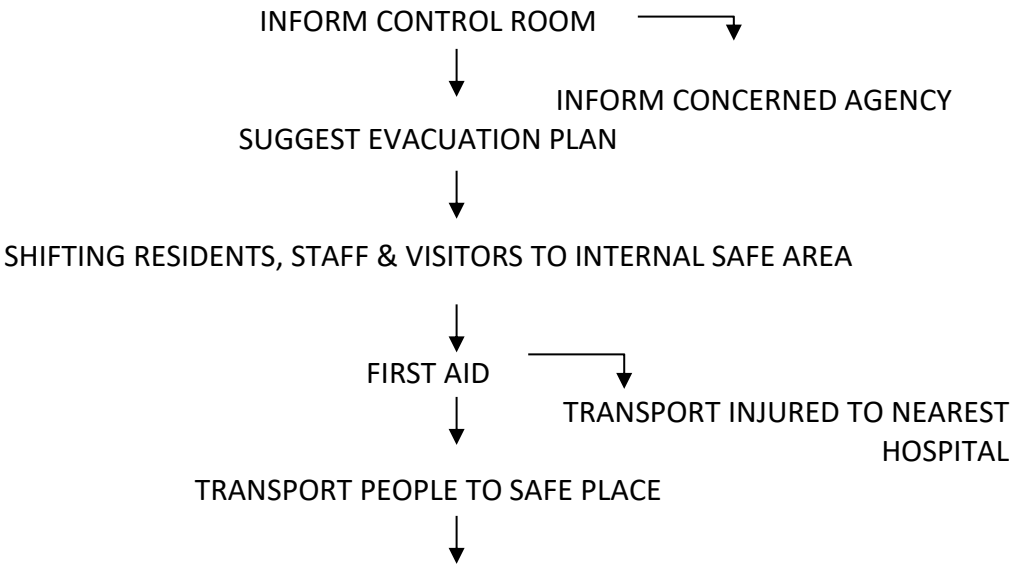
The disaster management cell shall act as an emergency response team in the shopping/commercial building which will comprise of persons from Internal Control room personnel, security staff, trainers, Police Control, Army official, Nearest Hospital Management, Fire officer to take control of any eventuality if comes in the shopping/commercial building

7.7 EVACUATION PLAN

Evacuation plan includes the evacuation due to

- fire hazard
- Armed Intrusion
- Flood
- Earthquake

During any of the above-mentioned hazards, the evacuation will be as follows:



Communication

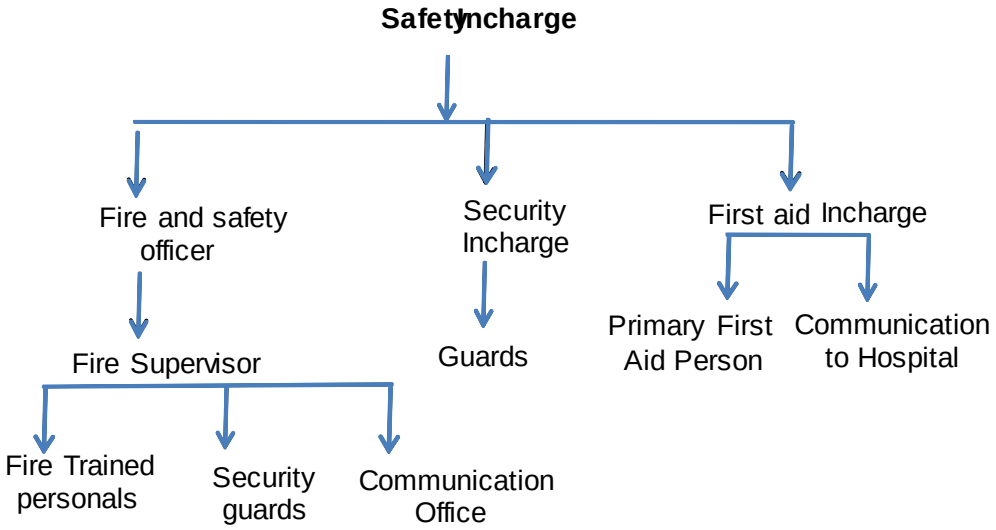
The communication system is useful for rapid notification to appropriate units and expeditious implementation of relief procedures. The fire brigade and metro police units are linked through a wireless communication network. Additional channels of communication are now available through personal cell phones. Use of personal cell phones will not be restricted during disasters.

On-site crowd control and information management

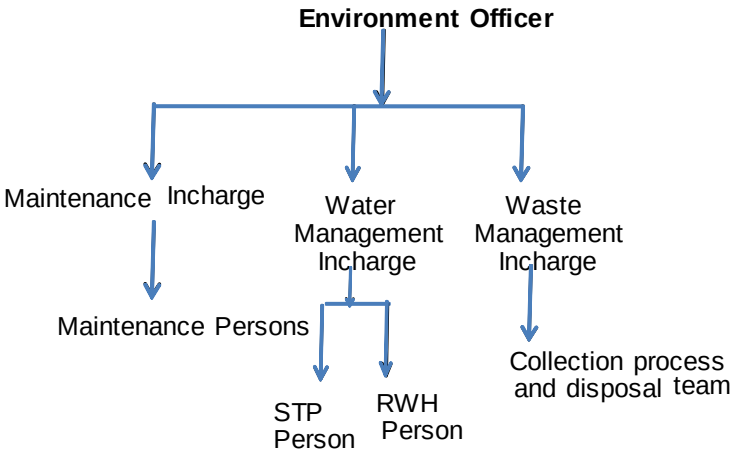
Disasters usually attract crowds consisting of curious bystanders, onlookers, overenthusiastic volunteers, and self-styled advisers. In general, this hampers rapid triage and transport. The primary responsibility for crowd management is with the police. When a call is received at any of the control rooms, the information is passed on to the local police. The police contingent which arrives on the scene has the primary responsibility for crowd control.

7.8 Disaster Management Cell and Environment Management Cell

Disaster Management Plan Team involved



Environment Management Plan Team involved



Chapter 8: PROJECT BENEFITS

- The proposed project will have shopping/commercial building. It will increase Infrastructure of the area & will provide better shopping environment and will increase the livelihood of the people.
- It will provide healthy, green & safe premises for people. People will be away from traffic, pollution and congestion. People have more open and green spaces, bringing them closer to nature.
- People will have immediate access to shopping, office and entertainment facilities in a single, spacious and secured area.
- The benefits relate to the direct employment associated during the construction of the infrastructure in the shopping/commercial building and for staff in the office & retail. Additional employment opportunities will lead to a rise in the income and improve their standard of living.
- The proposed facility would also generate jobs for the labours during construction phase as well as during operation phase.
- Corporate Environment Responsibility will also be considered for the social benefits of the society.

Chapter 9: ENVIRONMENT MANAGEMENT PLAN

The Environment Management Plan (EMP) is a site-specific plan developed to ensure that the project is implemented in an environmentally sustainable manner where all stakeholders including the project proponents, contractors and subcontractors, including consultants, understand the potential environmental risks arising from the proposed project and take appropriate actions to properly manage that risk. Adequate environment management measures need to be incorporated during the entire planning, construction and operating stages of the project to minimize any adverse environmental impact and assure sustainable development of the area.

The EMP presented below will be followed and regular monitoring of relevant parameters as stated in post – project monitoring schedule shall be carried out. The EMP shall be proactive in nature and shall be upgraded if new facilities or modification of existing facilities, with environmental concerns, come up at a later stage.
EMP includes four elements:

- **Commitment and Policy:** Proposed project will strive to provide and implement the Environment Management Plan that incorporates all issues related to air, land and water.
- **Planning:** This includes identification of environment impacts, legal requirements and setting environmental objectives.
- **Implementation:** This comprises of resources available to the developers, accountability of contractors, training of operational staff associated with environmental control facilities and documentation of measures to be taken.
- **Measurement and Evaluation:** This includes monitoring, corrective actions, and record keeping.

The EMP's that will be into place consist of those during construction and operating stages of the project and includes the following elements:

- Air Pollution Control and Management
- Water Pollution & Control (Sewage Treatment Plant)
- Storm Water Management
- Noise Control and Management
- Hazardous and Solid Waste Management
- Plantation, Landscaping and Land Management
- Environmental Management Plan Cost
- Social Commitment

9.1 AIR ENVIRONMENT/ DUST MITIGATION MEASURES

9.1.1 ENVIRONMENT MANAGEMENT DURING CONSTRUCTION

Air quality around the project will be adversely impacted during the construction stage. Various construction activities especially related to loose material likely to

cause generation of dust that impacts the air quality of the surrounding area of the project site. To minimize such impact, following measures has been taken:

- Metallic Roads leading to and in construction sites will be paved and blacktopped.
- No loose soil, sand, Construction & Demolition Waste or any other construction material that causes dust will be left uncovered.
- Wind-breaker of 10 meters height will be provided.
- Water Sprinkling will be done regularly.
- Grinding and cutting of building materials in open area will be prohibited.
- Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste will be prohibited.
- No excavation of soil shall be carried out without adequate dust mitigation measures in place.
- Only covered vehicles carrying construction material and waste will be permitted inside the complex.
- Construction and Demolition Waste processing and disposal site will be identified and required dust mitigation measures be notified at the site
- Masks will be provided to the construction labours.

9.1.2 AIR MANAGEMENT DURING OPERATION

The source of air pollution will be operation of DG sets within the Shopping/commercial building. DG sets of capacity 20 x 2000 KVA will be installed for emergency use during power failure. Proper stack height of 6m above roof level for D.G Set shall be maintained which will help in reducing the air pollution. D.G sets shall be kept in basement.

Maintenance of proper stack height of D.G Set shall help in reducing the air pollution. The stack height of DG sets has been calculated as per the details given below:

TECHNICAL SPECIFICATION

1. Channelization of Exhaust:

The exhaust from the D.G. Sets has been channelized to chimney.

2. Chimney:

S. No.	DG sets proposed	Nos.	Stack Height (above roof level)	Stack Height (above ground level)	Location of DG sets
1.	2000 KVA	20	6.0 meters above roof level	6.0 m + 43.1 m = 49.1 m	Basement

Emission Standard;

As per the specifications from D.G. Set manufacturer following emissions have been maintained.

D. G. Set. Capacity	**No.**	**PM mg/Nm³**	**No_x** mg/Nm³	**HC mg/Nm³**	**CO mg/Nm³**
2000 KVA	20	75	887.5	100	150

9.2 WATER MANAGEMENT

9.2.1 WATER MANAGEMENT DURING CONSTRUCTION

During the construction of the proposed project, the services required like water supply and sewage facilities shall be arranged on a temporary basis and the same will be maintained without any adverse impact on the environment. Approx. 40 KLD sewage and waste water generated will be generated. Mobile toilets shall be provided. The water required during construction phase shall be taken from STP treated water supplied through vendor authorised by MCG.

During the construction period, runoff from the construction site shall not be allowed to stand (water logging) or enter into the roadside or nearby drain. Tanks will be made to store the rain water to reuse for construction purposes / horticulture. The waste water from the site will be collected & used for sprinkling after treatment.

The vehicles carrying construction material and construction debris will be cleaned before it is permitted to ply on the road. Wheel washing arrangement of construction vehicle shall be provided at site.

9.2.2 WATER MANAGEMENT DURING OPERATION

Total quantity of water requirement for proposed project will be 3283.8 KLD out of which fresh water requirement will be 1510.3 KLD which will be met by HUDA. Water shall be used for domestic purpose, flushing, gardening, filter backwash and cooling tower. The total water requirement breakup for the proposed project is given below.

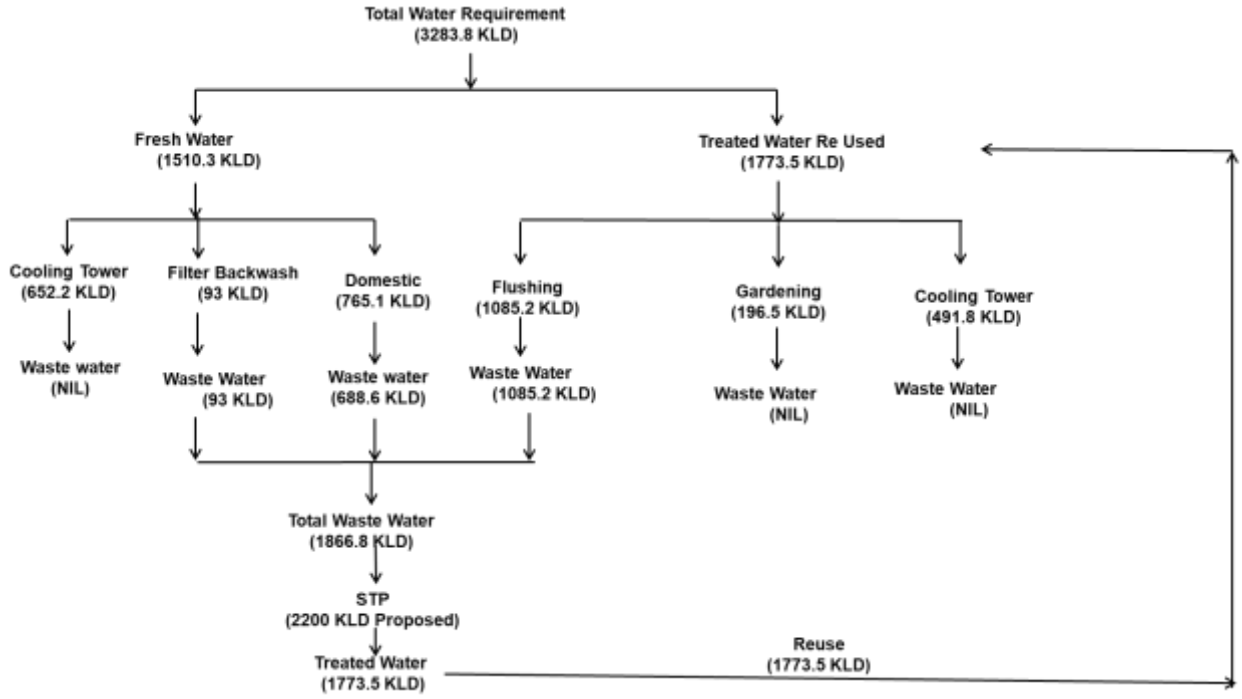
Water Requirement & Management:

SUMMER SEASON

WATER CALCULATION						
	Population	Factor in LPCD	Water requirement in KLD	Domestic in KLD	Flushing in KLD	Waste water in KLD
Domestic						
Staff (Retail)	8658	45	389.7	216.5	173.2	
Staff (Office)	6174	45	277.9	154.4	123.5	
Visitors (Retail)	77917	15	1168.8	389.6	779.2	
Visitors (Office)	926	15	13.9	4.6	9.3	
Total	93675		1850.3 KLD	765.1 KLD	1085.2 KLD	
Waste water Generation				688.6 KLD	1085.2 KLD	1773.5 KLD
Filter Backwash			93.0			93 KLD
HVAC & Cooling			1144.0			NIL
Gardening	32754.438	@6 lpm	196.5			NIL
Total			3283.8 KLD			1866.8 KLD

Table 9-1 Water Management

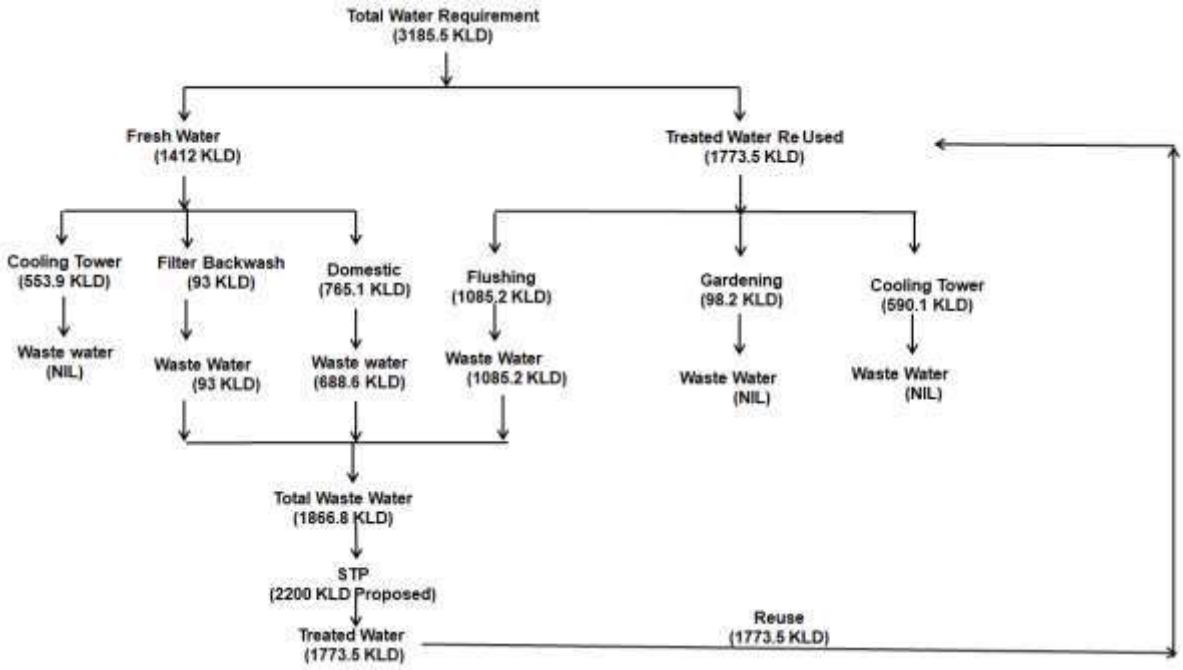
WATER BALANCE



WINTER SEASON

WATER CALCULATION						
	POPULATION	FACTOR IN LPCD	WATER REQUIREMENT IN KLD	DOMESTIC IN KLD	FLUSHING IN KLD	WASTE WATER IN KLD
DOMESTIC						
STAFF (RETAIL)	8658	45	389.7	216.5	173.2	
STAFF (OFFICE)	6174	45	277.9	154.4	123.5	
VISITORS (RETAIL)	77917	15	1168.8	389.6	779.2	
VISITORS (OFFICE)	926	15	13.9	4.6	9.3	
TOTAL	93675		1850.3 KLD	765.1 KLD	1085.2 KLD	
WASTE WATER GENERATION				688.6 KLD	1085.2 KLD	1773.5 KLD
FILTER BACKWASH			93.0			93 KLD
HVAC & COOLING			1144.0			NIL
GARDENING	32754.438	@3 LPM	98.2			NIL
TOTAL			3184.8 KLD			1866.8 KLD

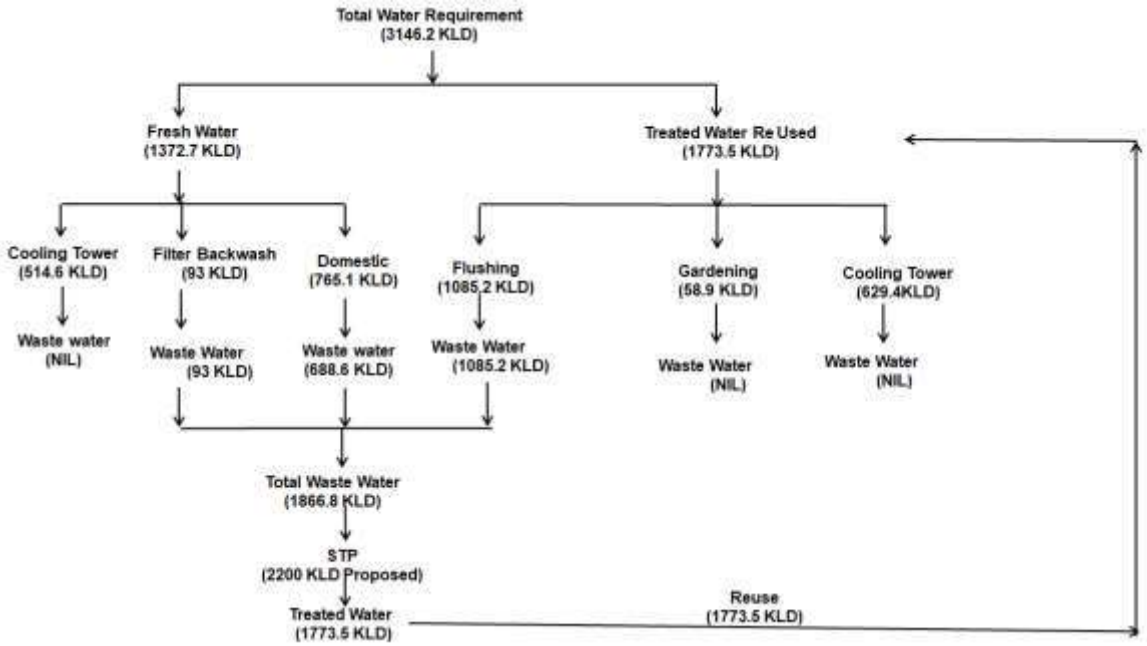
WATER BALANCE FOR WINTER SEAON:



MONSOON SEASON

WATER CALCULATION						
	POPULATION	FACTOR IN LPCD	WATER REQUIREMENT IN KLD	DOMESTIC IN KLD	FLUSHING IN KLD	WASTE WATER IN KLD
DOMESTIC						
STAFF (RETAIL)	8658	45	389.7	216.5	173.2	
STAFF (OFFICE)	6174	45	277.9	154.4	123.5	
VISITORS (RETAIL)	77917	15	1168.8	389.6	779.2	
VISITORS (OFFICE)	926	15	13.9	4.6	9.3	
TOTAL	93675		1850.3 KLD	765.1 KLD	1085.2 KLD	
WASTE WATER GENERATION				688.6 KLD	1085.2 KLD	1773.5 KLD
FILTER BACKWASH			93.0			93 KLD
HVAC & COOLING			1144.0			NIL
GARDENING	32754.438	@1.8 LPM	58.9			NIL
TOTAL			3146.2 KLD			1866.8 KLD

WATER BALANCE FOR MONSOON SEASON:



SCHEME OF SEWAGE TREATMENT PLANT:

Total quantity of wastewater generation from the proposed project will be 1866.8 KLD. The treated water of 1773.5 KLD shall be generated which shall be utilized for flushing, gardening & cooling tower purposes. The waste water generated will be treated in in-house Sewage Treatment Plant capacity 2200 KLD. The STPs shall be based on Membrane Bioreactor (MBR) process.

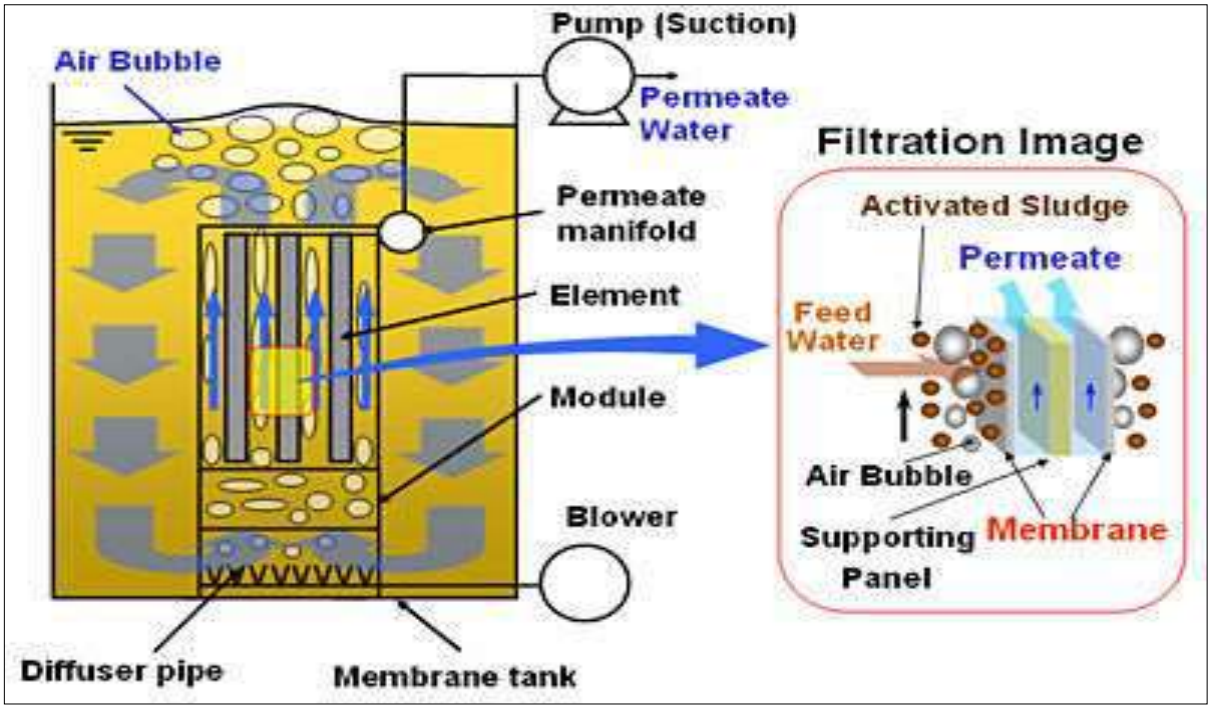
TREATMENT PROCESS:

Membrane Bioreactor is a waste water treatment system integrating Biological Degradation of waste in water using products with Membrane Filtration. They have proven effective in removing organic and inorganic contaminants as well as biological entities from wastewater. Membrane bioreactor is the combination of a Membrane process like Microfiltration or Ultra filtration with a suspended growth bioreactor, and is widely used for Municipal and Industrial wastewater treatment.

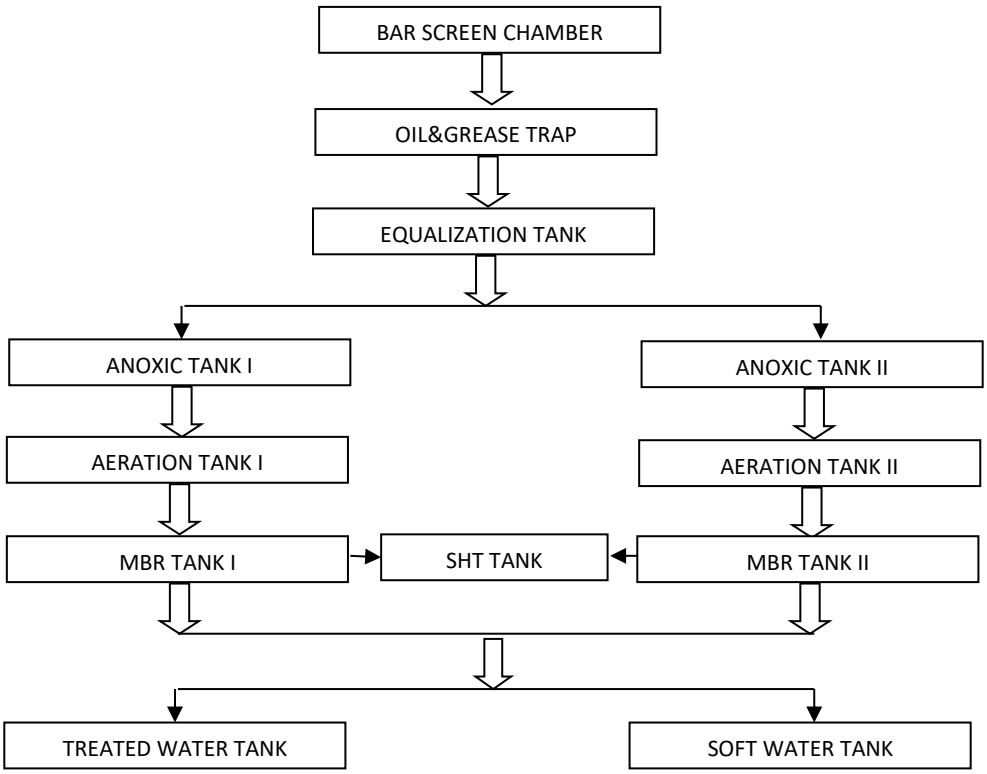
The MBR systems are available as Integrated Submerged Type & External Module Type and the advantages include Good Control of Biological Activity, High Quality Effluent Free of Bacteria and Pathogens, Smaller Plant Size, and Higher Organic Loading Rates.

Principle Behind Membrane Filtration:

During operation of MBR based waste water treatment systems, solid-liquid separation is achieved by filtration membranes. A membrane is used to separate components of fluids on the basis of their relative size. The capability of a membrane to allow transport of only specific compounds is called semi-permeability. This is a physical process, where separated components remain chemically unchanged. Components that pass through membrane pores are called permeate, while rejected ones form concentrate or retentate.



PROCESS FLOW



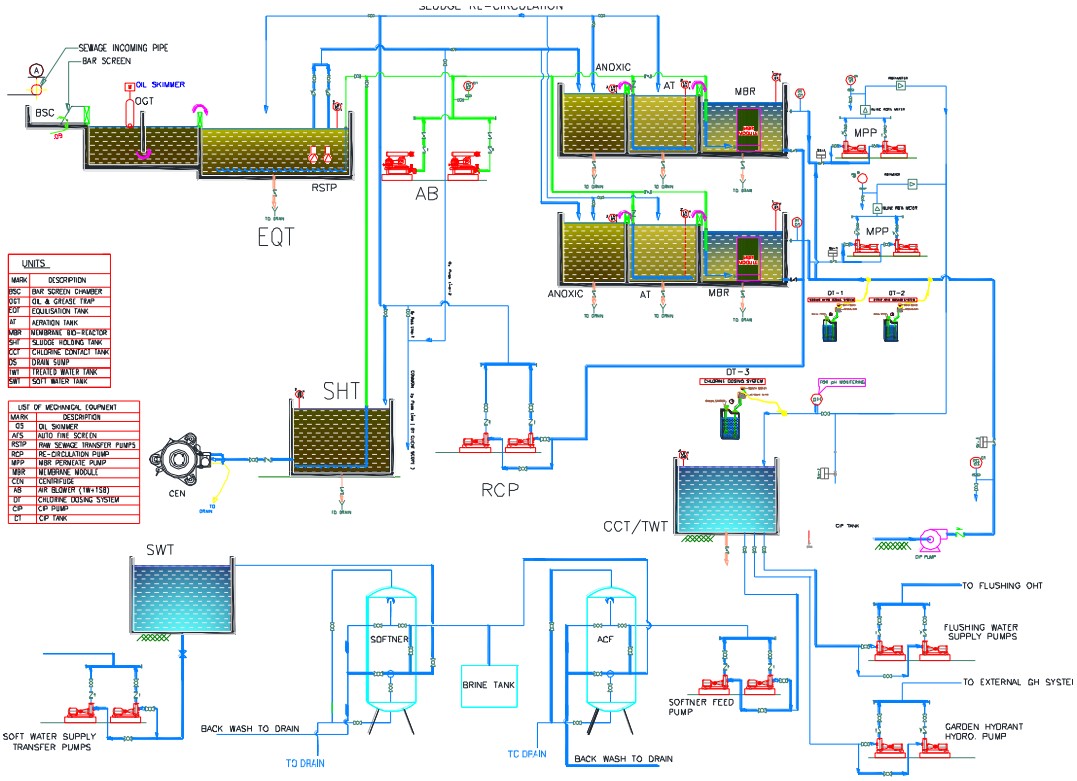
Raw Sewage Characteristics:

pH	-	6.0 – 9.0
BOD	mg / l	250 - 300
COD	mg / l	400 - 600
Suspended solids	mg / l	300 - 350

Treated Sewage Characteristics

pH	-	7.0-8.0
BOD	mg / l	< 5
COD	mg / l	< 50
Suspended solids	mg / l	< 10

Hydraulic flow Diagram of STP is enclosed as Fig below:



9.3 RAIN WATER HARVESTING

The main source of ground water recharging in the study area is rainwater, which infiltrates into the ground through various lithological units present in the study area. 28 number of rainwater harvesting pits shall be installed. The runoff from the rooftop and storm water shall go to the recharge pits.

- **Scheme for Ground Water Recharging**

The rainwater will be diverted from the rooftop using rain water pipes to the surface / underground drainage network. The entire campus will be sub divided for recharging structures. The rainwater will be diverted into the de-silting tank to remove inorganic impurities and the outflow of the de-silting tank is taken into the recharge well.

- **De-silting Tank**

The de-silting tanks will be used to remove silt and other floating impurities from rainwater. De-silting tank is like an ordinary container having provision for the inflow, outflow and overflow. Apart from removing silt it holds the excess amount of water till it is soaked up by the recharge structure. The bottom of tank will have unpaved surface (layers of coarse sand) to allow standing water to percolate into the soil. The rainwater collected in these de-silting chambers shall be utilized for horticulture.

- **Recharge well**

The Recharge Well consist the pit size of 3.5 m and effective depth of 4 m with 150 mm UPVC perforated pipe will be lowered in the middle of the boreholes and the pit will be filled with gravel and pebbles consisting of boulders, gravel and coarse sand. The mouth of the PVC pipe shall be protected to avoid silt getting into it. The depth of the bore will depend on the soil condition/water strata. The schematic diagram is enclosed.

It should be therefore concluded that there is no significant impact on surface water quality & hydrology of the area. The proposed rainwater-harvesting scheme will stabilize the groundwater table in the area.

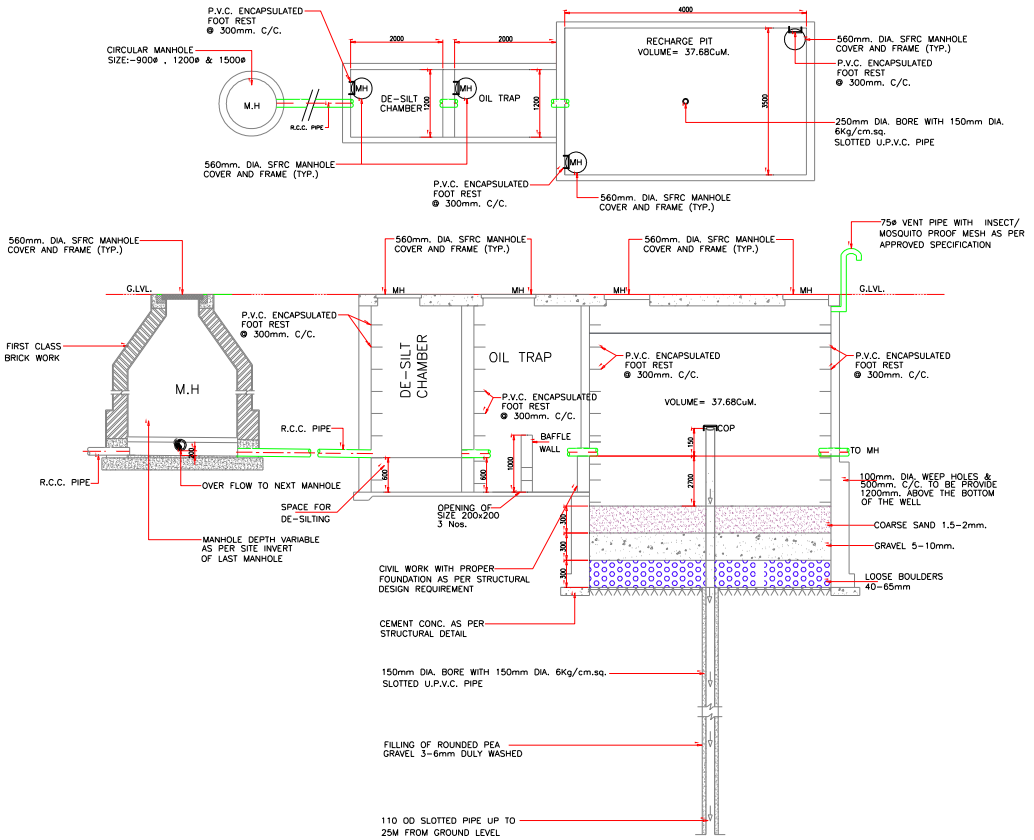
RAIN WATER HARVESTING PLAN

SOIL TYPE	Silty loam
NUMBER OF PITS	28 no.
SIZE OF PITS	5.2 x 3.5 x 2.7 m
INFILTRATION RATE	17.7 mm/hr
GROUND WATER LEVEL	Below 30 m
ANNUAL RAINFALL	712 mm (Gurgaon region)
PEAK HOURLY RAINFALL	45 mm/hr.

RAIN WATER HARVESTING CALCULATION:

S. No.	**Description of Area**	**Area Considered (m^2)**	**Runoff coefficient**	**Intensity of rainfall (mm/hr)**	**Total volume of water available for rain water harvesting (in m^3)**
1.	Roof top area	62262.72	0.90	45	2521.6
2.	Road, pavements & Open areas	35938.912	0.8	45	1293.8
3.	Green/Unpaved areas	32754.438	0.15	45	294.8
	GRAND TOTAL	**130956.07 m^2**			**4110.2 m^3**
	Volume of rainwater to be retained (m^3) in 15 min				1370.07
	Required volume of one pit (m^3)				49.14
	No. of pits – proposed				**28**

RAIN WATER HARVESTING PIT DIAGRAM



Points to be considered For Implementation and maintenance of Artificial Recharge Structures

- All the storm water drains would be kept clean. Connection of down spouts will be provided wherever required so as diverting the runoff to the structures.
- No contaminated water would be diverted into the storm water drains. Necessary peripheral drains will be constructed to divert the runoff to the recharge structures.
- Before the onset of the monsoon all the catchment area considered for recharge would be cleaned. The recharge structures would be in operation during the monsoon season only so as to avoid any contamination.
- A mesh would be provided on the mouth of the inlet to discard the debris entering into the recharge pit. A sluice/ shutter would be provided to ensure that no water other than rainwater is diverted to the recharge structure.
- Depth and location of the recharge wells may vary slightly as per the prevailing site conditions.
- After the first rain the de-silting pit would be cleaned and subsequently on the onset of next monsoon. A hygienic condition in the area would be maintained after implementation of artificial recharge structures, as the

recharged water would augment the water level in the proposed tubewells.

- Harvesting pit should be cleaned once in a year. All filter media should be cleaned properly

9.4 NOISE ENVIRONMENT

9.4.1 DURING CONSTRUCTION PHASE

During the construction stage, expected noise level will be in the range of 80-100 dB (A). Hence all the construction activities shall be carried out during the daytime.

During construction, there will be some noise generation due to the movement of vehicles carrying construction materials and as this is only a temporary phenomenon, it shall be managed by properly regulating the movement of vehicular traffic so that the ambient noise quality with respect to noise is not adversely affected. All the machinery and equipments shall be regularly maintained to reduce the noise level.

Acoustic enclosed type DG sets of 1x 180 KVA & 1 x 750 KVA will be installed with adequate stack height. Noise barriers shall be installed to reduce traffic noise & vibrations & Green belt shall be developed.

To prevent any occupational hazard, ear muff / ear plug will be given to the workers working around or operating the plant and machinery emitting high noise levels. Operation of such plant or machinery shall be strictly prohibited during night hours. Careful planning of machinery operation and scheduling of operations shall be taken to minimize such impact.

9.4.2 DURING OPERATIONAL PHASE

The total power requirement of the project will be 28310 KW. The main source of the noise pollution will be DG sets. DG sets of capacity 20 x 2000 KVA shall be installed within the proposed project:

- The DG sets shall be properly & timely maintained & fitted with residential silencer and shall be kept in acoustically enclosed room in basement.
- For vibration control, DG Sets shall be mounted on the Anti-vibration pads to eliminate/limit the vibrations due to DG sets running.

9.5 PARKING MANAGEMENT:

PARKING REQUIREMENT

ECS required (1 ECS/50 m^2 of carpet area) = 412380.47 / 50 = 8248 ECS

PARKING PROVISION:

Parking Provision	Basement Area (in m^2)	Parking Area (in m^2)	Factor	ECS
Basement	511505.263 m^2	336704 m^2	32	10522 ECS
Total parking provision				**10522 ECS**

9.6 WASTE MANAGEMENT

9.6.1 DURING CONSTRUCTION PHASE

Generation of Construction debris will be very less because of good engineering practices usage. Whatever small quantity of construction waste will be generated it will be stored properly as per MoEF construction guidelines / NGT directives. Further, it will be used within project premises only in making internal project roads.

200 Kg/day of Municipal Solid Waste generated during construction phase shall be disposed off as per Municipal Solid Waste Handling 2016. Used oil whenever generated from the DG sets shall be kept in an isolated area and in leak proof container and is being sent to approved recycler.

SOIL MANAGEMENT:

The excavated top soil was stored at DLF off site and will be used for horticulture at site. The excavated earth was used for levelling of DLF sites at different location and DLF internal road construction and area development activities. For further construction, top soil shall be initially stacked and covered with tarpaulin for settling then grass will be planted on it. As soon as proposed green area will be ready the top soil will be transferred and seeding will be done with regular sprinkling. Proper garland drain with check dam shall be provided to avoid soil erosion during rainy season. Excavated soil shall be reused for back-filling, road construction & levelling purposes to the extent possible. These materials shall be transported to the site by trucks.

9.6.2 DURING OPERATIONAL PHASE

MUNICIPAL SOLID WASTE MANAGEMENT:

The solid waste will be generated at each floor of shopping/commercial building. It will be segregated at, individual floor levels. They will be keep in different colour coded bins.

The waste will be collected in bin on each floor with different colours. The bins will be emptied into the main bin of the floor. From the bins of each floor, service provider will collect garbage and organic waste from green bins shall be treated in organic waste converter and converted to manure within the project premises. The management shall engage a vendor, who will carry this recyclable waste to the recycler for recycling.

Type of Waste	Colour of Bins	Category	Disposal Method	Total Waste (Kg/day)
Bio-Degradable	Green	Organic	The waste shall be treated in onsite composting unit and converted to manure and will be used for landscaping	3729
Non-Biodegradable	Blue	Recyclable	Approved Recycler	5593
Total				**9322 kg/ day**

HAZARDOUS WASTE MANAGEMENT:

Hazardous waste is a waste with properties that make it dangerous or potentially harmful to human health or the environment. The universe of hazardous wastes is large and diverse. Hazardous wastes can be liquids, solids, contained gases, or sludges. They can be the by-products of manufacturing processes or simply discarded commercial products, like cleaning fluids or pesticides. All hazardous wastes are required to be treated and disposed off in the prescribed manner. The main objective is to promote safe management and use of hazardous substances including hazardous chemicals and hazardous wastes, in order to avoid damage to health and environment.

Type of Waste	Colours of Bins	Disposal Method	Total Waste
Used Oil (Schedule 5.1)	Black With Label	Waste shall be collected in leak proof containers at isolated place and then it will be given to approved vendor of CPCB as per Hazardous Wastes & other waste (Management and Transboundary Movement) Rules, 2016.	1800 lit/month

E-WASTE MANAGEMENT:

Type of Waste	Colors of Bins	Disposal Method	Total Waste
Electronic	Black With Label	It will be collected and given to approved recycler of State Pollution Control Board as per Electronic Wastes (Management &Handling) Rules, 2016.	5-10 Kg/month

9.7 PLANTATION

Shelter belt planning will be done with ecological perspectives for the project taking into consideration and availability of space and other aspects. This will help in increasing the aesthetic effect of the environment.

Green belt/greenery shall be developed along most of the periphery of the project area as well as along roads. The trees planted shall be of adequate height. Any trees that do not survive shall be replaced. The plantation/greenery programme will be completed, simultaneously along with the project. Total Green area developed within the project will be 32754.438 sq. m (25.01 % of plot area).

The following characteristics are taken into consideration while selecting plant species for green belt development and tree plantation.

- They are fast growing and tall trees.
- They are perennial and evergreen.
- They have thick canopy cover
- They have large leaf area index.

Since tree trunks are devoid of foliage, scrub should form there to give coverage to the trunks. The trees maintain the regional ecological balance and conform to soil and hydrological conditions. Indigenous species will be preferred.
Green belt/greenery shall be developed along most of the periphery of the project area as well as along roads. The trees planted are of adequate height. Any trees that do not survive are replaced. The landscape plan is given at enclosure-9.

9.7.1 Plantation Programme Layout

Plantation in the project area helps to arrest the particulate matter in the area and hence attenuate the pollution to a great extent and contribute positively to the environment. The trees also help in maintenance of regional ecological balance and conform to soil and hydrological conditions. Indigenous species are preferred for the purpose.

9.8 ENVIRONMENT MANAGEMENT COST

A) During Construction Stage:-

S. No	Item	Capital / Investment Cost (Rs Lacs)	Recurring / Maintenance Cost per year (Rs Lacs/yr)
1	Barricade around construction site	500.00	6.00
2	Paving of roads / walkways to reduce dust emission	40.00	5.00
3	Construction of wheel wash bay	20.00	19.20
4	Covering of site & excavated soil		5.00
5	Water sprinkling for dust suppression	0.00	80.00
6	Shed & covering for construction materials	60.00	0.00
7	Sedimentation trap & storm water management	10.00	5.00
8	Sanitation facilities for construction workers including mobile toilets & drinking water	50.00	250.00
9	First aid room and medical facilities for workers	21.00	7.20
10	Garbage and debris disposal	3.00	60.00
11	Monitoring / testing (air, noise, water, soil, stack emission, STP effluent, DG noise)	0.00	2.00
12	Six-monthly compliance report of EC conditions	0.00	2.00
	Total during construction stage	**Rs. 704.00 Lacs**	**Rs. 441.40 Lacs**

B) Operation Stage: -

S. No	Item	Capital / Investment Cost (Rs Lacs)	Recurring / Maintenance Cost per year (Rs Lacs/yr)
1	Sewage Treatment Plant (STP)	650.00	29.50
2	Stacks for DG sets	160.00	0.00
3	Rainwater harvesting system	140.00	2.00
4	DG room enclosure & acoustic treatment	60.00	0.00
5	Solid waste bins & waste processing unit	50.00	14.40
6	Tree plantation & landscaping	2000.00	6.30
7	Solar lighting / solar panel	800.00	3.00
8	Solar water heating system	30.00	2.00
9	Monitoring / testing (air, noise, water, soil, stack emission, STP effluent, DG noise)	0.00	2.00
10	Six-monthly compliance report of EC conditions	0.00	2.00
	Total during operation stage	**Rs. 3890.00 Lacs**	**Rs. 61.20 Lacs**

9.9 CORPORATE ENVIRONMENT RESPONSIBILITY

The Companies Act, 2013 encourages companies to spend at-least 2% of their average net profit in the last three years on CSR activities under a Corporate Social Responsibility Program. However, as per CER office memorandum of MOEF dated 1.5.2018, the project cost for project is Rs 4551 Cr, hence the industry has to spend 0.5% of the cost of expansion (Rs 2.27 cr) on CER activities.

As per the Office Memorandum: Some of the activities which can be carried out in CER, are infrastructure creation for drinking water supply, sanitation, health, education, skill development, roads, cross drains, electrification including solar power, solid waste management facilities, scientific support and awareness to local farmers to increase yield of crop and fodder, rain water harvesting, soil moisture conservation works, avenue plantation, plantation in community areas, etc.).

The major activities in which the amount has been spent are Skill development, water facilities, Education, maintenance of roads and schools.

Now as per new CER guidelines, the activities proposed by the industry, seeing the requirement of the project in the surrounding areas are as follows:

- **Skill Development Centers**: A provision of Skill development center will be made in nearby villages, so that many more people can be trained in various sectors like Security staff, trained cleaners, shop staff, Repair maintenance staff, electrician, carpenter etc. Apart from training the people to become skilled personnel's, the training centre will become a source of income to trainers as well as develop many young people of the nearby villages.
- **Clean Drinking water facility**: A provision of 5 tanks of capacity 5000 Lt each will be made for the water coolers in the vicinity of villages and Bus stands. Free water facility in area will cater drinking water requirement of the people travelling.
- **Toilet Facilities**: A provision of 10 no. toilets will be made in Parks and road side as per the requirements in the nearby area.

As per the Office memorandum, The entire activities proposed under the CER shall be monitored and the monitoring report shall be submitted to the regional office as a part of half-yearly compliance report, and to the District Collector. Apart from this, the CER activities undertaken and shall be posted on the website of company. Also, The District Collector will have the right to add or delete the activities as per the requirement of the District.

9.10 HEALTH, SAFETY & OCCUPATIONAL MEASURES

During Construction Period:

- WELFARE:
- Potable drinking water is being provided.
- Mobile toilets are being provided.
- Liaison with hospitals for emergencies.
- Third party insurance etc.
- SAFETY:
- Measures for first aid, fire-fighting and premises evacuation.
- Necessary contacts with appropriate emergency services (first aid, emergency, medical care, rescue work and fire-fighting).
- Safety helmets, belts and slings, nets.
- Properly braced scaffoldings.
- Properly laid electrical cables and connections.
- D.G. sets with acoustic enclosures to reduce noise pollution.

Mitigation Measures for Handling of Construction Materials:

- Separate raw material yard shall be made. Cement will be separately stored under cover in bales.
- Sand will be stacked nearby under tarpaulin cover.

To minimize the occupational health hazard, proper mask shall be provided to the workers who are engaged in dust generation activity.

During Operational Period:

1. Measures shall be taken to identify the Electrical Environment Impacts (Hazards) arising during the land preparation for use, building construction operation, and the entire cycle activities of the project and proper mitigation measures shall be adopted. The location of transformers, earth pits, electric panels, boards and distribution of power from power house or generator house/switch room, cable network shall

be carefully monitored. All the standards, codes or legal requirements required to be adopted during the installation of electrical equipments, appliances, electric/ battery heating/ cooling appliances/ plant distribution lines/ cables network, switch boards, circuits, earthing/ bounding, earth pits, lightning arrestors and protective equipments and clothings shall be carefully fulfilled.

2. All Fire and Explosion Hazards in the entire cycle activities of the project and all possible sources of fire hazards and fire mitigation measures shall be noted. All the standards, codes & legal requirements of line diagram for fire protection systems including fire water supply, storage of water, overhead water tanks, underground water tanks and their capacity, water sprinkling system (moveable, stationary) shall be fulfilled. emergency exits, fire ladders, fire protective clothings and equipments like helmets, safety belts, safety ladders, safety boots and goggles, fire suits, cranes used for fire fighting and for the rescue of the people in case of fire in multi-storeyed buildings and others shall be provided.

   Proper Coordination with Local Municipal Fire Brigade, police, health surveillances (To treat the effected person in fire) shall be maintained. Proper Fire Management System shall be installed with time schedule giving how far is the fire station and how long it takes to reach the building. Provision of Training programme & mock drill shall be made at regular intervals.

3. Environment Management Plan shall be prepared with Emergency Procedures (Emergency Plan) to deal with localized fire and electrical hazards and hazards due to natural calamities at the entire cycle of the activities of the project. Provision of the communication systems to call to help and assistance from nearby building complexes bodies and other external authorities like district authority, fire services, police services, medical services, civil and defense services etc. shall be provided.

SAFETY MEASURES TO BE ADOPTED FOR SHOPPING/COMMERCIAL BUILDING:

1. Fire Fighting Scheme
2. Earthquake resistant structure
3. CCTV's
4. Manual Scanners
5. Manual Car Checking

Chapter 10: SUMMARY AND CONCLUSION

The proposed project Shopping/ Commercial Building on 32.36 acres Site (Mall of India) in Block-V, DLF City Phase-III, Sector-25A, Gurgaon. The total plot area of the project is 130,956.066 m2 (32.36 acres). The site is earmarked for development of commercial establishments as per the local development/zoning plan. The proposed project is planned and designed as per the regulations and procedures laid down by the Haryana Urban Development Authority (HUDA) and Director of Town & Country Planning (DTCP).

Earlier Environmental Clearance (EC) for this project was granted by the MoEF vide their letter no. 21-206/2007-IA-III dated 30.07.2007 for Shopping/ Commercial Complex "Mall of India" at Block V, DLF City Phase-III, Sector 25A, Gurgaon, Haryana after obtaining the EC, site preparation and excavation has been done at the project site. No construction has been done after that. Now due to change in design of the building and increase in permissible FAR, the built- up area will be increased to 10,57,114.09 sqm. which is greater than 3,00,000 sq m & hence, it falls under category 8(b) 'B' as per OM vide F.No . 3-150/2017-IA-III dated 03.04.2018.

The Application for grant of ToR was submitted online on MoEF&CC on 16.03.2018, thereafter the case was transferred to State portal i.e. SEIAA, Haryana on 18.04.2018.and the ToR was granted vide letter no. SEIAA/HR/2018/630 dated 15.06.2018. The baseline data was collected for March- May 2018.

The total population of the project will be 93675 (Staff: Retail- 8658, Office- 6174; Visitor: Retail-77917, Office- 956) which will consist of offices, retail, shopping & commercial. The total quantity of water required in the project will be 3283.8 KLD out of which fresh water requirement will be 1510.3 KLD, which will be met by HUDA. 1866.8 KLD waste water will be generated from the project and the same will be treated in STP of 2200 KLD. The treated water of 1773.5 KLD will be utilized

for flushing, gardening & cooling tower. It will be a zero-discharge unit. 28 number of rain water collection pit shall be constructed for the project.

For 93675 persons, around 9322 kg/day solid waste will be generated from the project. Biodegradable waste of 3729 kg/day shall be treated in onsite composting unit and converted to manure and will be used for landscaping and 5593 kg/day of plastic waste shall be handed over to approved recycler.

The total electric load of the project will be 28310 KW of electric load from Dakshin Haryana Bijli Vitran Nigam Limited (DHBVNL). In case of power failure, power backup will be provided through 20 x 2000 KVA of DG sets. Hence, to avoid the emissions, stack height of 6 m above roof level for each D.G. sets shall be maintained. DG sets shall meet all the norms prescribed by CPCB.

Parking requirement for the proposed project is 8248 ECS, thus adequate provision will be kept for car parking. Total Parking provision of 10522 ECS shall be provided.

Total Green area within the proposed project will be 32754.438 sq m (25.01 % of plot area).

Chapter 11: DISCLOSURE OF ENVIRONMENTAL CONSULTANT

Disclosure

of

Environmental Consultant

Perfact Enviro Solutions Pvt Ltd.

5thFloor, Front Wing, NN Mall

Sector- 3, Rohini, New Delhi - 110085

Phone: +91-11-49281360

About Environmental Consultant

➢ INTRODUCTION:

Perfact Enviro Solutions Pvt. Ltd, established by experienced environmental and related experts, provides specialized services in the field of Environment and Pollution Control for all types of **Industrial, Construction, Nuclear Sciences, Bio-diversity Mining, Aerial Ropeway and other related fields**. Our transparent and professional approach, commitment to excellent quality and service, timely deliveries have contributed to create a name in the field of environment. We have a core group of highly qualified experts from various fields like Environment, Forestry, Chemistry, Civil Engineering, Geology, Social Sciences, Electronics and Telecommunication with rich and diversified experience in the field of environment and pollution control.

Perfact Enviro Solutions Pvt. Ltd is headed by **Mr. Praveen Bhargava**, Managing Director who has an experience of 27 years in the field of Environment and **Mrs. Rachna Bhargava**, Director & C.E.O, who has an experience of 21 years in the field of Environment.

Perfact Enviro Solutions Pvt. Ltd management, experience, excellence, professionalism and ultimate satisfaction has helped in achieving the heights of success in their specialized field of environment.

➢ ACCREDIATATIONS OBTAINED:

- ISO-9001:2015 Certification
- ISO-14001:2015 Certification
- QCI – NABET Scheme for Accreditation of EIA Consultant Organization

➢ KEY PERSONS:

S. No	Brief Description of Key Persons (NABET Approved)
1	**Mr. Praveen Bhargava** is M. Phil in Chemistry, M. Sc in Inorganic Chemistry, P.G. Diploma in Ecology & Environment with overall experience of more than 27 years and currently the Director & Technical Head of Perfact Enviro Solutions Pvt. Ltd
2	**Mrs. Rachna Bhargava**, M. Sc in Environmental Science, M. Sc in Mathematics & MA in Geography having more than 21 years of experience in the field of Environment is the Head / Team Leader of EIA Preparation Team. She is also a certified Advance EMS Auditor (ISO-14001:2004) & Laboratory Management & Internal Auditor (ISO 17025:2005) from CII and had undergone Training program on EIA, SIA,

	Air Dispersion Modelling, Air Quality, CSR, Advanced Training Programme on Green Building Rating System, etc.

The EIA report of the project **"Shopping/Commercial Building on 32.36 Acres Site (Mall of India)"** at Block V, DLF City Phase-III, Sector – 25 A, Gurugram, Haryana by **M/s DLF City Centre Limited.** is prepared by **M/s Perfact Enviro Solutions Pvt. Ltd., New Delhi.**

- **Team (EIA Coordinators, FAEs, FAAs & Team Members) involved in the Project:**

  - **EIA Coordinators:** Mrs. Rachna Bhargava
  - **Assistant to EIA Coordinator:** Sujitha Kumari
  - **Team :**

Functional Area	Approved FAE	Approved FAA	Team Members
LU	Rajneesh Mourya	***	***
AQ	***	***	***
AP	Nipun Bhargava	Latika Sehgal	***
WP	Neha Aggarwal	***	***
EB	Rajiv Kumar	***	***
SE	Rachna Bhargava	***	***
NV	****	Urvi Pritam	Praveen Bhargava
GEO	****	Anand Singh	***
HG	Santosh Pant	Anand Singh	***
SC	Rachna Dogra	Chandra Shekhar	***
RH	****	***	***
SHW	Praveen Bhargava	Shimael Fatima	***

The list of approved EIA Coordinators & FAEs is also available on the official website of NABET

Details of the Accreditation of Perfact Enviro Solutions is available on the official website of NABET under the heading: List of Accredited EIA Consultant Organizations with accredited sectors

114	**Perfact Enviro Solutions Pvt. Ltd.** **Address:** 5th Floor, M/s Mall, Sector – 3, Rohini, New Delhi	1	Mining of minerals including Open cast/ Underground mining	A	1 (a) (i)
		7	Mineral beneficiation including	A	2 (b)

List of Accredited Consultant Organisations (Alphabetically) Rev. 67 July 09, 2010 Page 112

S. No.	Consultant Organization	Scope of Accreditation			
		As per NABET Scheme			Project or Activity as per Schedule of MoEFCC Notification dated September 14, 2006 and subsequent Amendments
		Sector Number	Name of Sector	Category	
	- 110085 **E-mail:** info@perfectgroup.in **Tel.:** 011 – 40281350 09871591330 Conditions apply		petroleum		
		9	Cement plants	A	3 (b)
		15	Leather/skin/hide processing industry	A	4 (f)
		21	Synthetic organic chemicals industry (dyes and dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	A	5 (f)
		22	Distilleries	A	5 (g)
		29	Air ports	A	7 (a)
		31	Industrial estates/ parks/ complexes/ Areas, export processing zones(EPZs), Special economic zones (SEZs), Biotech parks, Leather complexes	A	7 (c)
		32 A	Bio-Medical waste treatment Facilities	B	7(da)
		35	Aerial ropeways	A	7 (g)
		37	Common Municipal Solid Waste Management Facility (CMSWMF)	B	7 (i)
		38	Building and construction	B	8 (a)

List of Accredited Consultant Organisations (Alphabetically) Rev. 67 July 09, 2010 Page 113

S. No.	Consultant Organization	Scope of Accreditation			
		As per NABET Scheme			Project or Activity as per Schedule of MoEFCC Notification dated September 14, 2006 and subsequent Amendments
		Sector Number	Name of Sector	Category	
			projects		
		39	Townships and Area development projects	A	8 (b)

Enclosure 5: Air Dispersion Report

IMPACT PREDICTION OF NON-POINT EMISSION ON AMBIENT AIR QUALITY

For

"Shopping/ Commercial Building on 32.36 acres Site (Mall of India)

At

Block-V, DLF City Phase-III, Sector-25 A, Gurugram, Haryana

Developed By
M/s DLF City Centre Limited

Prepared BY:
M/s PERFACT ENVIRO SOLUTIONS PVT. LTD.
502 -507 NN MALL, SECTOR 3 ROHINI
NEW DELHI – 110085
PH : 011 – 47528467
FAX : 011 – 47528434

Chapter 1: INTRODUCTION

The ambient air quality Ground Level Concentration (GLC) of the area near any project is impacted due to air pollution sources in the project. The air pollution sources are of two types:

- Point Sources – Chimneys/ Stacks/ ducts/ Vents
- Non-Point Sources – Vehicles, machinery, blasting, drilling etc.

The emissions from these sources spread or disperse in the air and cause increase in the pollution level in ambient air. This causes an increase in Ground Level Concentration (GLC). This increase in GLC can be predicted for proposed project using Air Dispersion Modelling. In this study, AERMOD developed by Lakes Environmental Inc. is used to calculate incremental Ground Level concentrations (GLC) for the proposed sources of air pollution in the current expansion, for Particulate emissions, Gaseous emissions (NO_x & SO_2).

Chapter 2: METHODOLOGY

For Air Dispersion Modelling following methodology shall be used:

2.1 Modelling Procedure

AERMOD uses Gaussian plume dispersion modelling parameters, the generalised equation is given below:

$$c = \frac{Q}{2\pi u \sigma y \sigma z} exp\left(-\frac{1}{2}\frac{Y^2}{\sigma^2 y}\right)\left\{exp\left[-\frac{1}{2}\frac{(z-h^2)}{\sigma^2 z}\right] + exp\left[-\frac{1}{2}\frac{(z+h^2)}{\sigma^2 z}\right]\right\}$$

Where

c = concentration at a given point (g/m^3)

Q = emission rate (g/s)

u = wind speed (m/s)

σ_y = dispersion parameter in the horizontal (lateral) direction (m)

σ_z = dispersion parameter in the vertical direction (m)

x = direction of the wind (x = 0 at the source; x > 0 downwind).

y = horizontal direction perpendicular to the wind (y = 0 at the center of the plume; positive on your left when you look downwind).

z = vertical direction (z = 0 at the surface and positive above the surface).

As well as the effective source height h. They all have meters as units.

Plume Rise

Plume rise Δh has been determined according to Brigg's formula (CPCB guideline)

$$\Delta h = 21.425 \frac{F^{3\,4}}{U_s} \quad \text{for } F<55$$

and

$$\Delta h = 38.71 \frac{F^{3\,5}}{U_s} \quad \text{for } F>55$$

$F = g\, V_s D^2 (T_s - T_a)/4T_s$

Where

U_s = wind speed at stack level (m/s)

V_s = stack gas velocity (m/s)

T_s = stack gas temperature (K)

T_a = ambient temperature (K)

F = Buoyancy flux parameter (m^4/s^3)

Δh = Plume rise (m)

D = Diameter of the stack (m)

g = acceleration due to gravity, 9.807 (m/s^2)

Chapter 3: Extrapolation of Wind Speed

Wind speed at stack level is calculated by power law as given below.

$U_{stack} = U_{10}(\text{Stack height}/10)^{p}$

Where U_{10} is the wind speed at 10 meter level and p is the power law coefficient (0.07, 0.07, 0.10, 0.15, 0.35 and 0.55 for stability classes A,B,C,D,E and F respectively) as per Irwin for rural areas (USEPA, 1987).

3.1 Stability Classification

Hourly stability is determined by wind direction fluctuation method as suggested by Slade (1965) and recommended by CPCB (PROBES/70/1997-1998).

$\sigma\theta = W_{dr}/6$

$\sigma\theta$, is standard deviation of wind direction fluctuation, W_{dr} is the overall wind direction fluctuation or width of the wind direction in degrees. The table for stability classes is given as under.

Stability Class	$\sigma\theta$ (degree)
A	> 22.5
B	22.4 – 17.5
C	17.4 – 12.5
D	12.4 – 7.5
E	7.4 – 3.5
F	< 3.5

3.2 Dispersion Parameters

Dispersion parameters σ_y and σ_z for open country conditions (Briggs, 1974) are used as the project is located on a flat terrain in a rural area. Atmospheric dispersion coefficients vary with downwind distance (x) from emission sources for different atmospheric stability conditions. (CPCB – PROBES/70/1997-98).

3.3 Rural Conditions

Stability Class	σ_y	σ_z
A	$0.22x(1+0.0001x)^{-.5}$	0.20x
B	$0.16x(1+0.0001x)^{-.5}$	0.12x
C	$0.11x(1+0.0001x)^{-.5}$	$0.08x(1+0.0002x)^{.5}$
D	$0.08x(1+0.0001x)^{-.5}$	$0.06(1+0.0015x)^{.5}$
E	$0.06x(1+0.0001x)^{-.5}$	$0.03x(1+0.0003x)^{-1}$
F	$0.04x(1+0.0001x)^{-.5}$	$0.16x(1+0.0003x)^{-1}$

Chapter 4: INPUT DATA

4.1 Point Sources:

A Table showing all the sources of Air Pollution (Incremental i.e. Proposed due to the proposed project) are given; other air pollutions sources have not been considered in the model because their impact has been already incorporated in baseline concentrations (Onsite and Buffer zone). Proposed project will have 20 x 2000 KVA.

The emission factors have been calculated using the experimental/ practically computed (As per USEPA).

Stack Name	Diameter (m)	Height of stack from ground (m)	Temperature of stack (K)	Flow (m^3/s)	PM_{10} emission Rate (g/s)	$PM_{2.5}$ emission Rate (g/s)	NO_x emission rate (g/s)	SO_2 emission rate (g/s)	Remarks
20 x 2000 KVA	0.65	66	691	4.24	0.067	0.013	0.027	0.24	DG operates only 2Hr Average per day

4.2 Non-Point Source:

Non-Point sources will be vehicular movement on Approach road & NH-8

Length of Sector road – 9m
Length of NH-8- 35 m

4.3 Meteorological Data

Hourly meteorological data project site for period of one season (March 2018-May 2018) in respect of wind speed, wind direction, temperature and cloud amount are utilized in this study which were collected by M/s Perfact Researchers Pvt Ltd. Mean mixing heights for each hour for region are extracted from the IMD data and AERMOD Upper air estimator data. These data are used in air quality modelling software.

4.4 Ambient Air Quality Standards and Background Concentrations

Ambient air quality standards promulgated by Central Pollution Control Board (CPCB) for different areas are as follows:

S. No	Pollutant µg/m^3	Time Weighted Average	Concentration in Ambient Air	
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area(Notified by Central Government)
1.	Sulphur Dioxide(SO_2),	Annual* 24 hours**	50 80	20 80
2.	Nitrogen Dioxide(NO_2),	Annual* 24 hours**	40 80	30 80
3.	Particulate Matter (size less than 10µm) or PM_{10}	Annual* 24 hours**	60 100	60 100
4.	Particulate Matter (size less than 2.5µm) or $PM_{2.5}$	Annual* 24 hours**	40 60	40 60

*Annual arithmetic mean of minimum 104 measurements in a year at particular site taken twice a week 24 hourly at uniform intervals**24 hours monitored values, shall be compiled with 98% of the time in a year, 2% of the time, they may exceed the limits but not on two consecutive days of the morning. The above standards are for a sampling period of 24 hours.

Station No.	**Location**	**Mean Baseline Values for PM_{10} in µg/m^3**	**Mean Baseline Values for $PM_{2.5}$ in µg/m^3**	**Mean Baseline Values for SO_2µg/m^3**	**Mean Baseline Values for NO_x µg/m^3**
1	Onsite (West)	250.9	102.8	8.3	23.7
2	Onsite (East)	240.9	98.7	7.9	22.8

3	Nathupur village	288.5	118.3	9.5	27.3
4	Udyog Vihar village	326.2	133.7	10.7	30.9
5	Dundahera village	313.6	128.5	10.3	29.7
6	Rajokri village	276.0	113.1	9.1	26.1

Chapter 5: Plan and Frame Work of Computations

5.1 Selection of Locations

The locations have been selected around project site covering an area of 10 km radius from the centre of the project site. The entire area has been put on grid network and grid spacing has been taken as 500 m.

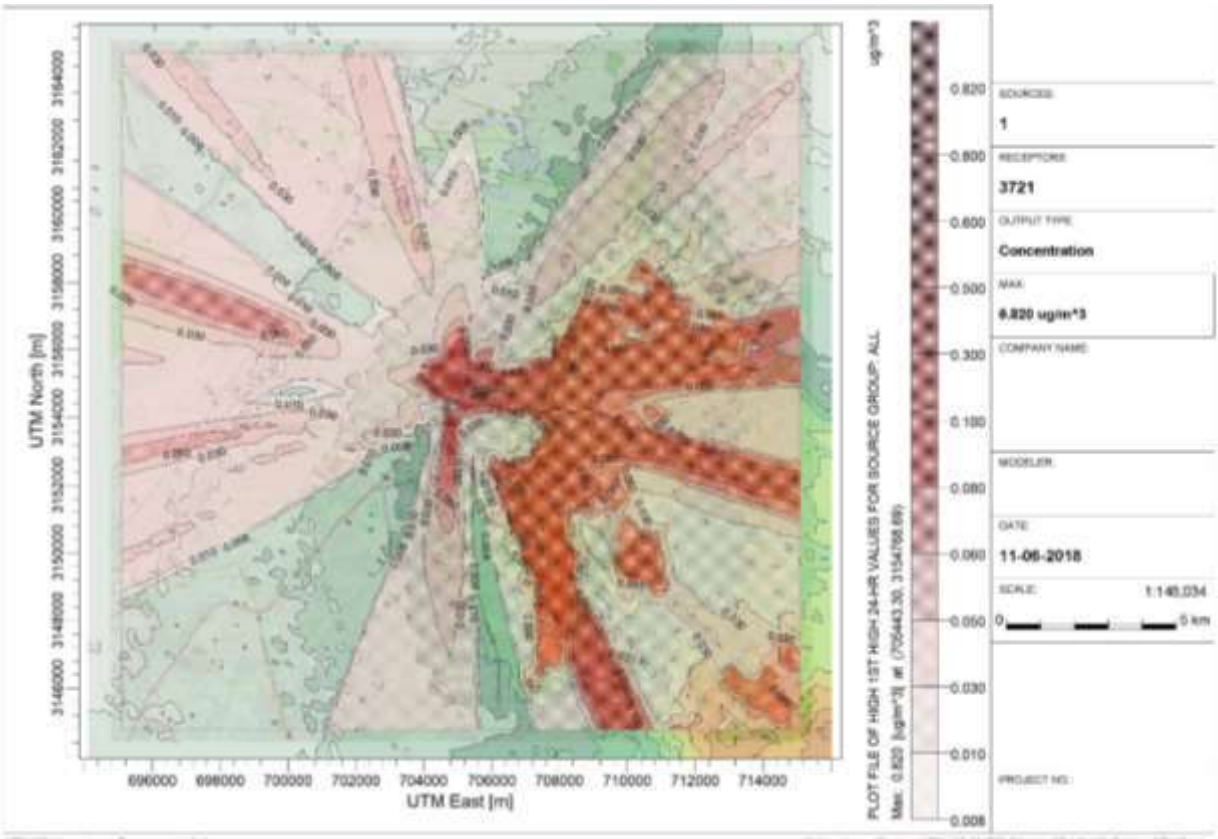
5.2 Plan of Computation

The emission rate, dispersion coefficients and other input data being now available; it was planned to compute the following:

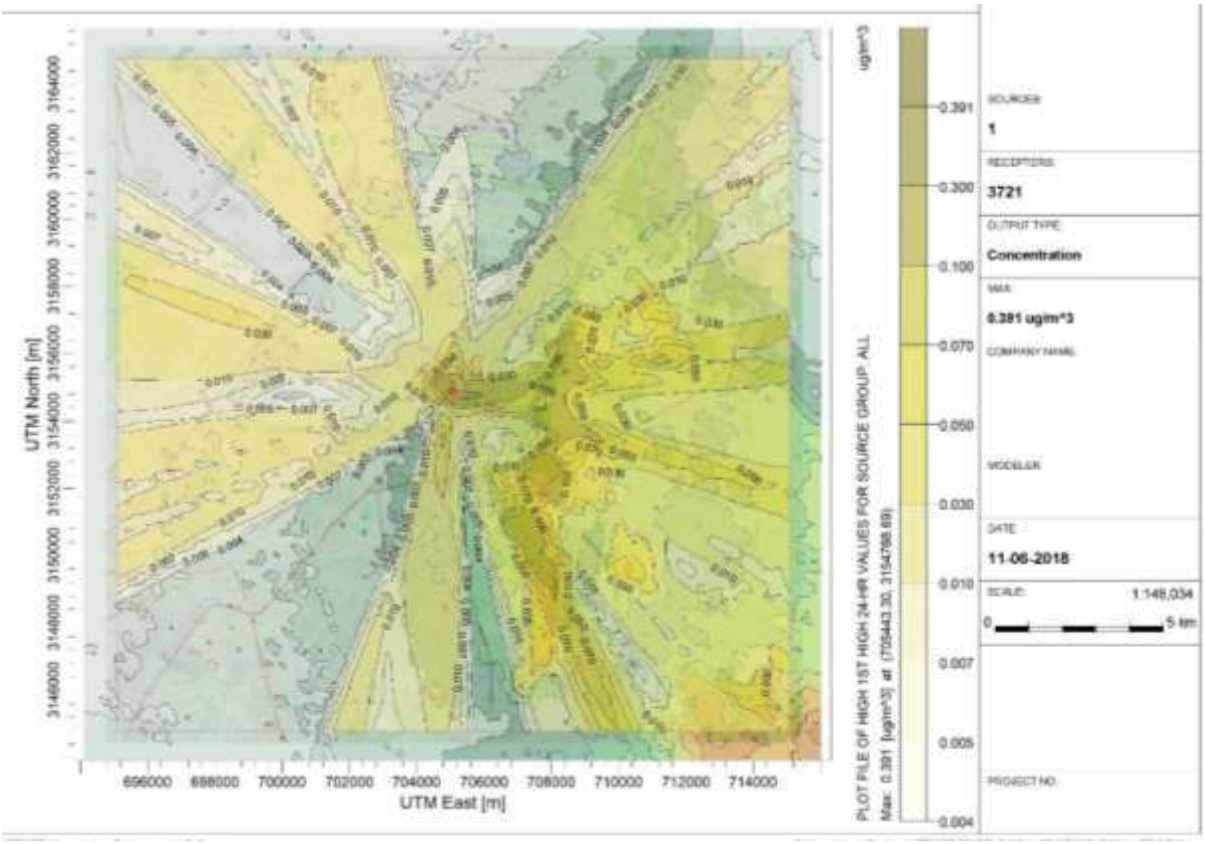
- The 24-hourly averaged incremental concentration with hourly data.
- The identification of grid point having peak concentration for the incremental values.
- Preparation of isopleths of for various pollutants.

Chapter 6: MODEL OUTPUT FILES

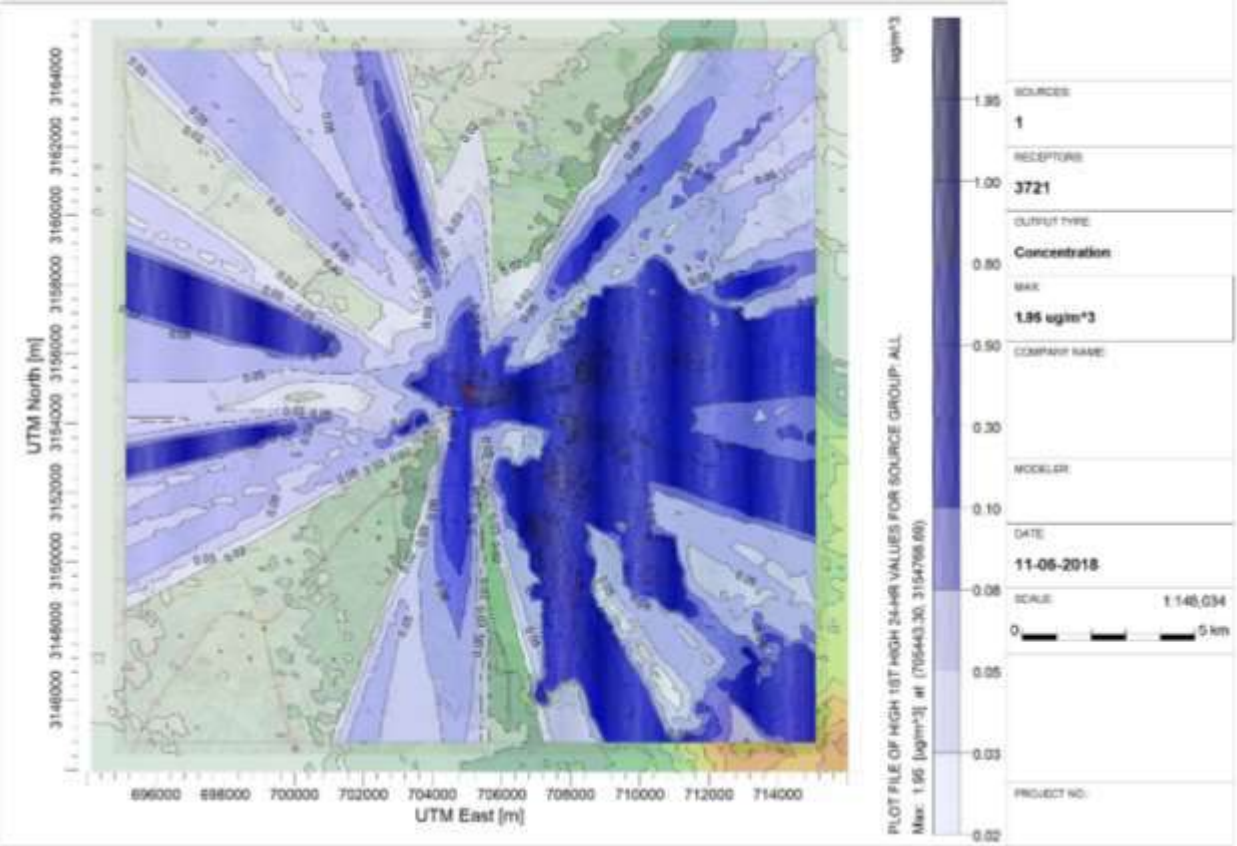
6.1 AERMOD OUTPUT ISOPLETH FOR $PM_{2.5}$ DISPERSION (DG sets)



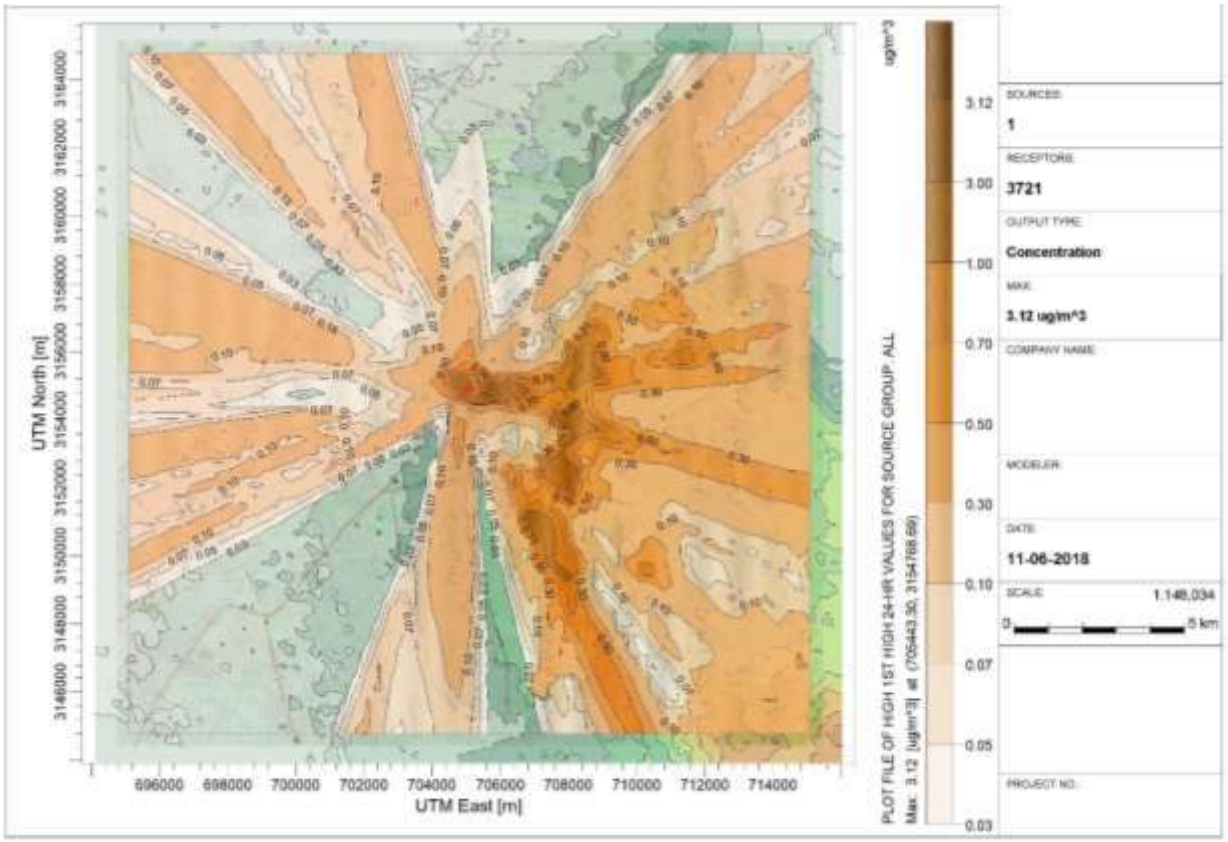
6.2 AERMOD OUTPUT ISOPLETH FOR $PM_{2.5}$ DISPERSION (Vehicular)



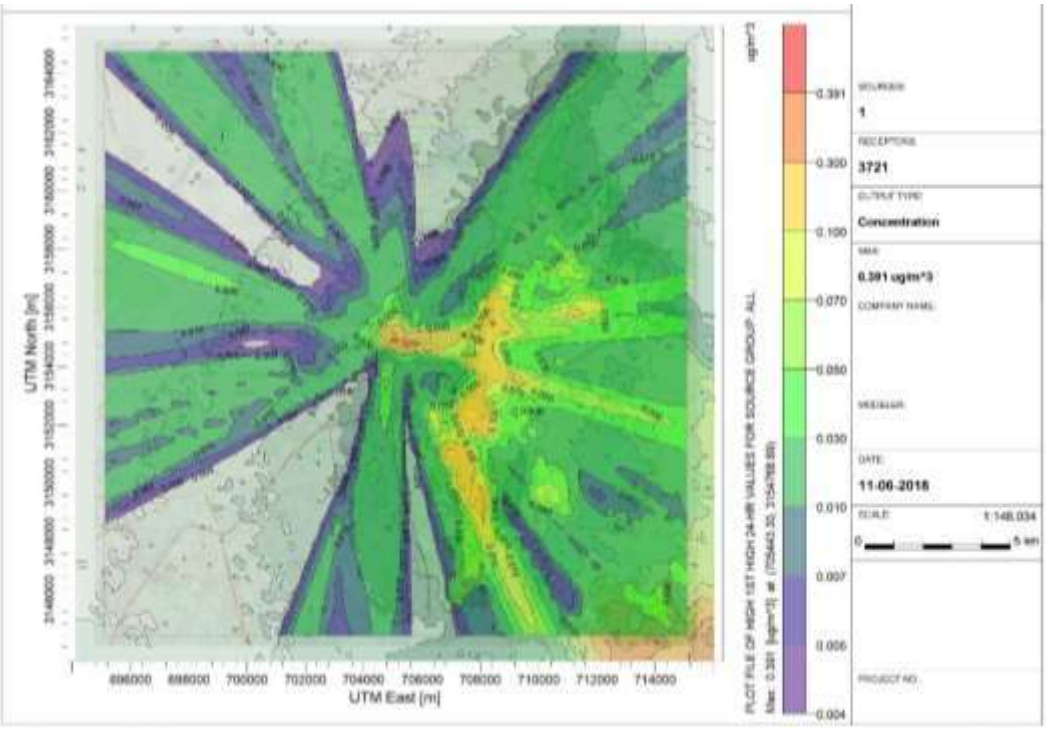
6.3 AERMOD OUTPUT ISOPLETH FOR PM_{10} DISPERSION



6.4 AERMOD OUTPUT ISOPLETH FOR NO_x DISPERSION



6.5 AERMOD OUTPUT ISOPLETH FOR SO_2 DISPERSION



Chapter 7: RESULT AND DISCUSSIONS

7.1 PREDICTED AMBIENT AIR QUALITY FOR IMPACT OF $PM_{2.5}$ (DG Sets)

With available ambient air quality data and incremental concentrations computed through mathematical modelling the following post project ambient air quality has been predicted. The maximum GLC for $PM_{2.5}$ modelling will be 0.820 $\mu g/m^3$.

Table Showing Village $PM_{2.5}$ Dispersion Results:

Location	Background Concentration PM2.5 (µg/m3)	Predicted Incremental Concentration PM2.5 (µg/m3)	Post Project Air Quality PM2.5 (µg/m3)	NAAQS (µg/m3)
Onsite (West)	102.8	0.650	103.45	60
Onsite (East)	98.7	0.620	99.32	60

Nathupur village	118.3	0.720	119.02	60
Udyog Vihar village	133.7	0.100	133.8	60
Dundahera village	128.5	0.050	128.55	60
Rajokri village	113.1	0.080	113.18	60

7.2 PREDICTED AMBIENT AIR QUALITY FOR IMPACT OF $PM_{2.5}$ (Vehicular)

With available ambient air quality data and incremental concentrations computed through mathematical modelling the following post project ambient air quality has been predicted. The maximum GLC for $PM_{2.5}$ modelling will be 0.391 $\mu g/m^3$.

Table Showing Village $PM_{2.5}$ (Vehicular)Dispersion Results:

Location	Background Concentration PM2.5 (μg/m3)	Predicted Incremental Concentration PM2.5 (μg/m3)	Post Project Air Quality PM2.5 (μg/m3)	NAAQS (μg/m3)
Onsite (West)	102.8	0.390	103.19	60
Onsite (East)	98.7	0.390	99.09	60
Nathupur village	118.3	0.095	118.395	60
Udyog Vihar village	133.7	0.040	133.74	60
Dundahera village	128.5	0.055	128.555	60
Rajokri village	113.1	0.070	113.17	60

7.3 PREDICTED AMBIENT AIR QUALITY FOR IMPACT OF PM_{10}

With available ambient air quality data and incremental concentrations computed through mathematical modelling the following post project ambient air quality has been predicted. The maximum GLC for PM_{10} modelling will be 1.96 $\mu g/m^3$.

Table Showing Village PM_{10} Dispersion Results:

Location	Background Mean Concentration $PM_{10}(\mu g/m^3)$	Predicted Incremental Concentration PM10 ($\mu g/m3$)	Post Project Air Quality PM_{10} ($\mu g/m^3$)	NAAQS ($\mu g/m3$)
Onsite (West)	250.9	1.80	252.7	100
Onsite (East)	240.9	1.80	242.7	100
Nathupur village	288.5	0.75	289.25	100
Udyog Vihar village	326.2	0.35	326.55	100
Dundahera village	313.6	0.10	313.7	100
Rajokri village	276.0	0.20	276.2	100

7.4 PREDICTED AMBIENT AIR QUALITY FOR IMPACT OF NO_x

With available ambient air quality data and incremental concentrations computed through mathematical modelling (Gaussian Plume) the following post project ambient air quality has been predicted. The maximum GLC for NO_x modelling will be 3.12 $\mu g/m^3$ which would be on road.

Table Showing Village NO_x Dispersion Results:

Location	Background Concentration NOX ($\mu g/m3$)	Predicted Incremental Concentration NOX ($\mu g/m3$)	Post Project Air Quality NOX ($\mu g/m3$)	NAAQS ($\mu g/m3$)
Onsite (West)	23.7	3.10	26.8	80
Onsite (East)	22.8	3.10	25.9	80

Nathupur village	27.3	0.49	27.79	80
Udyog Vihar village	30.9	0.32	31.22	80
Dundahera village	29.7	0.20	29.9	80
Rajokri village	26.1	0.15	26.25	80

7.5 PREDICTED AMBIENT AIR QUALITY FOR IMPACT OF SO_2

With available ambient air quality data and incremental concentrations computed through mathematical modelling (Gaussian Plume) the following post project ambient air quality has been predicted. The maximum GLC for SO_2 modelling will be 0.391 $\mu g/m^3$.

Table Showing Village SO_2 Dispersion Results:

Location	**Background Concentration SO2 (μg/m3)**	**Predicted Incremental Concentration SO2 (μg/m3)**	**Post Project Air Quality SO2 (μg/m3)**	**NAAQS (μg/m3)**
Onsite (West)	8.3	0.295	8.595	80
Onsite (East)	7.9	0.290	8.19	80
Nathupur village	9.5	0.065	9.565	80
Udyog Vihar village	10.7	0.010	10.71	80
Dundahera village	10.3	0.035	10.335	80
Rajokri village	9.1	0.009	9.109	80

Chapter 8: DATA INTERPRETATION

From the results generated by AERMOD in form of Isopleth and results of same in table above show that maximum GLC of PM10/ PM2.5/SO_2/NO_X after commencement of project does not have a significant impact on environment/ ambient air quality on sensitive receptors of the project.

Enclosure 6: Topographical Map, OSM Sheet & Blow Up

TOPOGRAPHICAL MAP-10KM RADIUS AREA SHOPPING MALL COMPLEX/COMMERCIAL BUILDING "MALL OF INDIA" AT BLOCK-V, DLF CITY PHASE-II, SECTOR-25A, GURGAON, HARYANA

77° 0 0' 00" | 77° 0 2 ' 30" | 77° 0 5' 00" | 77° 0 7 ' 30" | 77° 1 0 ' 00"

28° 35' 00" | 28° 32' 30" | 28° 30' 00" | 28° 27' 30" | 28° 25' 00"

N

SCALE 1 : 50,000

PROJECT SITE

UDYOG VIHAR

MARUTI UDYOG

DLF PHASE 3

Town House DLF PHASE 3 (Qutab Enclave)

Nathupur

DLF PHASE 2 (Qutab Enclave)

Garden Estate

HERITAGE CITY

SECTOR 18

SECTOR 17

SECTOR 14

SECTOR 15-11

SECTOR 15-1

SECTOR 31

SECTOR 32

SECTOR 39

SECTOR 30

SECTOR 50

SECTOR 51

SECTOR 52

SECTOR 52 A

SECTOR 54

SECTOR 53

SECTOR 55

SECTOR 57

SECTOR 49

SECTOR 33

SECTOR 34

SECTOR 35

SECTOR 10

SECTOR 9

SECTOR 7

SECTOR 4

SECTOR 5

URBAN ESTATE GURGAON

CITY CENTRE (Under development)

DLF PHASE 1 (Qutab Enclave)

DLF PHASE 4 (Qutab Enclave)

DLF PHASE 5

Sikandarpur Ghosi DLF PHASE 2

Arjungarh

Ayanagar

Ghatorni

Chhatarpur

Sultanpur

Gadaipur

Gadaipur Bandh

Mandi

Dera Mandi

Asola

Fatehpur Beri

Sharpur Nala

Kaushal Nala

Qutab Plaza

Bandhiawala Johar

Patauwala Johar

Ghata Kanagarpur

Ghasaula

Alahawas

Bindapur

Haiderpur

Wazirabad

Shamashpur

Fatehpur

Adampur

Tikri

Behrampur

Sirhaul

Sukhrali

Chakarpur

Saraswati Colony

Mati khera

Sushantlok

Kanhai

Daulatpur

Jharsa

Khandsa

Harinagar

Hans Enclave

Court

Kadipur

Gandhinagar

Hiranagar

Shivaji Park

Rajivnagar

Shivajinagar

Omnagar

Shantinagar

Krishnanagar

Arjunnagar

Jyoti Park

Chandarnagar

Subhashnagar

Shivpuri

Railway camp

Surya Vihar

Sirhaul

Anand Park

Vishnu Garden

Ratan Vihar

Rajendra Park

Swarup Garden

Bhimgarh

Gurgaon RS

Ashok Vihar

Lakshman Vihar

Dahia Colony

Gurgaon Masani

Annual Fair(Mar)

Marketing Institute (IFFCO)

Poultry Farm

Cremation ground

Bank Staff Colony

Saraswati Colony

Chakarpur

Jalwayu Vihar

Rail Vihar

Friends Colony

Kirtinagar

Salokhra

Jharsa

Cremation ground

Bindapur

Shamashpur

Fatehpur

Adampur

Tigra

Behrampur

Ghasaula

Alahawas

Ghata or Badshahpur

Brick kilns

Open scrub

Stone quarry

Mud quarries

Mandi Hills Farm Houses

Dera Mandi Farm House

Cremation ground

Saltanpur Farm Houses

Delhi Land Finance Farms

Gurudwara

Radhe Mohan Drive Farm Houses

Chandan Hula

Junapur

Mud quarry

Brick kilns

Check post

Toll

Dhani Gwalpahari

Solar Energy Centre

Li Nala

Balola (Baliyawas)

Kharak

Sharpur Nala

Asola Farm House

Radha Swami Satsang Beas Bhatti Centre

Rajpur Khurd Extn.

Chhatarpur Extn.

Chhatarpur Enclave

Maidan Garhi

Indian National Quarry

Sat Bari

Sat Bari Poultry Farm

Bhatti Kalan

Bhatti Khurd

Rohtak

Dehmod Johar

Check post

Toll

Kaushal Nala

Delhi Land Finance Farms

Ghatorni Farm Houses

Chimney

Wall

Wire fence

Open scrub

Mud quarry

Brick kilns

Stone quarry

Mandi Hills Farm Houses

Dera Mandi Farm House

Cremation ground

Saltanpur Farm Houses

Gadaipur Farm Houses

Radhe Mohan Drive Farm Houses

Asola Farm House

Dhani Gwalpahari

Li Nala

Balola (Baliyawas)

Kharak

Sharpur Nala

Kaushal Nala

Rajpur Khurd Extn.

Chhatarpur Extn.

Chhatarpur Enclave

Maidan Garhi

Indian National Quarry

Sat Bari

Sat Bari Poultry Farm

Bhatti Kalan

Bhatti Khurd

Rohtak

Dehmod Johar

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Ghatorni Farm Houses

Chimney

Wall

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Asola Farm House

Dhani Gwalpahari

Li Nala

Balola (Baliyawas)

Kharak

Sharpur Nala

Kaushal Nala

½ 0 ½ 1.0 1.5 2.0 2.5 5.0 Km

SCALE

TOPOSHEET INDEX

28° 45'	77° 00'		28° 45'
53 D/14 (H43W14)		53 H/02 (H43X2)	
28° 30'			28° 30'
53 D/15 (H43W15)		53 H/03 (H43X3)	
28° 15'	77° 00'		28° 15'

OSM SHEET MAP OF SHOPPING MALL COMPLEX/COMMERCIAL BUILDING "MALL OF INDIA" AT BLOCK-V, DLF CITY PHASE-II, SECTOR-25A, GURGAON, HARYANA

निर्यात के लिए नहीं NOT FOR EXPORT

ओपन सीरीज मानचित्र

सं० एच43एक्स2

1:50,000 पैमाना

1 उत्तर, दिल्ली. 2 उत्तर पूर्व, दिल्ली. 3 पूर्व, दिल्ली. 4 मध्य, दिल्ली. 5 नई दिल्ली, दिल्ली. 6 रेवाड़ी, हरियाणा. 7 मेवात, हरियाणा. 8 मेरठ, उत्तर प्रदेश.

तीय सर्वेक्षण विभाग SURVEY OF INDIA

प्रथम संस्करण 2011. मूल्य : ₹ 118 /-

Revised rate Rs. 118/-

रूढ़ प्रतीक

भी मार्ग : नाका सहित; पुल सहित; दूरी दर्शक पत्थर सहित
, पक्की : महत्वानुसार
, दोहरा मार्ग : महत्वानुसार
सड़क, बैलगाड़ी मार्ग, लद्दू मार्ग दर्रा सहित, पैदल पथ
तत में मार्ग सहित; असाप्त, नहर
पक्का या पत्थरी का, मिट्टी का बंधिका
सूखी, जलधारा सहित; द्वीप व चट्टानों सहित. ज्वारीय नदी
ग्न चट्टानें: उथला जल, दलदल, नड़
पक्के; कच्चे, नलकूप, जल–स्रोत तालाब : बारहमासी, सूखा
: सडक या रेत; तालाब, कटी भूमि
र्ण, बडी लाइन : दोहरी; इकहरी स्टेशन सहित, निर्माणाधीन
र्ण, अन्य लाइनें : दोहरी; इकहरी दूरी दर्शक पत्थर सहित; निर्माणाधीन
ज लाइन या ट्रामलाइन, भट्ठा, कटान सहित सुरंग
ब रेखाएं उप–आकृतियों सहित, चट्टानी ढाले, भृगु/ढांग
ती आकृतियां :(1)समतल,(2)बालू की पहाड़ियां;ज्वारीय, (3)स्थानान्तरी टिब्बे
अध्या गांव : आबाद; उजाड़, किला
न : स्थायी; अस्थायी, मीनार, पुरावशेष
ष छतरी, गिरजाघर, मस्जिद, ईदगाह, मकबरा, कब्रें
ह स्तम्भ, प्रकाशपोत, बॉय : प्रकाशयुक्त, प्रकाशरहितीन, लंगरगाह
प्पाली पर चढी बेल, घास, झाड़ी
पंक्तिया ताड़; अन्य, केला; शंकु वृक्ष, बांस, अन्य वृक्ष
कृषि; अरण्य, सर्वेक्षित वृक्ष
अन्तर्राष्ट्रीय
राज्य : सीमांकित; असीमांकित
जिला; परगना, तहसील या तालुक, वन
स्तम्भ : सर्वेक्षित; अनुपलब्ध
दयां, त्रिकोणीयत : स्टेशन; प्वाइंट; सम्निकट
विंहन : ज्योतीय; तरंगिमरी, नहरी
घर, तार घर, ऊपरी टंकी
न गृह या निरीक्षण बंगला, सर्किट हाऊस, थाना
र स्थल, वन : आरक्षित, संरक्षित
र नाम : प्रशासनिक; क्षेत्रीय या जनजातीय
त्सालय, औषद्यालय, पशु चिकित्सालय / औषद्यालय
अड्डा; हेली पैड, पर्यटक स्थल
न लाइन : सर्वेक्षित पाइलॉनों सहित, असर्वेक्षित खम्भों सहित
रेल स्टेशन सहित, निर्माणाधीन

	कि स्थ	आ च
	कि क री	ना गा

संदर्भ

रा रा 10 राष्ट्रीय राजमार्ग सं० 10

टिप्पणियां

ढ़ियां मीटरों में व भारतीय माध्य समुद्र तल से ऊपर हैं.
ण रेखायें दर्शाये गये मानों के सन्निकट हैं.
भवन नामों सहित काले रंग में दिखाए गए हैं.
क्षेत्र में सूखे दिखाए गए तालाबों में सामान्यतः जुलाई से मार्च तक जल रहता है.
समस्त शीट में अनेक नलकूप हैं, केवल महत्वपूर्ण को ही दिखाया गया है.
शीट में कच्ची सड़कें और बैलगाड़ी मार्ग सामान्यतः सूखे मौसम में मोटर योग्य हैं. नहरों के साथ–साथ
ग उपयोग करने के लिए सिंचाई प्राधिकारियों की अनुमति आवश्यक है.
शीट में त्रिकोणीयत ऊंचाइयां और समोच्च रेखाओं को स्फिरिट लेविल किए गए तल चिह्नों की ऊंचाई से
ोजित नहीं किया गया है. और वे संभवतः पूर्णरूप से उनके अनुसार नहीं हैं.
थर परिवर्तन के कारण समुचा नदी का प्रवाह परिवर्तित हो सकता है.
ाल सूचना के अभाव के कारण दिल्ली राज्य में समस्त तहसील सीमाएं नहीं दिखाई गई हैं तथा जो तहसील
एं दर्शायी गई हैं उन्हें संबंधित राज्य सरकार के प्राधिकारियों द्वारा प्रमाणित नहीं किया गया है.
ली और हरियाणा राज्यों के मध्य राज्य सीमा का भूमि पर उसी प्रकार से सर्वेक्षण किया गया है जैसे स्थानीय
धिकारियों ने बताया, किन्तु इन्हें संबंधित सरकार के प्राधिकारियों ने सत्यापित नहीं किया है.
शेक ऊंचाई .हत्ता, खड़े ढाल की नीचे से ऊपर तक की लगभग ऊंचाई मीटरों में दर्शाती है.

संकलन सूचक

क 2001–02 एवं 2002–03 के दौरान 1:25,000 से सर्वेक्षित और मुख्य ब्योरों का 2005–06 में शीघ्र सत्यापन किया गया है.

प्रक्षेप – यूटीएम आधार – डब्ल्यूजीएस 84

2005 में चुम्बकीय दिशान्तर भौगोलिक उत्तर से लगभग $\frac{1}{2}^{\circ}$ पूर्व में.
(वार्षिक वृद्धि लगभग 1')

500 मी से 1 सेंमी 1:50,000 2 सेंमी से 1 किमी

3 किलोमीटर 2 1 0 500 1000

समोच्च रेखांतराल 10 मीटर

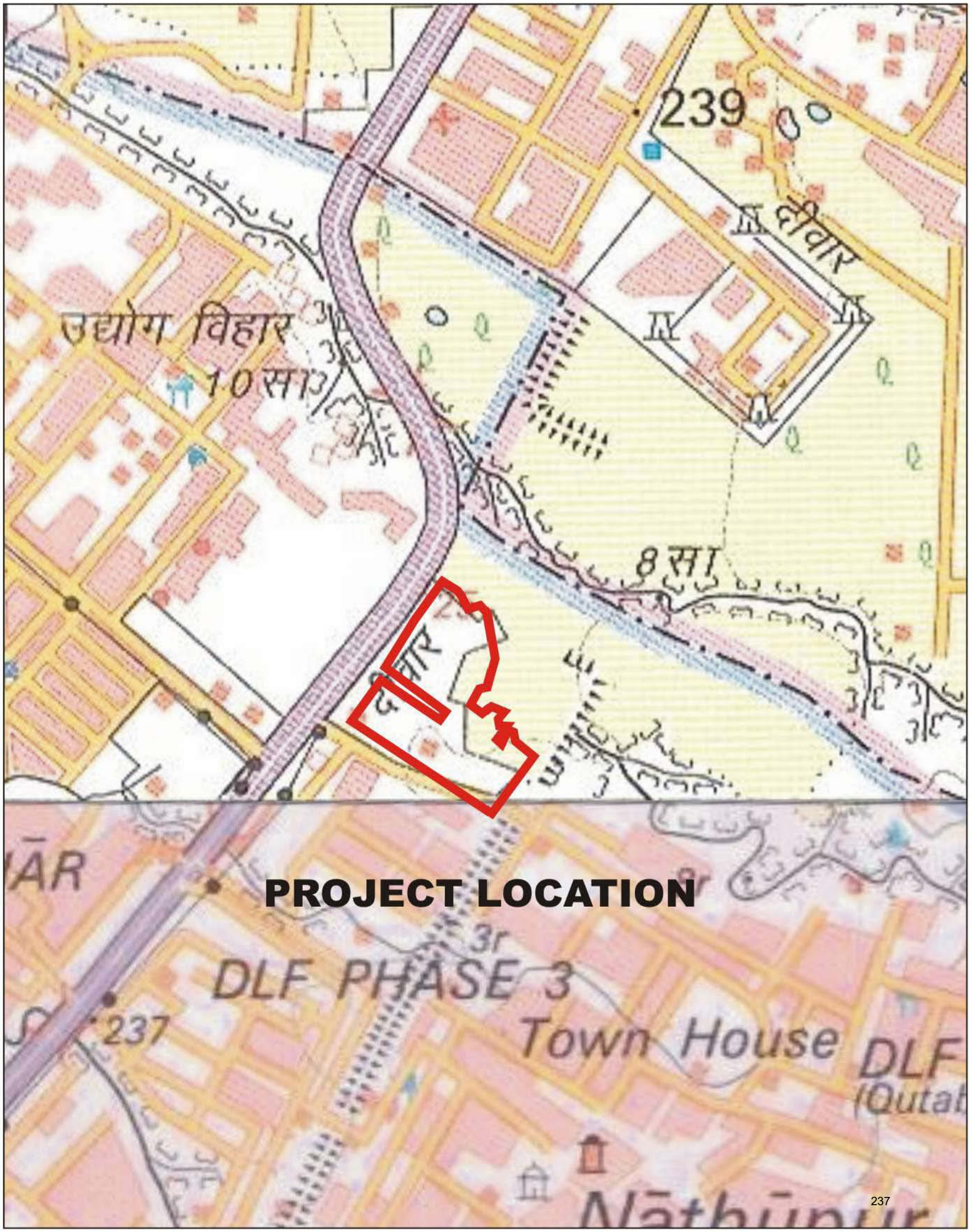
कृपया इस मानचित्र के बारे में अधिक जानकारी के लिए सम्पर्क करें
अपर महासर्वेक्षक
सर्वेक्षण (हवाई) एवं दिल्ली भू–स्थानिक आंकड़ा केन्द्र
भारतीय सर्वेक्षण विभाग, पश्चिम खंड 4, रामाकृष्णा पुरम,
नई दिल्ली

वेबसाइट – www.surveyofindia.gov.in

राष्ट्रीय मानचित्रण संस्था, भारतीय सर्वेक्षण विभाग की लिखित

PROJECT LOCATION

PROJECT LAYOUT ON OSM SHEET MAP OF SHOPPING MALL COMPLEX/ COMMERCIAL BUILDING "MALL OF INDIA" AT BLOCK-V, DLF CITY PHASE-II, SECTOR-25A, GURGAON, HARYANA



Enclosure 7: Site Plan

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

DRG NO.

1 TYPE	2 FLOOR	3 AREA IN SQM. / UNIT FLOOR	4 NO. OF FLOORS	5 TOTAL FAR/ ALL FLOOR	6 PROPOSED FAR/ ALL TOWER	7 TOTAL BUILT UP OF ONE FLOOR	8 TOTAL BUILT UP OF ALL FLOOR	9 TOTAL BUILT UP AREA OF ALL TOWER	10 NON FAR AREA-BASEMENT AREA PER	11 TOTAL GROUND COVERAGE OF ALL TOWER	12 REFUGE TERRACE OPEN TO SKY	13 FLOOR HIGHT	14 TOTAL HEIGHT
RETAIL	LOWER GROUND FLOOR	62262.717	1	62262.717		62262.717	62262.717		4196.656		-	6 MTR. (3 mts above the ground)	
	UPPER GROUND FLOOR	60726.125	1	60726.125		60726.125	60726.125		2197.794		-	5 MTR.	
	1ST FLOOR	60488.237	1	60488.237		60488.237	60488.237		2854.309		-	4.5 MTR.	
	2ND FLOOR	60488.237	1	60488.237	396460.535	60488.237	60488.237	396460.535	2854.309		-	4.5 MTR.	-
	3RD FLOOR	55442.644	1	55442.644		55442.644	55442.644		2642.496		-	4.5 MTR.	
	4TH FLOOR	51056.302	1	51056.302		51056.302	51056.302		2345.440		4213.548	4.5 MTR.	
	5TH FLOOR	46033.304	1	46033.304		46033.304	46033.304		2139.355		-	4.5 MTR.	
OFFICE BLOCK – 1	6TH TO 8TH FLOOR	3127.972	3	9383.916		3127.972	9383.916		2927.397	62262.717	-	4.2 MTR.	49.1 + 0.M PARAPET WALL
OFFICE BLOCK – 2	6TH TO 8TH FLOOR	3147.706	3	9440.118		3147.706	9440.118		2927.397		-	4.2 MTR.	49.1 + 0.M PARAPET WALL
OFFICE BLOCK – 3	6TH TO 8TH FLOOR	2965.402	3	8897.206		2965.402	8897.206		2927.397		-	4.2 MTR.	49.1 + 0.M PARAPET WALL
OFFICE BLOCK – 4	6TH TO 8TH FLOOR	3266.667	3	9779.601		3266.667	9779.601		2927.397		-	4.2 MTR.	49.1 + 0.M PARAPET WALL
OFFICE BLOCK – 5	6TH & 7TH FLOOR	3160.083	2	6320.166	61739.706	3160.083	6320.166	61739.706	2326.754		-	4.2 MTR.	38.9 + 0.M PARAPET WALL
OFFICE BLOCK – 6	6TH & 7TH FLOOR	3162.083	2	6324.166		3162.083	6324.166		2326.754		-	4.2 MTR.	38.9 + 0.M PARAPET WALL
OFFICE BLOCK – 7	6TH & 7TH FLOOR	2597.597	2	5195.194		2597.597	5195.194		2326.754		-	4.2 MTR.	38.9 + 0.M PARAPET WALL
OFFICE BLOCK – 8	6TH & 7TH FLOOR	3203.169	2	6406.338		3203.169	6406.338		2326.754		-	4.2 MTR.	38.9 + 0.M PARAPET WALL
BASEMENT-1							101045.567	101045.567					
BASEMENT-2							102747.852	102747.852					
BASEMENT-3							102836.218	102836.218	-				
BASEMENT-4							101039.508	101039.508					
BASEMENT-5							102836.218	102836.218					
NON FAR AREA(SEPTY+MACHINE ROOM)								-	7746.582				
TOTAL					458200.525			969706.788	47623.613	62262.717			

AREA OF SITE AS PER ZONING = 32.36 Acres or 130956.066 Sqm.
PERMISSIBLE F.A.R. (@350) = 458346 Sqm.
FAR ACHIEVED = 458200.525 Sqm.
= 458200.525 X 100 = 349.88%
130956.066

PERMISSIBLE GROUND COVERAGE @50% = 65478 Sqm.

PROPOSED GROUND COVERAGE = 62262.717 Sqm
= 62262.717 X 100 = 47.544%
130956.066

CARPET AREA 90% OF THE FAR AREA = 458200.525X90 = 412380.47
100

REQUIRED PARKING @ 1CAR/50 SQM = 8247.6 OR SAY 8248 CARS

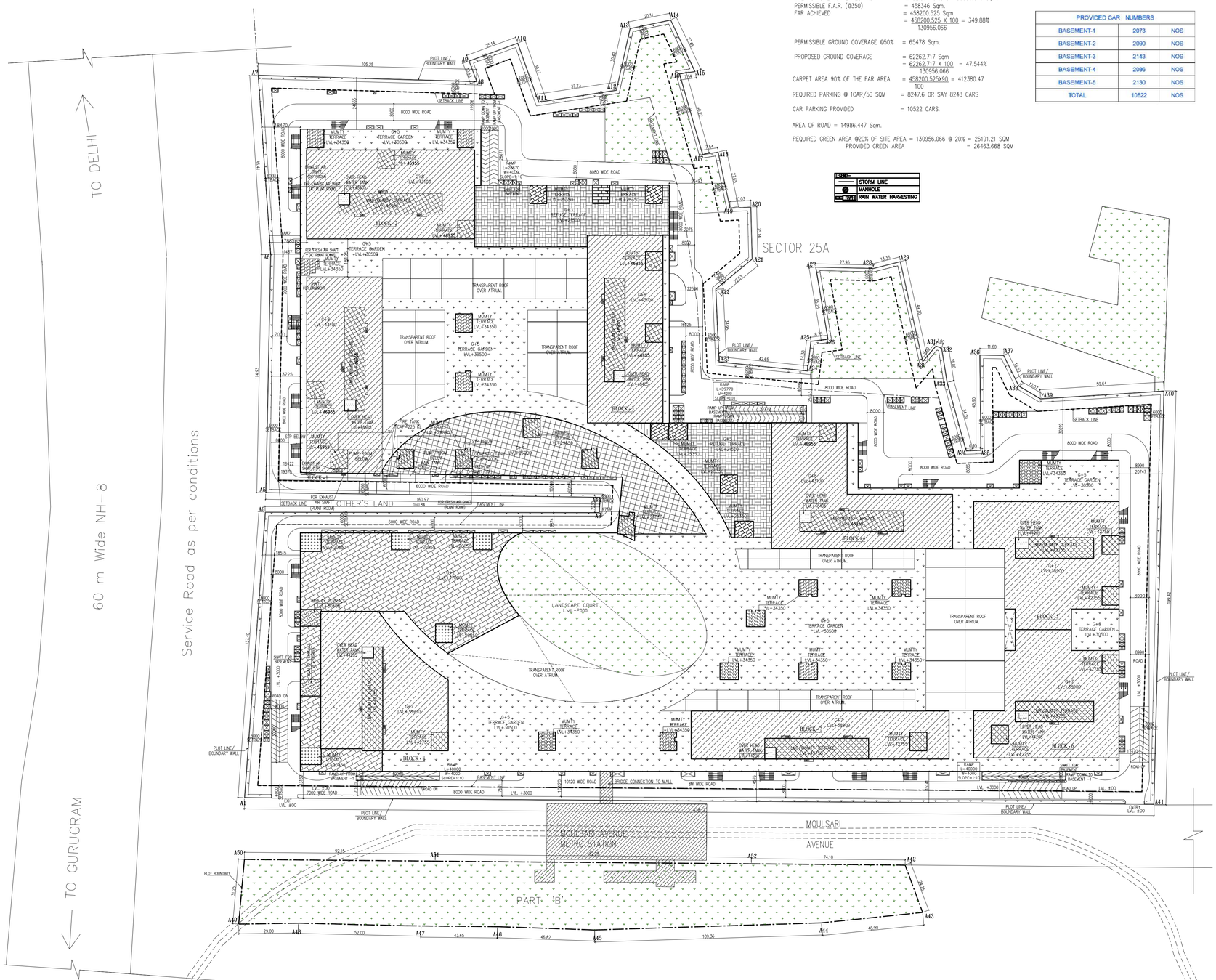
CAR PARKING PROVIDED = 10522 CARS.

AREA OF ROAD = 14986.447 Sqm.

REQUIRED GREEN AREA @20% OF SITE AREA = 130956.066 @ 20% = 26191.21 SQM
PROVIDED GREEN AREA = 26463.668 SQM

PROVIDED CAR NUMBERS		
BASEMENT-1	2073	NOS
BASEMENT-2	2090	NOS
BASEMENT-3	2143	NOS
BASEMENT-4	2086	NOS
BASEMENT-5	2130	NOS
TOTAL	10522	NOS

STORM LINE
MANHOLE
RAIN WATER HARVESTING



RSMS ARCHITECTS

RSMS ARCHITECTS PVT. LTD.
69,Nora Niwas Bhawani Kunj
(Behind D2), Vasant Kunj,
New Delhi–110070.
Tel.: 011–26898616,26898617
www.rsms–arch.com

Project:

PROPOSED SUBMISSION OF 32.36 ACRES SITE OF SHOPPING/ COMMERCIAL IN BLOCK–V, SECTOR–25A, OF DLF CITY, DLF PHASE–III, GURGAON, HARYANA.

OWNER: DLF — DLF CITY CENTRE LTD.
(THE SHOPPING MALL COMPLEX ARJUN MARG, DLF CITY,PHASE–I ,GURGAON – 122002 , HARYANA.)

DRAWING TITLE:–

SITE PLAN

REVISION	JOB NO:–	DRG NO. ST-01(E)	NORTH:– N
	SCALE:–	DATE:– 01–01–2018	
FILE:–	DEALT BY:–	CHECKED BY:	APPROVED BY:–
ARCHITECT'S SEAL & SIGNATURE		OWNER'S SEAL & SIGNATURE	

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

Enclosure 8: Traffic Report & Joint Study Report with HUDA

DLF
BUILDING INDIA

COST SHARING AGREEMENT

BETWEEN

HARYANA URBAN DEVELOPMENT AUTHORITY (HUDA), PANCHKULA HAVING ITS HEAD OFFICE AT C-3, SECTOR-6, PANCHKULA

AND

M/S DLF LIMITED HAVING ITS REGISTERED OFFICE AT SHOPPING MALL, 3RD FLOOR, ARJUN MARG, DLF CITY PHASE-I, GURGAON-122002 (HARYANA) AND CORPORATE OFFICE AT DLF CENTRE, SANSAD MARG, NEW DELHI-110001

DLF Limited

(Authorized Signatory)

Administrator
HUDA, Gurgaon

DLF BUILDING INDIA

COST SHARING AGREEMENT

TABLE OF CONTENTS

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c)	Article-II	Interpretation	5 to 5
d)	Article-III	Scope of work under this Agreement	5 to 7
e)	Article-IV	Time period, Regular Monitoring of progress	7 to 8
f)	Article-V	Funding of Project, Payments to executing agencies, Consultants and Cost sharing by HUDA	8 to 10
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k)	Article-X	Maintenance and Handing over facilities and assets to HUDA	14 to 14
l)	Article-XI	Infrastructure created will be property of HUDA/ Government of Haryana	14 to 15
m)	Article-XII	Indemnify against claims & Insurance covers	15 to 15
n)	Article-XIII	Books & Records	16 to 16
o)	Article-XIV	HUDA may not be liable for any damage	16 to 16
p)	Article-XV	Settlement of disputes	16 to 17
q)	Article-XVI	Termination	17 to 18
r)	Article-XVII	Entry into Force of this Agreement and other conditions	18 to 19
2.	**Appendixes 1 to 8**		20 to 81
3.	**Agreement Supporting Documents**		82 to 93
3.	**Detail Project Report (DPR)**		
i)	**Volume-I (Main Report)**		1 to 160
ii)	**Volume-II (Rate Analysis, Cost Estimate & Bill of quantities)**		1 to 263
iii)	**Volume-III (Drawings) Part-A Road Work**		1 to 85
	Part-B Structures		1 to 51

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3: ENGINEERING SURVEYS, INVESTIGATION

3.1 General

Surveys and investigations form the backbone of any DPR study. The primary data collected from the site not only provides a clear picture of the site conditions, but also gives us a good insight about the deficiencies and the scope for improvements. The primary data coupled with the good engineering acumen would lead to giving apt and economical recommendations for the improvements.

The proposed engineering surveys and investigations have been carried out on the Project Road conforming to MORT&H/IRC/BIS Specifications/ Codes to generate adequate database for preparation of the most appropriate proposal.

Following are the various engineering surveys and investigations carried out :

- Soil survey and investigation;
- Pavement Condition Survey;
- Pavement Deflection (BBD) Survey;
- Axle Load Survey;
- Culvert Inventory and Condition Survey;
- Inventory of Bridges and Vented Causeways;
- Condition Survey of Bridge and Vented Causeways;

The basic data collected and analysed for different engineering surveys are being presented separately in Appendices to this Report. Brief description of each survey has been discussed in the following paragraphs.

3.1.1 Soil survey and investigation

Basic objective of sub grade investigation is to determine the suitability of existing sub-grade to support the pavement for widening and new road works. The strength and the level of compaction of the existing sub-grade were determined by conducting various tests in the field and laboratory.

The soil along the alignment of project road is fairly homogenous in nature and character. The results of the survey are summarized in following sections;

Soil Classification

The soils are predominantly found to be sandy-silt type, which are suitable for embankment / sub-grade and do not pose any problem in construction.

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Soil along the alignment predominately belongs to sandy-silt with low plasticity as per IS classification. Based on strength of soil along the project road, the project road can be divided into ten homogenous sections and CBR values for the design of flexible pavement basing on these ratings are given in Table 3.2

Laboratory California Bearing Ratio (CBR)

Laboratory California Bearing Ratio (CBR) tests were conducted at specified locations. In general, the test procedure was as per IS: AASTHO – T193 (Part 99).

Recommendations for CBR Results

Table 3.1 : CBR Values: The result Of Five Laboratories CBR tests are presented below:

CBR No.	Location	Soil Type	Recommended CBR Value
2	Cyber Green	Sandy silt	8.0
4	Sikandarpur Rotary	Sandy silt	7.5
6	Opposite Del Building	Sandy silt	7.7
8	IBIS Hotel	Sandy silt	7.3
10	Opposite to Smiriti Appts.	Silty Sand	7.2

3.1.2 Pavement Condition Survey

Condition of pavement was evaluated based on the field measurements. Primary pavement surface distress indicators of cracking (narrow and wide), patching, raveling and potholing were estimated visually coupled with physical measurements. The extent of each distress has been visually estimated for every 200m length of the road in terms of percentage area affected and then averaged for a kilometer length. Rutting was measured as rut depth in wheel path using a 3-metre straight edge. This measurement was done simultaneously with BBD measurements. Apart from this, edge breaking was also noted in terms of percentage length of road affected and shoulder drop-off in terms of depth in millimeters.

The visual condition survey data was recorded at site, this includes information on visible deficiencies and ongoing / recent improvements. The condition survey inventory has been prepared by adopting the following details:

- Pothole area as percentage of total surface area
- Ravelling area as percentage of total surface area
- Patching as percentage of total surface area

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Table 3.2: Detail of CBR Test

CBR No.	Location	Type of soil	Field Bulk Density gm/c	Field Water Content %	Field dry Density gm/c	Gradation Analysis				Atterberg limit		Plasticity Index
						Gravel %	Sand %	Silt %	Clay %	Liquid Limit (%)	Plastic Limit (%)	
CBR- 2	Cyber Green	Sandy Silt	1.70	9.5	1.55	7	40	45	8	24.8	16.5	8.3
CBR- 3	Opposite to Building No 12	Sandy Silt	1.66	7.4	1.54	5	37	48	10	25.4	16.9	8.5
CBR-4	Sikanderpur Rotary	Sandy Silt	1.62	5.7	1.53	0	37	52	11	26.0	17.4	8.6
CBR- 5	Near DLF Mega Mall	Sandy Silt	1.65	5.1	1.57	0	45	47	8	24.7	16.4	8.3
CBR- 6	Opposite DEL Building	Sandy Silt	1.64	6.4	1.54	0	43	48	9	25.0	16.6	8.4
CBR- 7	India Times building	Sandy Silt	1.60	10.4	1.45	8	39	43	10	25.4	16.8	8.6
CBR -8	IBIS Hotel	Sandy Silt	1.63	9.1	1.49	4	42	46	8	24.9	16.5	8.4
CBR -9	Vatika Tower	Sandy Silt	1.64	8.2	1.51	0	76	24	0	NON PLASTIC		-
CBR -10	Smirti Apartments	Sandy Silt	1.61	7.5	1.50	0	79	21	0	NON PLASTIC		-
CBR-11	Kendriya Vidhyala Crossing	Sandy Silt	1.61	9.	1.47	0	78	22	0	NON PLASTIC		-

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- Shoulder condition

Inspection of survey reveals that the pavement condition varies for each Km stretch. Taking all the pavement distress into consideration, overall pavement condition is shown in Table. The sections visualised have wide cracking at some locations as well as hair cracks at few of the places. Most sections, crossings and intersections are damaged. All variety of cracking pattern has been observed mostly along wheel paths as detailed in pavement condition survey data. There are sections which show severe surface distresses with poor riding quality. Road side drains are weak at some sections which lead to damaging of shoulders. Paved shoulders were covered with bushes and grass along some sections making there use, less effective.

3.1.3 Pavement Deflection (Benkelman Beam Deflection Test)

The rebound deflection measurements using Benkelman Beam method in accordance to CGRA procedure given in IRC- 81:1997 ("Guidelines for strengthening of Flexible Road Pavement using Benkelman Beam Deflection Technique") is adopted along the Project Road. Pavement and air temperatures were recorded for the purpose of temperature correction. Sub grade moisture data was also obtained from field moisture measurements in the test pits for applying seasonal corrections to deflection measurements.

3.1.3.1 Analysis of BBD Data

- ***Temperature Correction***

  Pavement temperatures at the time of BBD measurements were more than the standard temperature (IRC) of 35°C. Since the asphalt wearing course of the pavement is in a satisfactory condition and the thickness is more than 75mm on the average, appropriate temperature corrections were made based on the recommendations of IRC: 81-1997.

- ***Correction for Seasonal Variation***

  Moisture variation correction has been applied in accordance with IRC: 81-1997. The subgrade soil classification, PI and field moisture content have been utilized for this purpose.

  As it is not practical to have different overlay thickness from kilometre to kilometre, adjacent lengths have been combined for treatment. Using the method of cumulative differences to the corrected deflection data, demarcation of homogeneous sections has been done. The

characteristic deflections for the respective homogeneous sections were calculated as the mean plus 2 standard deviations.

The Project Road has been divided into 4 homogeneous segments based on cumulative difference approach. Control test data on each homogeneous section has been corrected for temperature and seasonal variation. The corrected data used to calculate mean, standard deviation and characteristic deflection for each homogeneous section. List of homogeneous sections are shown in Table 3.3. It is found that the maximum and minimum characteristic deflection is 0.99 mm and 1.55 mm respectively which is shown in Table 3.4.

Table 3.3: List of Homogeneous Sections

S No.	Chainage	Length (km.)
1	km 0.0 – km 1.2	1.20
2	km 1.2 – km 3.4	2.20
3	km 3.4 – km 6.6	3.20
4	km 6.6 - km 9.3	2.70

Table 3.4 : Summary of Analyzed data for Characteristic Deflection

1. With Lowest Moisture Content 9.70 %

S.No.	Section		Mean Deflection	Standard Deviation	Characteristics Deflection	Pavement Condition
	From	To				
Right Carriageway						
1	0.000	1.200	0.72	0.33	1.38	Good
2	1.200	3.400	0.51	0.24	0.99	Good
3	3.400	6.600	0.56	0.32	1.20	Good
4	6.600	9.300	0.62	0.33	1.29	Poor

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Left Carriageway						
1	0.000	1.200	0.61	0.25	1.14	Good
2	1.200	3.400	0.70	0.31	1.32	Good
3	3.400	6.600	0.58	0.33	1.24	Good
4	6.600	9.300	0.79	0.38	1.55	Poor

3.1.4 Axle Load Survey

The Axle load survey in both the directions is carried out at 30 metre wide road near Golf Course in the project road stretch on a random sample basis for trucks, LCVs (both empty and loaded) for 24 hours. The survey was carried out on 3 June'08 using axle load pads. Axle load survey analysis has been performed as per IRC standards for the assessment of Vehicle Damage Factor (VDF). The result of the axle load survey is presented in Table 3.5 below.

Table 3.5: Axle Load Survey

Estimation of Mode-Wise Vehicle Damage Factor				
MODE	GURGAON-FARIDABAD		FARIDABAD-GURGAON	
	VEHICLES	VDF	VEHICLES	VDF
LCV	66	0.14	34	0.19
Truck	41	4.53	21	2.76
3 Axle	17	9.14	5	0.17
MAV	15	11.38	4	0.21
Tractor	7	0.87	3	0.01
Bus	1	0.97	0	0.00

3.1.5 Culvert Inventory

There are 10 numbers of Culverts along the project corridor consisting of 2 no's Hume pipe type and 8 No's slab type/box type Culverts. Based on site inventory, the salient features of existing culverts are described in Table3.6 below:

Table 3.6: Salient Features of existing Culverts

Culvert No.	Landmark	Type	Status
1	On NH-8 Near Media Centre	Box Culvert	Functional
2	On NH-8 near Shankar Chowk	Two cell RCC box Culvert	Functional
3	In Cyber City (Near Red light)	Hume Pipe	Functional but have inadequate capacity and to be abandoned
4	In Cyber City near Belvedere park at Road turn	Hume Pipe	Functional
5	Near Petrol Pump	RCC Box	Functional
6	Culvert near Gate no. 2 of DLF Phase I	Hume Pipe	Non functional
7	Culvert near Gate no. 4 of DLF Phase I	Hume pipe	Functional
8	Near sector 27/42 Circle	RCC Box	Functional
9	Near Phase V Junction	RCC Box	Functional
10	Court Plaza	RCC Box	Non functional
11	Court Plaza	RCC Box	Functional
12	After Sector 55/56 Circle	RCC Box	Functional
13	Near building no 10 on NH8	Box culvert	Functional

Table 3.6.1: Details of Hume Pipe type Culverts

Hume Pipe Type

S.No.	Culvert No.	Vent Size NO. x Dia. (mm)	Total Numbers of pipes (Section viz)
1	7	1 x 800	1
2	3	1 x 700	1
3	6	1 x 700	1
4	4	1 x 900	1

Table 3.6.2: Details of Slab / Box type Culverts

Slab / Box Culverts

S. No.	Culvert No.	Exiting Length across Road Width (L) in m	B (Span) (m)	D (depth) m
1	1	44.9	3.0	2.0
2	2	44.9	2 x 3.0	3.0
3	5	58.5	5.0	2.5
4	8	32.8	6.0	3.5
5	9	32.1	5.25	4.0
6	10	36.9	4.50	3.5
7	11	32.4	4.7	3.5
8	12	40.1	4.20	3.0
9	14	57.0	6.10	3.0

Extension work of Culvert at Phase V (road 60 m /30 m) and Central Plaza along sector 55/56 intersection is under progress. Extension of DLF phase V culverts has been completed. One side extension has been remaining for culvert sector 55/56 intersection.

Culvert no 10 found located at adjacent to Culvert near Central Plaza (Culvert no. 11) & is non functional/inadequate and may be abandoned. However during road improvement work this culvert is to be dismantled.

3.2 Topographical Surveys

3.2.1 Introduction

The main purpose of the topographical survey was to produce digital 3D base maps showing the existing terrain including all existing road features including houses, telephone line, OFC, Electric Line, monuments, place of worship, cremation ground, Utility line, Trees, hand pumps and other features covering the entire right of way of the road. The digital 3D base maps are the basis for preparation of the Digital Terrain Models (DTM) required for the road design.

The scope of work was to carry out the survey work from Toll Plaza along National highway to DLF Square Building along National Highway, NH-8 to Sikanderpur & from Sikanderpur roundabout to Sector-55/56.

The values of the points referred were:

Pt. ID.	Easting	Northing	Elevation
M350	2313.4819	-9624.7551	247.327
M351	2269.6430	-9616.1213	247.033
M352	2239.1192	-9641.9419	246.362

The Control work from Sikanderpur to Sector-55/56 was done by close traversing method. Traverse stations were fixed on pillars of size 300mm x 300mm x 450mm with 20mm round steel bar in the centre. All traverse stations can be used as benchmarks.

3.2.2 Methodology

The following activities were scheduled for successful completion of assignment:

- Fixing of Permanent Control pillars along the proposed route alignment.
- Transfer of Bench Mark
- Traversing for Control Points along the route alignment.
- Topographical Survey along the route alignment for a width of 100m covering all the above ground details.

3.2.3 Fixing of Permanent Control pillars along the proposed route alignment

Permanent control pillars of size 300mm x 300mm x 450mm with a 20mm round steel bar in the centre, were cast along the proposed route alignment on both sides of the existing road. The pillars were spaced at about 75 – 100m apart.

3.2.4 Transfer of Bench Mark

Transfer of Bench Mark from Sikanderpur Metro alignment crossing was conducted using Auto Level. The Bench mark was taken from DMRC site at Sikanderpur at Pillar No. M352 with RL as 246.362 m.Closed circuit levelling was done using Auto level AC-2S of Nikon make, by double

Tertiary Levelling method connecting all the pillars along the proposed route alignment. All the pillars thus connected may be treated as bench marks.

3.2.5 Traversing for Control Points along the route alignment

A closed traverse was run from help 1" accuracy Total Station NIKON DTM 552. Two sets of Horizontal and Vertical angles were taken on both left and right faces. Similarly two sets of distances were recorded. Thus four sets of XYZ co-ordinates were recorded and mean of all four sets was taken for each control point.

3.2.6 Control Points

Topographical Survey along the route alignment was conducted for a width of 100m covering all the above ground details. Topographical survey was conducted using the control points established as shown in **Annexure enclosed below :**

Annexure

List of Control Points Established along the Sector road from NH-8 to Sector-55/56 Gurgaon

Pt. ID	Final Co-ordinates		
	Easting	Northing	Elevation
M350	2313.4819	-9624.7551	247.327
M352	2239.1192	-9641.9419	246.362
P1	2196.8654	-9672.9725	246.425
P2	2195.2456	-9727.7734	246.245
P3	2158.8087	-9735.6672	246.287
P4	2169.007	-9832.6916	246.180
P5	2136.7032	-9900.362	246.387
P6	2143.6768	-9993.6323	246.270
P7	2112.0096	-10069.4325	246.477
P8	2146.5256	-10137.4543	246.494
P9	2114.3286	-10218.3569	246.624
P10	2148.689	-10275.6013	246.816
P11	2116.5195	-10349.1344	246.916

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P12	2151.3702	-10425.7708	246.920
P13	2119.3941	-10494.6497	246.919
P14	2153.5571	-10544.5418	246.787
P15	2121.5831	-10631.5528	246.691
P16/ V12	2155.9324	-10698.0118	246.735
P17/ V11	2123.927	-10764.179	246.697
P18	2157.9436	-10823.7288	246.507
P19	2126.1272	-10892.1587	246.732
P20	2161.4398	-10940.9218	246.846
P21	2144.8052	-11041.7039	247.129
P22	2191.8712	-11122.8167	247.166
P23	2177.9763	-11247.0937	247.858
P24	2232.8336	-11375.8432	247.895
P25	2213.8451	-11482.0377	248.385
P26	2264.5218	-11569.8090	248.587
P27	2236.8886	-11643.6669	248.686
P28	2302.1360	-11775.5616	248.365
P29	2283.7961	-11842.3900	248.212
P31	2330.7455	-12023.2929	248.346
P32	2392.3057	-12115.1992	248.311
P33	2379.9217	-12214.3054	248.375
P34	2445.3068	-12317.8457	248.426
P35	2434.9189	-12420.2581	248.511
P36	2490.9318	-12497.0664	248.357
P37	2475.9216	-12597.1597	248.597
P38	2530.4169	-12666.3935	248.673
P39	2519.8267	-12763.8928	248.731
P40	2580.4482	-12843.0961	249.036
P41	2570.0572	-12934.1399	249.076
P42	2641.1820	-13043.8765	248.858
P43	2627.3882	-13123.3150	248.780
P44	2714.8931	-13285.3894	249.131
P45	2711.3863	-13396.9176	249.490
P45A	2757.2576	-13502.1456	0.000
P46	2764.5738	-13601.3600	249.717
P47	2829.0184	-13705.0228	249.585

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P48	2817.9406	-13805.5466	249.271
P49	2873.1311	-13872.5487	248.841
P50	2877.2793	-14002.2078	247.773
P51	2958.5141	-14127.9337	247.741
P52	2965.5867	-14266.5137	248.873
P53	3032.7864	-14351.7318	247.994
P54	3034.4161	-14475.4753	248.703
P55	3098.3931	-14561.0286	248.813
P56	3090.5542	-14676.4807	248.658
P57	3149.1765	-14755.7891	248.690
P58	3144.6363	-14884.8924	248.121
P59	3214.5177	-15002.7975	247.980
P60	3200.9771	-15098.9872	247.315
P61	3221.1989	-15276.4307	247.669
P62	3238.2397	-15395.0069	246.854
P63	3236.7757	-15520.8501	245.923
P64	3234.6432	-15677.5901	245.713
P65	3233.6860	-15826.9137	245.565
P66	3233.7779	-15961.3195	245.667
P67	3228.2516	-16126.7370	244.499
P68	3225.9892	-16241.4808	243.441
P69	3228.2168	-16379.1287	242.178
P70	3226.9902	-16513.1982	241.001

All the ground features were collected viz. Road edge, footpath, electric poles, trees, median, fence, drains, spot levels etc. were picked up using Total station. Three teams of expert professionals with 3 Total stations were deployed for this job.

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4: TRAFFIC SURVEY AND ANALYSIS

4.0 General

Traffic surveys and their analysis are important factors for planning and designing of the road network. The results of their analysis will form inputs for designing the pavement, geometric elements, planning and designing of wayside amenities, and for financial viability analysis.

This section presents quantum, location and the methodology for conducting traffic surveys and undertaking the appropriate analysis. The results of the analysis will form the inputs for developing capacity augmentation proposals, determining the extent of improvement of intersections, financial analysis, and designing amenities and facilities for pedestrians.

The traffic study aims at estimating the base year daily traffic and travel characteristics on the project corridor and forecasting the Average Annual Daily Traffic (AADT) for the project horizon year considering various constituent streams namely normal, induced and diverted traffic on the project road. Various aspects of the traffic study are presented in subsequent sections of this report.

The methodology that has been followed is in accordance with IRC: SP: 19-2001

4.1 Objectives

The main objectives of the traffic surveys are:

- To assess the volume of traffic flow and their characteristics.
- To assess the origin and destination of passenger flow by mode.

4.1.1 Turning Movement Surveys at Junctions

Classified turning movement counts were carried out at seven selected junctions to find out the peak hour directional movements, composition of traffic and total approach volumes. The surveys were conducted on a fair weather working day for a period of 16 hours (6-am to 10-pm) at the identified junction locations.

The surveys also enabled us to quantify the variation of traffic volumes during different hours of the day.

The survey has established the traffic composition and passenger movement by various modes and relative importance of the links in the total road network. The survey locations have been planned in such a manner to enable the entire traffic on identified road links to be covered.

The survey locations are illustrated in Figure 4.1 and summarised in Table 4.1.

Table 4.1: List of Survey Locations

Sr .No	Locations
1	Junction of NH-8 and Golf Link Road
2	Junction of Golf Link Road and road leading to DLF Phase –III in front of Belverde Park.
3	Sikandarpur Junction
4	Bristal Chowk (Junction)
5	Junction between Golf Link road 30 m wide road dividing Sector 42 & 43
6.	Junction in front of Genpact building near Golf Course, DLF Phase-V.

The different sizes and characteristics of the various vehicle types are accounted for by conversion into passenger car units (pcu's). PCU factors as prescribed in the IRC code are presented in Table 4.2.

Table 4.2: PCU Factors adopted for the study

Sr.N	Mode	PCU Value	Sr.No	Mode	PCU Value
1	Car/Jeep/Van	1.0	9	MAV	4.0
2	2-wheeler	0.75	10	Tractor	1.4
3	3-wheeler	1.0	11	Tractor Trailor	4.0
4	Bus	3.0	12	Cycle	0.5
5	Mini-bus	2.2	13	Cycle	1.5
6	LCV/Tempo	1.4	14	Handcart	2.0
7	Truck 2 Axle	2.2	15	Animal Drawn	2.0
8	Truck 3 Axle	2.2			

From the survey information we can determine the traffic intensity, traffic composition, hourly and daily variations and peak hour characteristics.

4.1.2 Traffic Flows at Mid-Block Locations

The traffic volumes at mid-block locations were calculated from the turning movement counts and are presented in Table 4.3. It can be observed from the table that the 16 hour traffic volumes vary from 107836 vehicles (99176 PCUs) at Sikandarpur junction to 45500 vehicles (44694 PCUs) at Sector 42 & 43 junction. The existing traffic volumes at MG road, sector road near the DLF Gateway tower are already in excess of their capacity and therefore require immediate capacity augmentation.

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Table 4.3: Traffic volumes at mid Blocks

Location	Passenger Vehicles	Goods Vehicles	Slow Moving	Total	PCUs
In front of Gateway Tower	66528	987	1647	69162	68897
In front of Belvedere Park.	86074	1167	6884	94125	73061
Near Sikandarpur Junction	99473	2003	6360	107836	99176
Near Bristol Chowk Junction	57889	1365	1760	61014	58580
Near Sector 42 & 43 Junction	40011	1112	4377	45500	44694
In front of Genpact building DLF Phase-V.	45461	1232	2854	49547	46385

4.1.3 Peak Hour Traffic

The peak hour traffic volumes at the appropriate intersection locations are presented in **Table 4.4**. The morning peak hour volumes vary from 5226 vehicles (5216 PCUs) at Belvedere Park junction to 14597 vehicles (14787 PCUs) on Golf Link road junction with NH-8 near Gateway Tower. The evening peak hour volumes vary from 4510 vehicles (4326 PCUs) at Belvedere Park junction to 15246 vehicles (15950 PCUs) at Golf Link road junction with NH-8 near Gateway tower MG Road.

Table 4.4: Peak Hour Traffic Characteristics

Location	Peak	Traffic Volume	PCUs	Percentage of Total Traffic
Near Gateway Tower	Morning	14597	14787	5.94
	Evening	15246	15950	5.85
Belvedere Park Junction	Morning	5226	5216	6.48
	Evening	4510	4326	5.37
Sikandarpur Junction	Morning	9432	8965	5.58
	Evening	10616	9766	6.08
Bristol Chowk Junction	Morning	7874	7644	6.65
	Evening	7896	7624	6.66
Sector 42 & 43 Junction	Morning	6865	5601	6.02
	Evening	9772	8472	9.11
Genpact building junction DLF Phase-V.	Morning	6348	6244	7.00
	Evening	7036	6656	7.34

Table 4.5 shows the traffic composition at intersection locations during the peak hour. This differs slightly from the daily traffic trends. The table depicts that the share of bus traffic in peak hour varies from 0.55% to 1.34%. Similarly, the share of slow passenger traffic in peak hour varies from 2.0% to 15.4%. The share of fast passenger traffic varies from 77% at Belvedere

Park to 97% near Genpact building, DLF phase-VSector-55/56 Road (Near DT Mall) with an average of about 89%.

Table 4.5: Peak Hour Traffic Composition at Mid-Block Locations

S.No	Name of Location	Peak Hour Duration	Fast Passenger	Bus	Goods	Slow	Total
1	In front of Gateway tower	8:45 – 9:45	4291	70	74	796	5231
		17:45 – 18:45	4063	62	65	776	4966
2	Near Junction of Belvedere Park	9:00 – 10:00	2637	10	17	739	3403
		21:00 -22:00	2607	12	13	627	3259
3	Near Sikandarpur Junction	8:45 – 9:45	5262	35	206	173	5676
		18:15 – 19:15	6279	112	103	749	7243
4	Near Bristol Chowk Junction	10:00 – 11:00	4915	23	129	266	5333
		19:30 – 20:30	4966	22	131	285	5404
5	Near Sector 42 & 43 Junction	8:45 – 9:45	2911	13	40	454	3418
		19:30 – 20:30	4854	8	134	335	5331
6	Near Genpact building DLF Phase-V.	9:15 – 10:15	4180	0	37	53	4270
		19:00 – 20:00	4419	15	65	283	4782

4.1.4 Hourly Variation of Traffic:

The hourly variation of Traffic at mid-blocks is depicted in **Figure 4.2 to 4.8.** The graph shows the morning and evening traffic peaks that correspond to commuter traffic travelling to and from Gurgaon.

4.1.5 Modal Split

The modal split (composition of traffic by various vehicle types) at mid-blocks is presented in **Table 4.6** and **Figure 4.8**. The share of cars/jeeps varies from 61% to 75% while 2-wheelers vary from 16.81% to 27.15%. The auto rickshaw percentage constitutes about 0.5% to 3% of the total traffic, while buses constitute 0.4% to 3.19% of traffic. The modal split shows the large dependence of people on private modes of transport as the public transport and IPT system is not developed in the Gurgaon.

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Table 4.6: Modal Split at Intersections

Location/Mode	Car, Jeep & van	2-wheeler	Auto	Bus	Truck	LCV/ Tempo	Tractor	Tractor Trailer	Slow moving
Junction of NH-8 and Golf Link Road	142071	31816	1979	2918	1401	4068	58	90	4840
Near Junction of Belvedere Park	42177	14178	271	253	185	993	34	100	9183
Sikandarpur Junction	117932	50977	3968	1522	1121	2440	113	413	9286
Bristol Chowk Junction	66072	23240	1460	1081	1235	1210	86	142	3548
Sector 42 & 43 Junction	51313	22786	2041	485	600	795	119	246	5551
Junction fronting genpact building near Golf Course, DLF Phase-V.	45589	16099	2363	645	2147	2146	145	308	3697

4.1.6 Traffic Volumes at Intersections

The traffic volume at intersection locations is presented in Table 4.7. It can be observed from the table that the 16 hour traffic volume varies from 39,440 vehicles (37,450 PCUs) to 1,97,443 vehicles (1,90,530 PCUs). The highest traffic volumes were observed on the NH-8 service road adjacent to DLF Gateway Tower.

Table 4.7: Daily Traffic Volume (16 Hours) at Intersection

S.No.	Name of Intersection	*Vehicle*	PCU,s
1	Junction of NH-8 and Golf Link Road	197443	190830
2	Near Junction of Belvedere Park	86380	64404
3	Sikandarpur Junction	138354	128461
4	Bristol Chowk Junction	98019	91903
5	Sector 42 & 43 Junction	83924	74374
6	Junction fronting Genpact building near Golf Course, DLF Phase-V.	71724	72545

4.1.7 Traffic Forecast

Terminology

We first provide definitions for the terminology used in this report.

- **Current Traffic**: this represents the existing traffic that would use the improved highway when it is opened to traffic.
- **Diverted Traffic**: traffic attracted to the improved highway or lost to alternative routes when the improvements are completed.
- **Induced Traffic**: increase in traffic as a result of the increased demand for transport, if any, induced by the improvement of the highway.
- **Development Traffic**: increase in traffic, if any, that may arise from improvements on adjacent land over and above the development which would have taken place had the new or improved highway not been constructed.
- **Normal Growth**: increase in traffic which would in any event occur if no improvement is made; this increase being the result of the general increase in the number and usage of motor vehicles.

Various techniques have been adopted for estimating growth factors and future traffic in transport studies such as time series growth using previous traffic counts, historical growth in vehicle registration, and elasticity of transport demand. The transport demand elasticity model is widely used for estimating traffic as it develops the relationship between factors such as per capita income, gross domestic products, population with traffic. We have opted to use the transport demand elasticity model for this study.

4.1.8 Transport Demand Elasticity Model

This method of long-term traffic forecasting incorporates analyses of some of the key socio-economic characteristics in the road influence area and their anticipated rates of change during the study period, these characteristics being taken as indicators for the future growth of traffic.

The growth rates for normal traffic obtained from this approach take some account of the following factors which affect future traffic levels;

- The prospective growth in the economy;
- The estimated elasticity of demand for transport, and
- Changes in the structure of the vehicle fleet, for example vehicle productivity and changes in the inter-modal share of passenger and freight demand.

4.2. Econometric Modeling

Econometric modeling considers measurable demographics and socio-economic parameters such as population, per capita income (PCI), Net State Domestic Product

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(NSDP), Gross Domestic Product (GDP),etc. to establish a relationship with transport demand elasticity. The study corridor is an important link connecting Delhi and Faridabad, and therefore the impact of Delhi and Haryana were considered to arrive at the project specific growth rates. Growth rates of Net State Domestic Product, Per Capita Income and Population for Delhi and Haryana are presented in **Table 4.8.**

Table 4.8: Growth Rates of Economic Indicators

State/ Economic indicator	NSDP	Per Capita Income	Population
Delhi	8.7	4.05	3.62
Haryana	6.03	3.1	2.37

Transport demand elasticities for the study corridor were estimated by establishing a relationship between corridor traffic growth as the dependent variable, and growth in independent variables like NSDP, Population, Per Capita Income and GDP.

i) The methodology involved was based on the criteria of least square technique. State level data was used for the independent variables, while traffic on the project road was used as the dependent variable. The expression used is as follows:

$Log_e P = A_o + A_1 \times Log_e (I)$

Where,

P = Traffic volume

I = Economic Indicator such as PCI, GDP, NSDP

A_o = Regression constant

A_1 = Regression (Elasticity) coefficient

ii) The Elasticity Coefficients are presented in **Table 4.9.**

Table 4.9 : Elasticity Coefficients for different vehicles

Mode/ State	Delhi	Haryana	Economic Indicator
Cars	1.75	3.57	PCI
Buses	2.1	2.9	POP
Trucks	0.52	1.62	NSDP
2-Wheelers	1.06	3.85	PCI

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iii) In the case of freight vehicles, the result based on NSDP shows a better fit as compared to the result based on weighted income from agriculture and manufacturing. Elasticity values for the project road network have been calculated based on the percentage of trip ends in Delhi and Haryana. Adopted elasticity values for the project road are presented in **Table 4.10**

Table 4.10 : Estimated Future Elasticity Values

Vehicle Type	Adopted for Study			
	Upto 2012	Upto 2017	Upto 2022	Beyond 2022
Cars	2.33	2.10	1.88	1.70
Buses	2.16	1.85	1.67	1.50
Trucks	1.05	1.00	0.9	0.8
Two Wheeler	3.48	3.13	2.82	2.54

4.3 Traffic Calculations

Diverted Traffic

4.3.1 Gurgaon is fast emerging as an IT city on the national horizon. The town is spread over an area of about 100 sq Km. The current population is about 7.0 lacs and is projected to reach about 16.0 lacs by 2011 and about 37.0 lacs in 2021. The project road would serve sectors which are currently partly developed and would be fully developed in the near future.

4.3.2 Based on the population and level of development along with the probability of using the project roads the trips generated from the project influence area were assigned to the project roads sections and are presented in **Table 4.11.**

Table 4.11 : Estimated Generated traffic on project links

Link	Cars	Three Wheelers	Two Wheelers	Buses
From Junction of Sector 55/ 56 to Jun. 51/54	2694	1673	3346	92
From Sector 51/54 junction to 42/43 junction	6741	4185	8367	242
From 42/43 Junction to Bristol Chowk	3375	2097	4186	127
From Bristol Chowk to Cyber City	19540	2173	53	243

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4.3.3 The commercial developments which would have the greatest impact on the project road network are Cyber City, Mall of India and commercial/offices in Sector 52/53. About 35000 vehicles would be generated from these developments and the biggest impact would be on the section between Sikanderpur and NH-8 junction.

4.4 Growth Rates

The growth rates for the baseline traffic flows are defined in **Table 4.12** A growth rate of 2% has been applied to generated / induced traffic.

Table 4.12 : Projected Growth Rates for project road network

Year/Mode	Cars	Buses	Trucks	Two Wheelers
2008-2012	7.75	6.25	6.50	8.50
2013-2017	7.32	5.01	6.50	8.03
2018-2022	6.92	4.50	6.14	7.59
Beyond 2022	5.92	4.50	5.19	6.49

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Figure 4.1: Traffic Survey Locations

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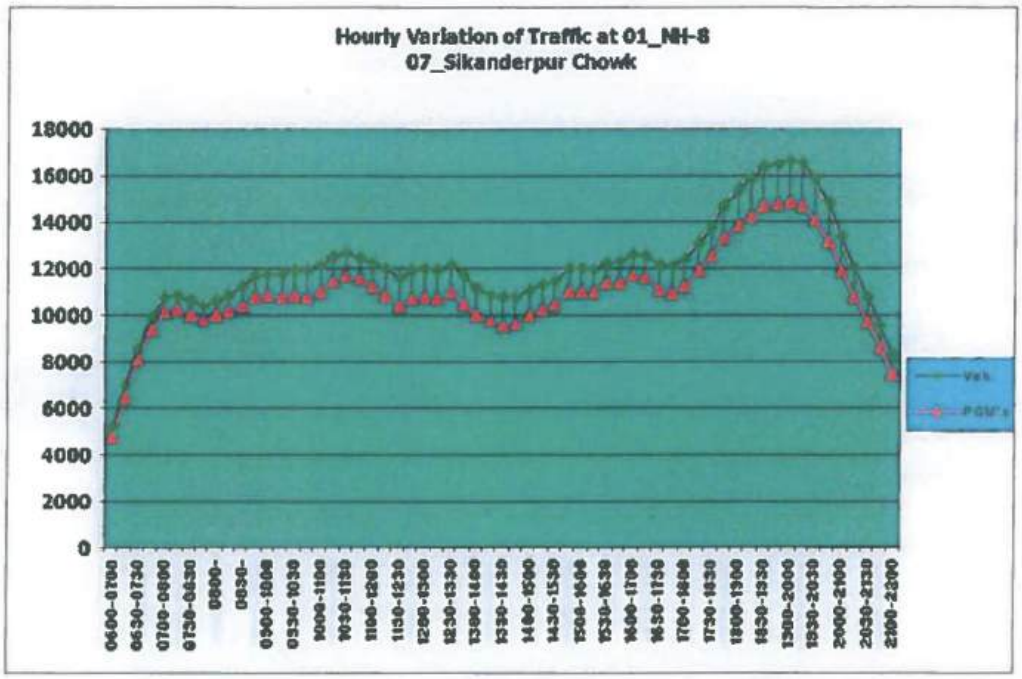

Fig 4.4: Hourly variation at Sikandarpur Junction

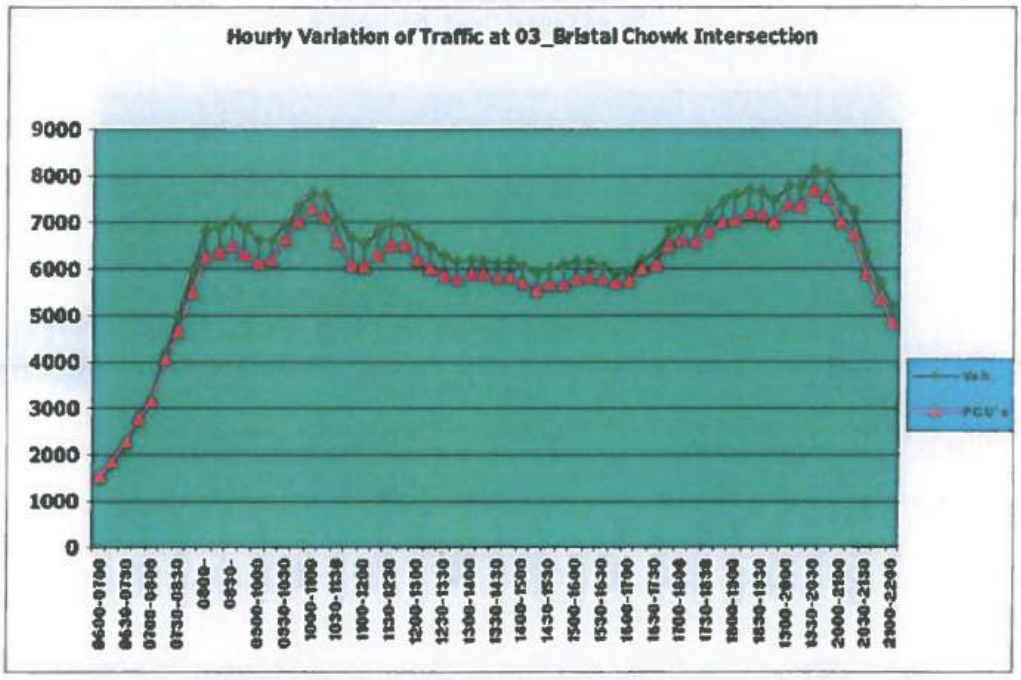

Fig 4.5: Hourly variation at Bristal chowk junction

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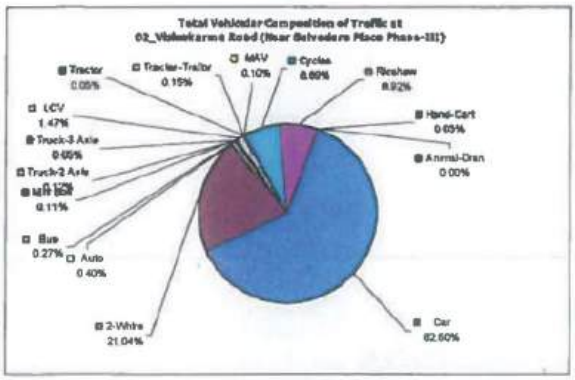
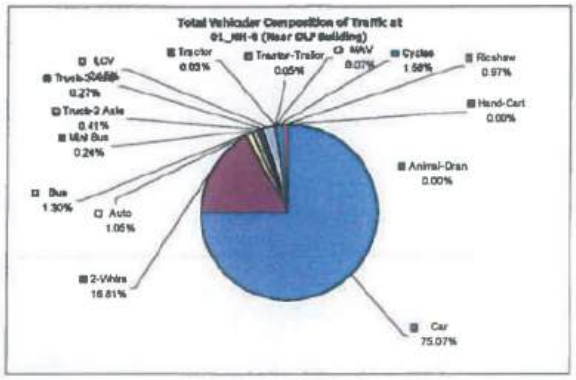
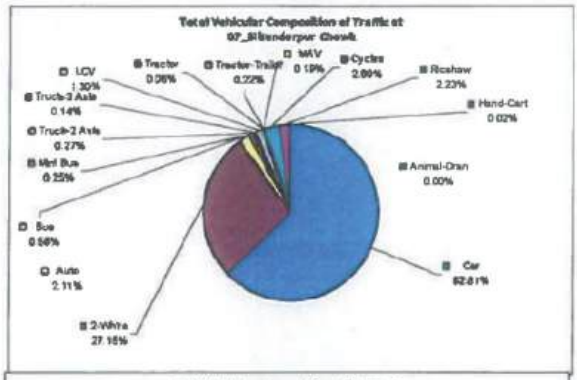
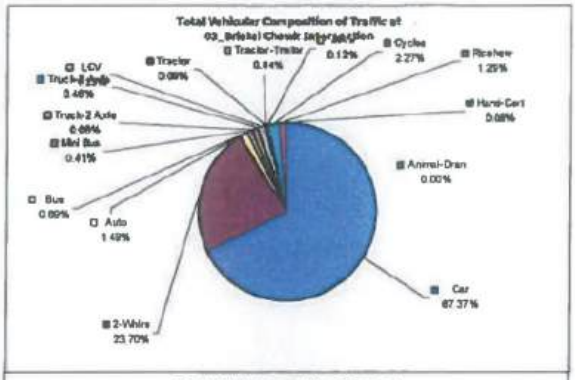
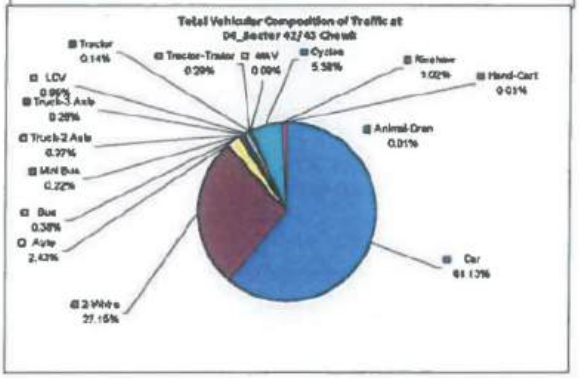
Figure 4.8: Composition of Traffic at mid blocks

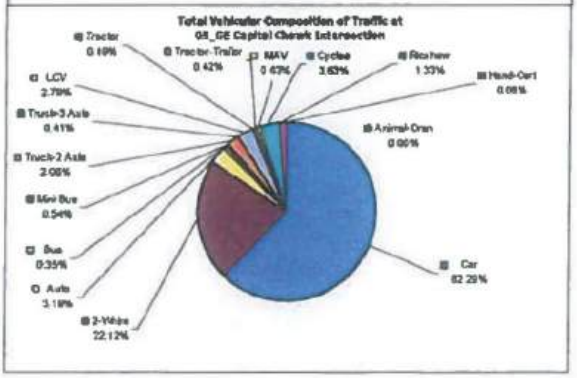












SAI

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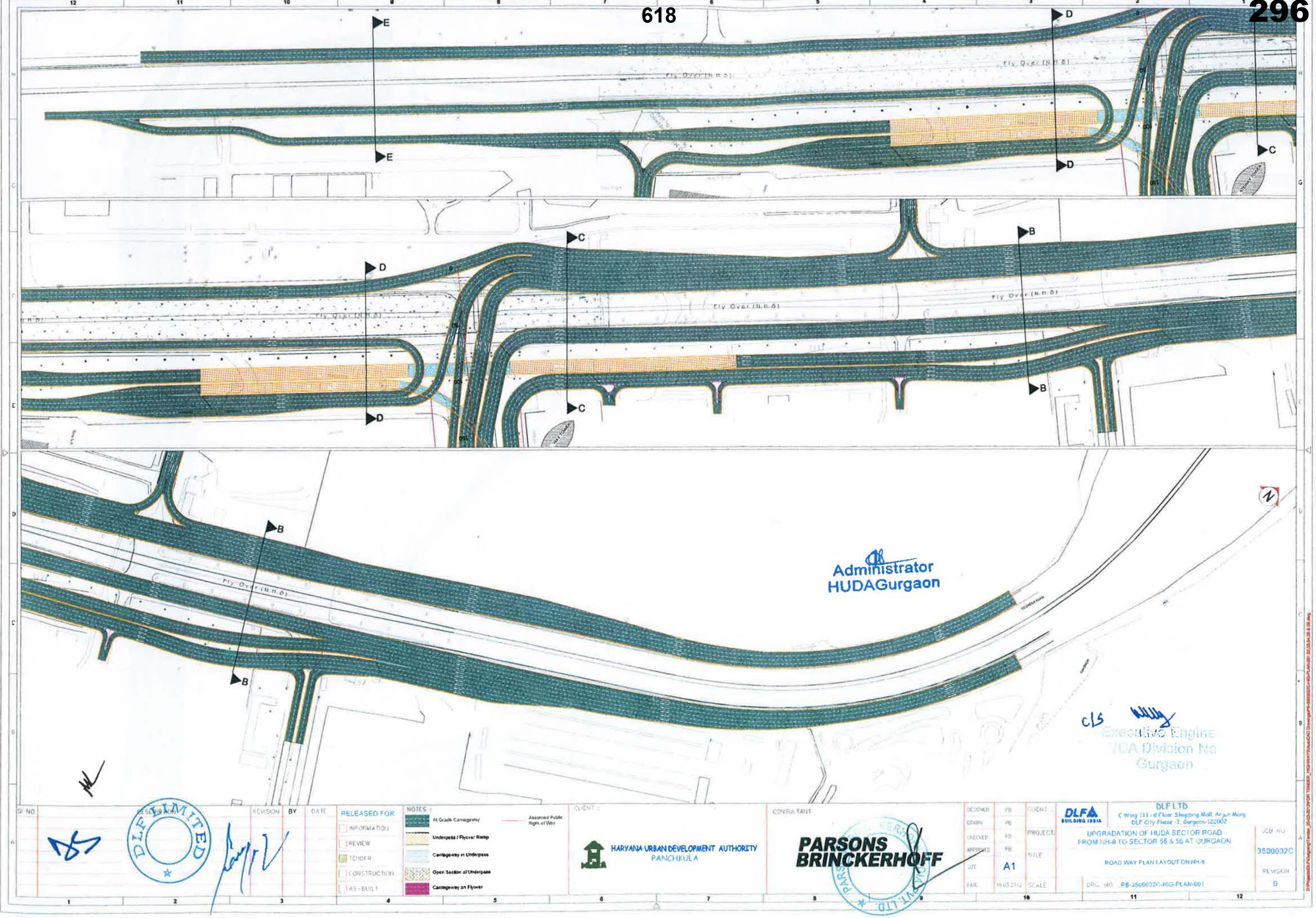


SI NO	DESCRIPTION	REVISION	BY	DATE

RELEASED FOR
- [ ] INFORMATION
- [ ] REVIEW
- [ ] TENDER
- [ ] CONSTRUCTION
- [ ] AS-BUILT

NOTES :
- At Grade Carriageway
- Assumed Public Right of Way
- Underpass / Flyover Ramp
- Carriageway in Underpass
- Open Section at Underpass
- Carriageway on Flyover

CLIENT : HARYANA URBAN DEVELOPMENT AUTHORITY PANCHKULA

CONSULTANT : PARSONS BRINCKERHOFF

DESIGNED	PB	CLIENT	DLF BUILDING INDIA
DRAWN	PB		
CHECKED	PB	PROJECT	UPGRADATION OF HUDA SECTOR ROAD FROM NH-8 TO SECTOR 55 & 56 AT GURGAON
APPROVED	PB	TITLE	ROAD WAY PLAN LAYOUT ON NH-8
SIZE	A1		
DATE	16/03/2012	SCALE	DRG. NO. PB-3500032C-RIG-PLAN-001

DLF LTD
C Wing (III rd Floor Shopping Mall, Arjun Marg
DLF City Phase -1, Gurgaon-122002

JOB NO 3500032C
REVISION 0

Enclosure 9: Landscape Plan

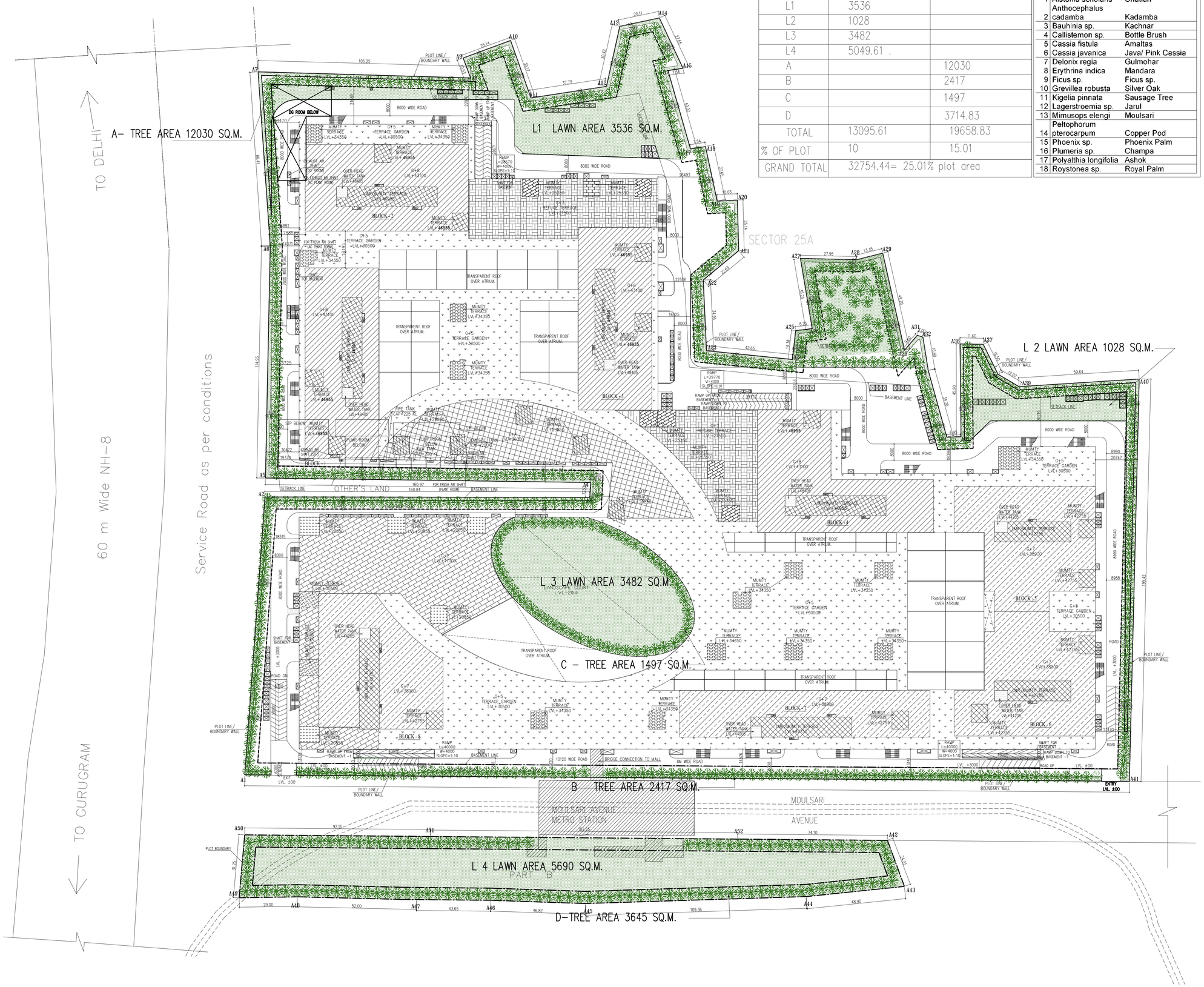
DRG NO. ST-01(E)

REQUIRED GREEN AREA @ 25% OF SITE AREA= 130956.066 @25% = 32739.01 SQMT
PROPOSED GREEN AREA = 32754.44 SQMT

Area Mark	LAWN Area (SQM.)	TREE Area (SQM.)
L1	3536	
L2	1028	
L3	3482	
L4	5049.61 .	
A		12030
B		2417
C		1497
D		3714.83
TOTAL	13095.61	19658.83
% OF PLOT	10	15.01
GRAND TOTAL	32754.44= 25.01% plot area	

List of Proposed Tree Species

SN	Botanical Name	Common/Local Name
1	Alstonia scholaris	Chatian
2	Anthocephalus cadamba	Kadamba
3	Bauhinia sp.	Kachnar
4	Callistemon sp.	Bottle Brush
5	Cassia fistula	Amaltas
6	Cassia javanica	Java/ Pink Cassia
7	Delonix regia	Gulmohar
8	Erythrina indica	Mandara
9	Ficus sp.	Ficus sp.
10	Grevillea robusta	Silver Oak
11	Kigelia pinnata	Sausage Tree
12	Lagerstroemia sp.	Jarul
13	Mimusops elengi	Moulsari
14	Peltophorum pterocarpum	Copper Pod
15	Phoenix sp.	Phoenix Palm
16	Plumeria sp.	Champa
17	Polyalthia longifolia	Ashok
18	Roystonea sp.	Royal Palm



RSMS ARCHITECTS PVT. LTD.
69,Nora Niwas Bhawani Kunj
(Behind D2), Vasant Kunj,
New Delhi–110070.
Tel.: 011–26898616,26898617
www.rsms–arch.com

Project:

PROPOSED SUBMISSION OF 32.36 ACRES SITE OF SHOPPING/ COMMERCIAL IN BLOCK–V, SECTOR–25A, OF DLF CITY, DLF PHASE–III, GURGAON, HARYANA.

OWNER: DLF CITY CENTRE LTD.
(THE SHOPPING MALL COMPLEX ,ARJUN MARG, DLF CITY,PHASE–I ,GURGAON – 122002 , HARYANA.)

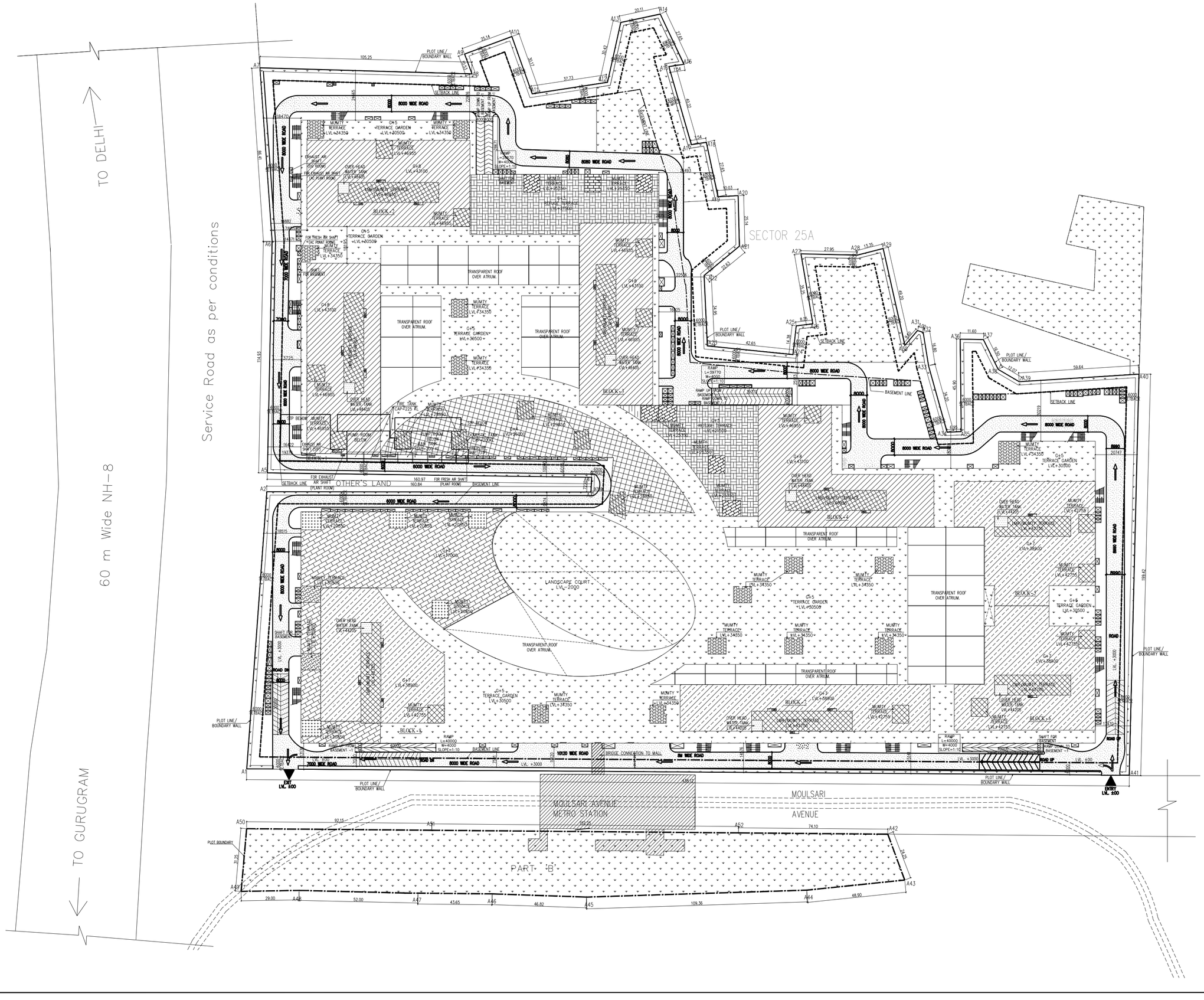
DRAWING TITLE:–

SITE PLAN
(LANDSCAPE PLAN)

REVISION	JOB NO:–	DRG NO. ST-01(L)	NORTH:– N
	SCALE:– 1:600	DATE:– 01–01–2018	
FILE:–	DEALT BY:–	CHECKED BY:	APPROVED BY:–
ARCHITECT'S SEAL & SIGNATURE		OWNER'S SEAL & SIGNATURE	

Enclosure 10: Traffic circulation Plan

DRG NO.	ST-01(E)



RSMS ARCHITECTS

RSMS ARCHITECTS PVT. LTD.
69,Nora Niwas Bhawani Kunj
(Behind D2), Vasant Kunj,
New Delhi-110070.
Tel.: 011-26898616,26898617
www.rsms-arch.com

Project:

PROPOSED SUBMISSION OF 32.36 ACRES SITE OF SHOPPING/ COMMERCIAL IN BLOCK-V, SECTOR-25A, OF DLF CITY, DLF PHASE-III, GURGAON, HARYANA.

OWNER: DLF

DLF CITY CENTRE LTD.
(THE SHOPPING MALL COMPLEX ,ARJUN MARG, DLF CITY,PHASE-I ,GURGAON - 122002 , HARYANA.)

DRAWING TITLE: -

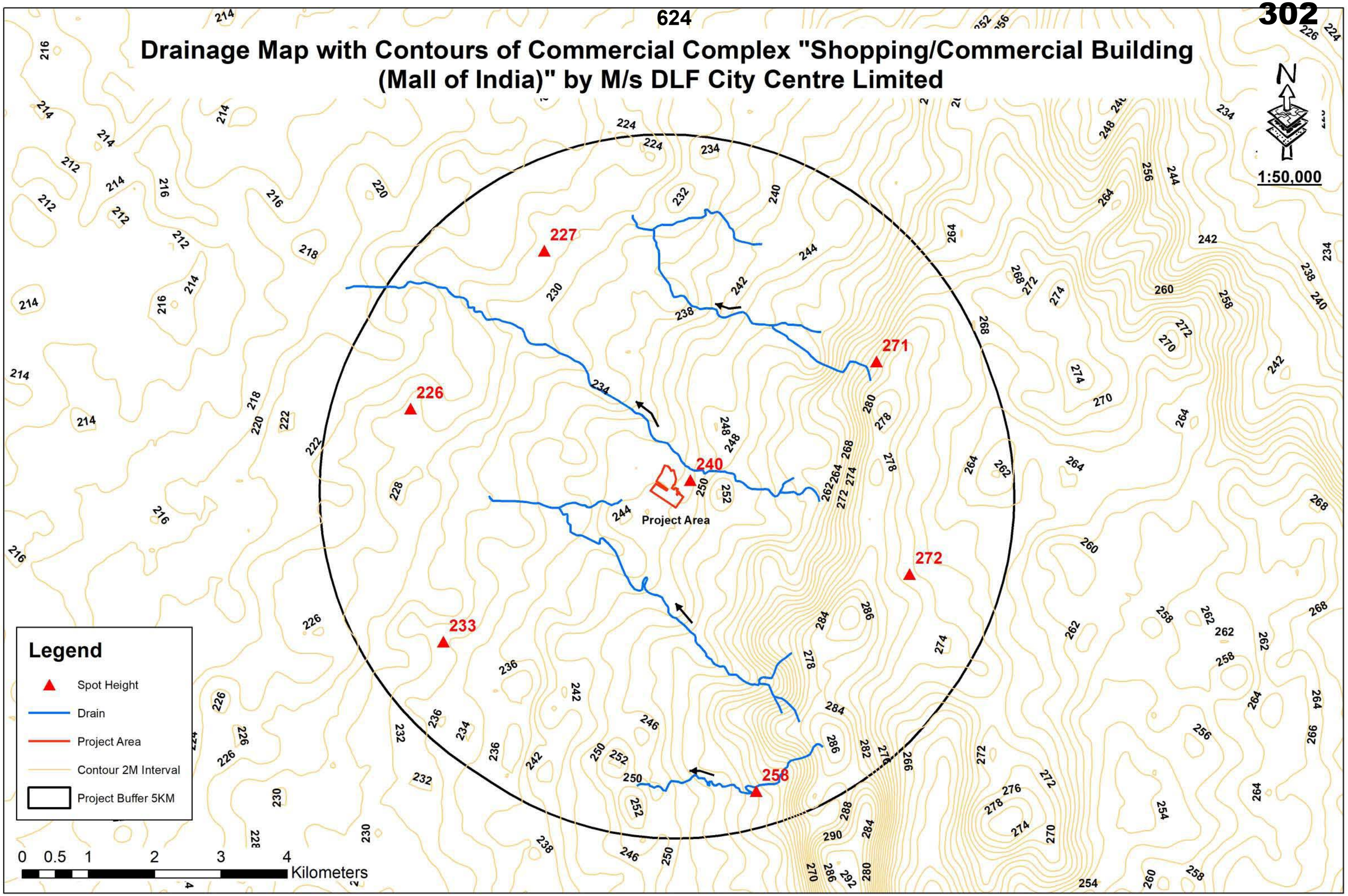
SITE PLAN
(ROAD+ TRAFFIC CIRCULATION)

REVISION	JOB NO: -	DRG NO. ST-01(R)	NORTH: -
	SCALE: - 1:600	DATE: - 01-01-2018	
FILE: -	DEALT BY: -	CHECKED BY:	APPROVED BY: -

ARCHITECT'S SEAL & SIGNATURE	OWNER'S SEAL & SIGNATURE

Enclosure 11: Drainage Plan

Drainage Map with Contours of Commercial Complex "Shopping/Commercial Building (Mall of India)" by M/s DLF City Centre Limited



As the contours show the slope of the area is towards North West Direction of the project area. The drainage of the area will flow towards North West.

Enclosure 12: Aravalli NOC

प्रेषक,

उपायुक्त, गुरूग्राम।

सेवा मे,

M /S DLF Limited
Gateway Tower(5th Floor),
DLF City, Phase-III,
Gurugram-122002.

क्रमांक 01 /एम.बी दिनांक 04/01/2018

विषयः- **Report of the Tehsildar Gurgaon through the office of DC that the land of the project does not fall under MOEF Aravali Notification S.O. 319(E) dated 7th May 1992: NOC Forest and Aravalli Certificate for Proposed Shopping/Commercial Building "Mall of India" in Block-V, DLF City Phase-III, Sector-25A, Village Nathupur, Gurgaon, Haryana.**

उपरोक्त विषय पर आपके प्रार्थना पत्र के संदर्भ में।

विषयोक्त मामले में आपके प्रार्थना पत्र पर इस कार्यालय द्वारा तहसीलदार, गुरूग्राम व उप वन संरक्षक, गुरूग्राम से रिर्पोट ली गई। जो निम्न प्रकार है।

तहसीलदार, गुरूग्राम ने अपने पत्र क्रमाकं 1933/ओ0के0 दिनाक 28.08.2017 की रिर्पोट अनुसार मौजा नाथूपुर तह0 व जिला गुरूग्राम के संदर्भ मे खसरा न0 8(0-8-0), 9(0-18-0), 14(0-9-0), 15(0-18-0), 31/2(0-13-0), 424(2-18-0), 436(1-6-0), 21(0-17-0), 22(0-14-0), 23(0-19-0), 25(0-1-0) की मैसर्ज डी0एल0एफ0 होम डवलपर्स लिमिटेड व खसरा न0 18/1(0-5-10), 19(0-11-0), 20(0-7-0), 427(0-18-0) की मैसर्ज डी0एल0एफ0 लिमिटेड व खसरा न0 10(2-0-0), 11(1-1-0), 12(1-2-0), 13(0-9-0), 16(2-5-0), 24(0-15-0), 26(1-18-0), 27(2-13-0), 28(3-9-0), 29(1-15-0), 30(2-13-0), 32(2-18-0), 33(3-18-0), 34(8-16-0), 35(5-2-0), 36(4-18-0), 425/1/2(2-9-11), 426/1(2-4-0), 428(0-12-0), 429(1-0-0), 430(3-9-0), 431(0-16-0), 432(1-6-0), 427/1(0-6-0) की मैसर्ज डी0एल0एफ0 सिटी सेंटर लिमिटेड व खसरा न0 31/1/1(0-13-0) के राजेन्द्र सिंह, राजेश कुमार, सुरेन्द्र सिंह, राकेश कुमार पुत्रान बलबीर सिंह पुत्र रामरिख समभाग के नाम मलकियत है। जिसकी मांगी गई रिर्पोट बिन्दुवार निम्न प्रकार है:-

1. उपरोक्त अराजी दिनाकं 07.05.1992 के नोटिफिकेशन के अनुसार अरावली क्षेत्र मे नही है।
2. दिनाकं 07.05.1992 के नोटिफिकेशन से पूर्व व पश्चात मिसल हकीयत/चकबन्दी तक कभी भी अराजी की किस्म कभी भी गैर मुमकिन पहाड-राडा-बीहड-बंजड बीहड या रून्द्र नही रही है।

3. दिनाकं 07.05.1992 के नोटिफिकेशन से पूर्व व पश्चात किला नम्बरान 8,9,10,11,12,13,14,15,16,18/1,24,25,26,27,28,29,30,31/1/1,31/2,32,33,34,35, 36,424,425/1/2,426/1,427,427/1,428,429,430,431,432,436 की किस्म गैर मुमकिन कालोनी है। खसरा न0 19 की किस्म खरीफ 1991 ता रबी 2016 तक बंजर कदीम व खरीफ 2016 ता हाल गैर मुमकिन है। व खसरा न0 22,20,21,23 की किस्म खरीफ 1991 ता 2011 तक बंजर कदीम व खरीफ 2011 ता हाल गैर मुमकिन है।
4. वर्णित प्रार्थना पत्र मे दर्शाई गई अराजी खसरा न0 8,9,10,11,12,13,14,15,16,18/1 ,24,25,26,27,28,29,30,31/1/1,31/2,32,33,34,35,36,424,425/1/2,426/1,427,4 27/1,428,429,430,431,432,436 मिसल हकीयत ता हाल कभी भी शामलात देह/पंचायत देह/नगर पालिका/नगर निगम की मलकियत नही रही है। खसरा न0 18 व 22 की मलकियत जमाबन्दी 1995-96 तक पंचायत की मलकियत व 18 न0 खसरा पर श्रीमति दया आदि गैर मैरूसीयान व खसरा न0 22 पर रामचन्द्र आदि गैर मौरूसीयान काबिज रहे है। इसके बाद इन्तकाल न0 1687 तबदील मलकियत पर खसरा न0 18(0-16-0) का 1/3 भाग के श्रीमति तिरपती, विरो पुत्रयान श्रीमति कालिया विधवा रतीराम मालकान बने व बाकी हिस्से के पंचायत रही इन्तकाल न0 1688 बेय पर श्रीमति दया आदि ने सुषमा यादव पत्नी महावीर सिंह को 1/3 भाग बेय कर दिया व इन्तकाल न0 1969 तकसीम पर खसरा न0 18/1(0-5-10) श्रीमति सुषमा यादव व खसरा न0 18/2 रकबा 0-10-10 ग्राम पंचायत के हिस्से मे आया। इसके बाद इन्तकाल न0 2671 बैय पर श्रीमति सुषमा यादव ने मैसर्ज डी0एल0एफ0 लिमिटेड को खसरा न0 18/1(0-5-10) बैय कर दिया इसी प्रकार खसरा न0 22(0-14-0) पर इन्तकाल न0 1824 तबदील मलकियत पर रामचन्द्र आदि मालकान बने व इन्तकाल न0 1826, 1827, 1832, 1833, 1834 बैय से मैसर्ज डी0एल0एफ0 हाउसिंग एण्ड कन्सटकशन लिमिटेड मालिक बनी है। तथा इन्तकाल न0 2643 त0म0 पर मर्स्ज डी0एल0एफ0 होम डवलपर्स लिमिटेड मालिक बनी है।
5. उपरोक्त अराजी पर मुताबिक जमाबन्दी साल 2005-06 के खाना कैफियत मे किसी भी माननीय न्यायालय का कोई केस इन्द्राज नही है।

Dy. Conservator of Forests, Gurugram ने अपने कार्यालय के पत्र क्रमांक 867-70-G **Dated 08-07-2017** के द्वारा लिखा है कि **Applicant M/S DLF Ltd. Gateway Tower(5th Floor), DLF City, Phase-III, Gurugram-122002, Haryana letter no. Nil dated 29-12-2016** made a request in connection with land measuring 42.29 Acres having Khasra No. 8,9,10,11,12,13,14,15,16,18/1,19,20,21,22,23,24,25,26,27,28,29, 30,31/1/1,31/2,32,33,34,35,36,424,425/1/2,426/1,427,427/1,428,429,430min,431,432 ,436min Land located at Village Nathupur, District-Gurugram. Applicant made a proposal to use this land for Proposed Shopping/commercial Building "Mall of India" Purpose. In reference to the information provided by the user agency in form of facts/maps & GPS co-ordinates and subsequent verification of the provided facts with the available official records & Geo-referencing done of the co-ordinates provided by user agency on Google Earth the following is made clear that :-

A) As per records available above said land is not part of notified Reserved Forest, protected Forest under Indian Forest Act, 1927 or any area closed under section 4 & 5 Punjab Land Preservation Act 1900.

B) It is clarified that by the Notification No. S.O 8/P.A/2/1900/S 4/2013 dated 04-01-13 whole Revenue Estate of Gurugram is notified u/s 4 of PLPA 1900 and S.O 81/PA/2/1900/S.3/2012 dated 19-12-12 u/s 3 of PLPA 1900. The area is however not recorded as Forest in the Government record but felling of any tree is strictly prohibited without the permission of Divisional Forest officer, Gurugram.

C) It is clarified that by the Notification No. S.O 8/P.A/2/1900/S 4/2013 dated 04-01-13 whole Revenue Estate of Gurugram is notified u/s 4 of PLPA 1900. anot recorded as Forest in the Government record but felling of any tree is strictly prohibited without the permission of Divisional Forest officer, Gurugram

D) If approach is required from Protected Forest by the user agency, the clearance/regularization under Forest Conservation Act 1980 will be required without prior clearance from Forest Department the user of Forest land for approach road is strictly prohibited. **M/S DLF Ltd.** whose land is located at **Village NathupurDistrict Gurugram** must obtain clearance as applicable under Forest Conservation Act,1980.

E) As per the records available with the Forest Department Gurugram the area does not fall in areas where plantations were raised by the Forest Department under Aravali project.

F) All other statutory clearances mandated under the Environment protection Act 1986, as per the notification of Ministry of Environment and Forest, Government of India dated 07-05-1992 or any other Act/Order shall be obtained as applicable by the project proponents from the concerned authorities.

G) The project proponent will not violate and Judicial Order/Direction issued by the Hon'ble Supreme Court/High Courts.

H) It is clarified that the Hon'ble Supreme Court has issued various judgement dated 07-05-2002, 29-10-2002, 16-12-2002, 18-03-2004, 14-05-2008 etc. pertaining to Aravali region in Haryana, which should b e complied with.

I) The aforesaid clarification is for the facts/location maps/GPS Co-ordinates provided by the user agency.

GPS Co-ordinates :-

(i) 28^0 30' 15.88" N 77^0 05' 42.24" E

(ii) 28^0 30' 12.41" N 77^0 05' 48.01" E

(iii) 28^0 30' 08.41" N 77^0 05' 46.24" E

(iv) 28^0 30' 07.37" N 77^0 05' 49.82" E

(v) 28^0 29' 59.37" N 77^0 05' 43.33" E

(vi) 28^0 30' 06.59" N 77^0 05' 35.12" E

I) It shall be the responsibility of user agency/applicant to get necessary clearance/ permissions under various Acts and Rules applicable if any, from the respective authorities/department.

अतः तहसीलदार, गुरूग्राम व उप वन संरक्षक, गुरूग्राम की रिर्पोट अनुसार वर्णित किला नं. अरावली क्षेत्र में नहीं आते हैं।

कृतेः उपायुक्त, गुरूग्राम।

Enclosure 13: Forest NOC

Forest Department, Govt. of Haryana
Office of Dy. Conservator of Forests, Gurugram
Forest Complex, Sohna Road, Near Court, Gurugram, Ph. 0124-2655401

No.: 866-G **Dated:** 6/7/17

To,

M/s DLF Ltd.,
Gateway Tower (5th Floor), DLF City, Phase-III,
Gurugram-122002, Haryana

Sub.: Clarification regarding Applicability of forest laws on Non Forest land Applied by **Sh M/s DLF Ltd.,** land located at village **Nathupur** District Gurugram.

Applicant **M/s DLF Ltd., Gateway Tower(5th Floor), DLF City, Phase-III, Gurugram-122002, Haryana** letter no. **Nil** dated **29.12.2017** made a request in connection with land measuring **42.29 Acres** having Khasra No. **8, 9, 10, 11, 12, 13, 14, 15, 16, 18/1, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31/1/1, 31/2, 32, 33, 34, 35, 36, 424, 425/1/2, 426/1, 427, 427/1, 428, 429, 430min, 431, 432, 436min** located at village **Nathupur** District **Gurugram**. Applicant made a proposal to use this land for **Proposed Shopping/Commercial Building "Mall of India" Purpose.** In reference to the information provided by the User Agency in form of facts/ Maps & GPS Co-ordinates and subsequent verification of the provided facts with the available official records & Geo-referencing done of the co-ordinates provided by User Agency on Google Earth the following is made clear that:-

a) As per records available above said land is not part of notified Reserved Forest, Protected Forest under Indian Forest Act, 1927 or any area closed under section 4 & 5 of Punjab Land Preservation Act, 1900.

b) It is clarified that by the Notification No. S.O.8/P.A 2/1900/S.4/2013 dated 4th January, 2013, whole Revenue Estate of Gurugram is notified u/s 4 of PLPA 1900 and S.O.81/PA.2/1900/S.3/2012 dated 19th December, 2012 u/s 3 of PLPA 1900. The area is however not recorded as forest in the Government record but felling of any tree is strictly prohibited without the permission of Divisional Forest Officer, Gurugram.

c) It is clarified that by the Notification No. S.O.8/P.A 2/1900/S.4/2013 dated 4th January, 2013, whole Revenue Estate of Gurugram is notified u/s 4 of PLPA 1900 anot recorded as forest in the Government record but felling of any tree is strictly prohibited without the permission of Divisional Forest Officer, Gurugram.

d) If approach is required from Protected Forest by the user agency, the clearance/regularization under Forest Conservation Act 1980 will be required. Without prior clearance from Forest Department, the use of Forest land for approach road is strictly prohibited. **M/s DLF Ltd.,** whose land is located at village **Nathupur** District **Gurugram** must obtain clearance as applicable under Forest Conservation Act 1980.

e) As per the records available with the Forest Department, Gurugram, the area does not fall in areas where plantations were raised by the Forest Department under Aravalli project.

f) All other statutory clearances mandated under the Environment Protection Act.1986, as per the notification of Ministry of Environment and Forests, Government of India, dated 07-05-1992 or any other Act/order shall be obtained as applicable by the project proponents from the concerned authorities.

g) The project proponent will not violate any Judicial Order/ direction issued by the Hon'ble Supreme Court/ High Courts.

h) It is clarified that the Hon'ble Supreme Court has issued various judgments dated 07.05.2002, 29.10.2002, 16.12.2002, 18.03.2004, 14.5.2008 etc. pertaining to Aravalli region in Haryana, which should be complied with.

i) The aforesaid clarification is for the facts/location maps/GPS Co-ordinates provided by the user agency.

GPS Co-ordinates:-

(i) 28° 30' 15.88" N 77° 05' 42.24" E (ii) 28° 30' 12.41" N 77° 05' 48.01" E
(iii) 28° 30' 08.41" N 77° 05' 46.24" E (iv) 28° 30' 07.37" N 77° 05' 49.82" E
(v) 28° 29' 59.37" N 77° 05' 43.33" E (vi) 28° 30' 06.59" N 77° 05' 35.12" E

l) It shall be the responsibility of user agency/applicant to get necessary clearances/permissions under various Acts and Rules applicable if any, from the respective authorities/Department.

Date:
Place. **Gurugram**

Divisional Forest Officer Gurgaon

Dy. Conservator of Forests,
Gurugram

Endst.No. Dated:

A copy is forwarded to:-

1. Conservator of Forests, South Circle, Gurugram for kind information.
2. D.G, T.C.P, Chandigarh SCU 71-75 2nd Floor, Sec-17C, Chandigarh for kind information.
3. District Magistrate, Gurugram w.r.t. his letter no. **358/MB Dated 13.01.2017** for kind information.
4. Guard File.

Dy. Conservator of Forests,
Gurugram

Enclosure 14: License

Regd.

DIRECTORATE OF TOWN & COUNTRY PLANNING, HARYANA

SCO No. 71-75, 2nd Floor, Sector -17 C, Chandigarh
Phone: 0172-2549349, Email: tcpharyana4@gmail.com, www.tcpharyana.gov.in

Memo No: LC-50 III/2017/ 12206. **Dated:** 05-06-2017

To

DLF Ltd. and others,
DLF Home Developers Ltd.,
DLF Centre, Sansad Marg,
New Delhi-110001.

Subject: **Renewal of Licence No. 95 of 1984 dated 17.05.1984, 117 of 1984 dated 03.12.1984, 1 & 2 of 1985 dated 21.01.1985, 27 & 28 of 1985 dated 13.09.1985, 45 of 1985 dated 27.11.1985, 8 of 1986 dated 25.01.1986, 30 of 1986 dated 07.04.1986, 3 of 1987 dated 18.03.1987, 56 of 1992 dated 19.06.1992, 6 of 2001 dated 31.08.2001 and 36 of 2004 dated 31.03.2004, 69 of 2013 dated 25.07.2013 granted for development of Residential Plotted Colony in Phase-I,II,III DLF City, Sector-24,25 & 25A, Gurgaon Manesar Urban Complex - DLF Ltd.**

Please refer your letter dated 15.02.2017 on the matter cited as subject above.

1. The following licences granted for setting up of Residential Plotted Colony in Phase-I,II,III DLF City, Sector-24,25 & 25A, Gurgaon Manesar Urban Complex - DLF Ltd. are renewed as per the details given in the table:-

Sr. No.	Licence No. & dated	Area (in acres)	Renewed upto	Name of the licencee
1	95 of 1984 dated 16.05.1984	20.16	15.05.2019	(Apollo Land & Housing Co. Ltd.) Now DLF Home Developers Ltd.
2	117 of 1984 dated 03.12.1984	22.11	02.12.2019	(Apollo Land & Housing Co. Ltd.) Now DLF Home Developers Ltd.
3	01 of 1985 dated 21.01.1985	13.88	20.01.2020	(Delhi & Land Finance Ltd..) Now DLF Home Developers Ltd.
4	02 of 1985 dated 21.01.1985	4.32	20.01.2020	(Apollo Land & Housing Co. Ltd.) Now DLF Home Developers Ltd.
5	27 of 1985 dated 13.09.1985	20.56	12.09.2019	(Apollo Land & Housing Co. Ltd.) Now DLF Home Developers Ltd.
6	28 of 1985 dated 13.09.1985	20.26	12.09.2019	(Delhi & Land Finance Ltd.) Now DLF Home Developers Ltd.
7	45 of 1985 dated 27.11.1985	8.09	26.11.2019	(Vee Dee Investment Agencies Ltd.) Now DLF Home Developers Ltd.
8	08 of 1986 dated 25.01.1986	7.09	24.01.2020	(Vee Dee Investment Agencies Ltd.) Now DLF Home Developers Ltd.
9	30 of 1986 dated 07.04.1986	1.28	06.04.2019	(Apollo Land & Housing Co. Ltd.) Now DLF Home Developers Ltd.
10	03 of 1987 dated 18.03.1987	12.11	17.03.2019	(Vee Dee Investment Agencies Ltd.) Now DLF Home Developers Ltd.
11	56 of 1992 dated 19.06.1992	2.53	18.06.2019	(Delhi & Land Finance Ltd.) Now DLF Home Developers Ltd.
12	06 of 2001 dated 31.08.2001	5.17625	30.08.2019	(DLF Housing and Construction Ltd.) Now DLF Home Developers Ltd.
13	36 of 2004 dated 31.03.2004	2.469	30.03.2019	(DLF Universal Ltd.) Now DLF Ltd.
14	69 of 2013 dated 25.07.2013	12.915625	24.07.2019	DLF Ltd. and others in collaboration with DLF Ltd.

2. It is further clarified that this renewal will not tantamount to certification on your satisfactory performance entitling you for renewal of licence for further period and you will get the licences renewed upto the period till the final completion of the colony is granted.

3. The Bank Guarantees on account of IDW will be revalidated one month before its expiry.
4. You shall submit the NOC from MOEF against Licence no. 69 of 2013 as per requirement of notification dated 14.09.2006.
5. You shall complete the construction of community building as the provisions of Section-3(3)(a)(iv) of Act no. 8 of 1975.

(T. L. Satyaprakash, IAS),
Director,
Town and Country Planning,
Haryana, Chandigarh.

Endst. No. LC-50 III/2017/ **Dated :**

A copy is forwarded to the following for information and necessary action:-

i. Chief Administrator, HUDA, Panchkula.
ii. Chief Engineer, HUDA, Panchkula.
iii. Senior Town Planner, Gurugram.
iv. District Town Planner, Gurugram.
v. Account Officer O/o DTCP, Chandigarh.
vi. Website Admin with a request to update the status on website.

(Sanjay Kumar)
District Town Planner (HQ)
O/o Director, Town & Country Planning
Haryana, Chandigarh.

License and Relationship of Licencee

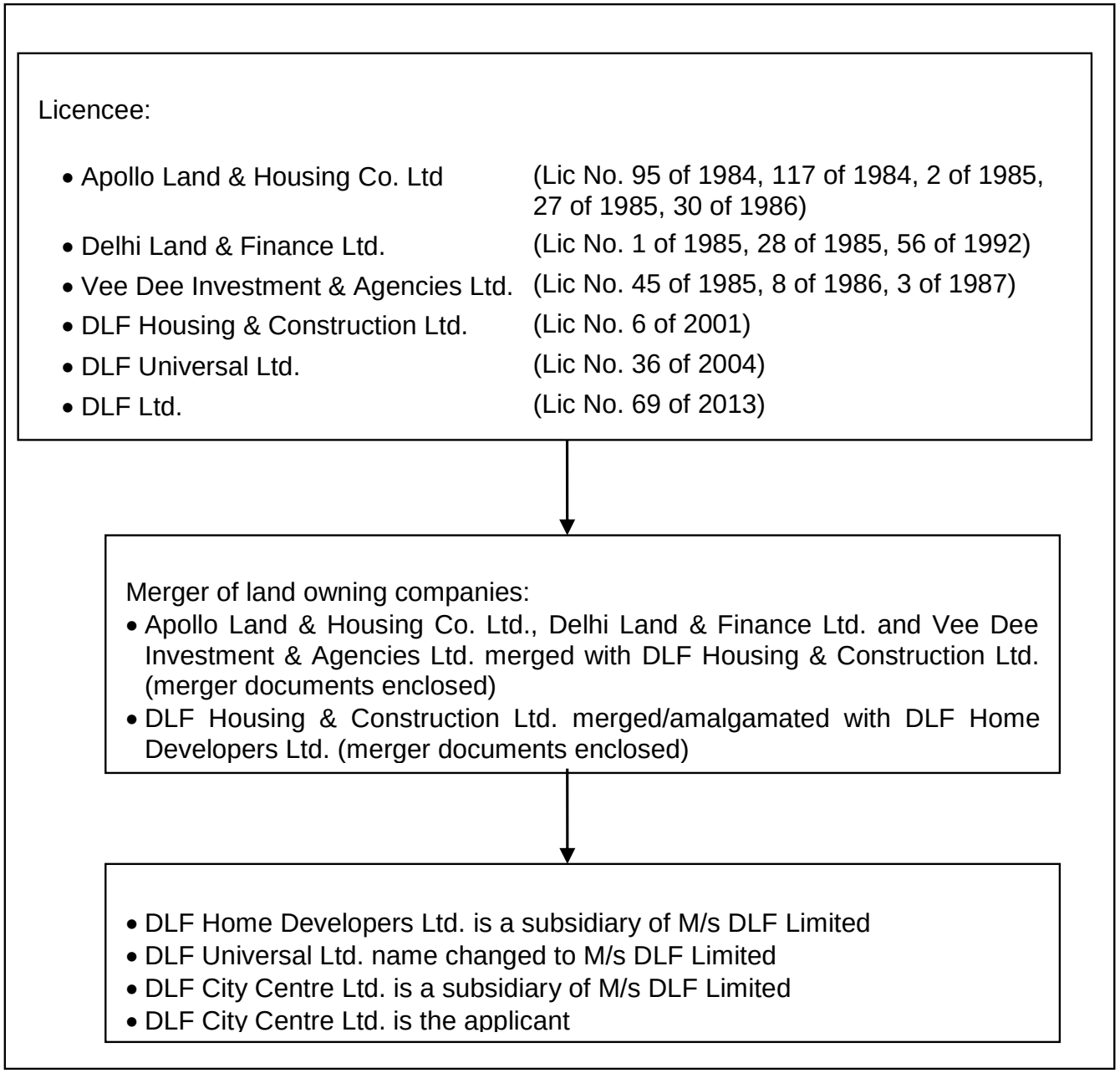
List of License, Khasra Numbers and Area

S. N.	Licence No.	Village	Khasra Numbers	Area (acres)
1	95 of 1984	Nathupur	32, 33, 34, 35, 36	10.469
2	117 of 1984	Nathupur	27, 28, 29, 30, 424, 425/1/2	9.788
3	1 of 1985	Nathupur	26	1.188
4	2 of 1985	Nathupur	35	2.000
5	27 of 1985	Nathupur	35, 426/1, 427, 428, 429, 432	4.796
6	28 of 1985	Nathupur	11, 12, 13, 14, 15, 16	3.875
7	45 of 1985	Nathupur	8, 9, 10	2.063
8	8 of 1986	Nathupur	427/1, 430, 431	2.688
9	30 of 1986	Nathupur	32, 33, 34	1.281
10	3 of 1987	Nathupur	427/1, 430, 436, 436	0.969
11	56 of 1992	Nathupur	24	0.469
12	6 of 2001	Nathupur	21, 22, 23, 25	1.594
13	36 of 2004	Nathupur	19, 20	0.563
14	69 of 2013	Nathupur	18/1, 31/1/1, 31/2	0.984
				42.727

List of Licencee, Licencee and Validity of Licences

S. N.	Licence No.	Original Licencee	Present Licencee	Licence Valid Upto
1	95 of 1984	Apollo Land & Housing Co. Ltd	DLF Home Developers Ltd.	15.05.19
2	117 of 1984	Apollo Land & Housing Co. Ltd	DLF Home Developers Ltd.	02.12.19
3	1 of 1985	Delhi Land & Finance Ltd.	DLF Home Developers Ltd.	20.01.20
4	2 of 1985	Apollo Land & Housing Co. Ltd	DLF Home Developers Ltd.	20.01.20
5	27 of 1985	Apollo Land & Housing Co. Ltd	DLF Home Developers Ltd.	12.09.19
6	28 of 1985	Delhi Land & Finance Ltd.	DLF Home Developers Ltd.	12.09.19
7	45 of 1985	Vee Dee Investment & Agencies Ltd.	DLF Home Developers Ltd.	26.11.19
8	8 of 1986	Vee Dee Investment & Agencies Ltd.	DLF Home Developers Ltd.	24.01.20
9	30 of 1986	Apollo Land & Housing Co. Ltd	DLF Home Developers Ltd.	06.04.19
10	3 of 1987	Vee Dee Investment & Agencies Ltd.	DLF Home Developers Ltd.	17.03.19
11	56 of 1992	Delhi Land & Finance Ltd.	DLF Home Developers Ltd.	18.06.19
12	6 of 2001	DLF Housing & Construction Ltd.	DLF Home Developers Ltd.	30.08.19
13	36 of 2004	DLF Universal Ltd.	DLF Ltd.	30.03.19
14	69 of 2013	DLF Ltd. & others	DLF Ltd.	24.07.19

Chart: Relationship between Licencee and Project Proponent



95/84

FORM LC -V

(See rule 12)

Haryana Government

Town and Country Planning Department

Licence No. 95 9 /1984

This licence has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975, and the rules made thereunder M/s Apollo Land and Housing Co. Pvt. Ltd. resident of 21-22 Narindra Place, Parliament Street, New Delhi for setting up a residential colony at Nathupur, Tehsil Gurgaon and District Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the Schedule annexed hereto and duly signed by the Director, Town and Country Planning, Haryana.

3. The licence granted is subject to the conditions:-

a) that the colony is laid out to conform to the approved layout plans and development works are executed according to the designs and specifications shown in the a pproved plan accompanying this licence

b) that the conditions of the agreement already executed a re duly fulfilled and the provisions of the Haryana Development and Regulation of Urban areas Act, 1975 and Rules made thereunder are duly complied with.

c) that the demarcation plan of the colony area is submitted before starting the developmentworks in the colony for approval of the zoning plan.

4. The licence is valid upto 15-5-86.

Dated

(G. Madhavan)
Director,
Town and Country Planning
Haryana, Chandigarh.

Endst. No. 5DP-84/ 8136 Dated 17/5/84

A copy is forwarded to the following for information and necessary action:-

1. M/s Apollo Land and Housing Co. Pvt. Ltd. 21-22 Narindra Place, New Delhi
2. Chief Engineer, Ha ryana Urban Development Authority, Pa-nchkula.
3. Senior Town Planner, Gurgaon.

Director,
Town and Country Planning, Hr.

Apollo Land & Housing Company ,Pvt. Ltd.

22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI - 110001.

Please Quote ..... *Dated* .....

DETAILS OF LAND OF M/S APOLLO LAND & HOUSING COMPANY PRIVATE LIMITED.

Land at Village	Khasra Nos.	Area B. E. pukhta	Area B. E. kham
Kathpur	728	0 - 2	
	729	1 - 8	
		1 - 10	4 - 10
-do-	793	1 - 5	3 - 15
-do-	698	0 - 16	2 - 8
-do-	800/1	0 - 07	
	801	0 - 04	
	802	4 - 04	
		4 - 15	14 - 5
-do-	35min	2 - 4	
	1/3 share	0 - 15	2 - 5
-do-	34 min	6 - 9	19 - 7
-do-	32 min	2 - 0	6 - 0
-do-	33 min	2 - 13	7 - 19
-do-	491	3 - 5	13 - 4
	493/493	2 - 7	
		5 - 12	
	11/14 share	4 - 8	

Director,
Town and Country Planning Haryana
Chandigarh

Apollo Land & Housing Company ,Pvt. Ltd.

22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI - 110001.

Please Quote ..... *Dated* .....

: 2 :

Land at Village	Khasra Nos.	Area B. B. puk'ta	Area B. B. kham
Kathupur	36	4 - 18	14 - 14
-do-	660	0 - 10	
	663	2 - 06	8 - 8
	Total:	32 - 05	96 - 15

or say: 20.18 acres

Director,
Town and Country Planning Haryana
Chandigarh

for Apollo Land & Housing Company Pvt. Ltd.,

DIRECTOR.

Form LC-V

(See rule 12)

Haryana Government
Town and Country Planning Department.

Licence No. 117 of 1984

This licence has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975 and the Rules made thereunder to M/s Appollo Land & Housing Co. Pvt.Ltd. 21-22 Narindra Place, Parliament street New Delhi for setting up of residential colony at Village Nathupur Distt. Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the Schedule annexed hereto and duly signed by the Director, Town and Country Planning, Haryana.

3. The licence granted is subject to the conditions:-

a) that the colony is laid out to conform to the approved layout plan and development works are executed according to the designs and specifications shown in the approved plan accompanying this licence;

b) that the conditions of the agreement already executed are duly fulfilled and the provisions of the Haryana Development and Regulation of Urban Areas Act, 1975 and the rules made thereunder are duly complied with;

c) that the demarcation plan of the colony area is submitted before starting the development works in the colony for approval of the zoning plan.

4. The licence is valid upto 2.12.86

(G.Madhavan)
Director,
Town and Country Planning
Haryana, Chandigarh.

Dated 3.12.84.

Endst.No. 5DP-84/12204 Dated 5/12/84

A copy is forwarded to the following for information and necessary action:-

1. M/s Apollo Land and Housing Co, Pvt.Ltd., 21-22 Narindra Place, Parliament Street, New Delhi.
2. The Chief Administrator, HUDA, Chandigarh.
3. The Chief Engineer, HUDA, Panchkula.
4. The Senior Town Planner, Gurgaon.

Photo Copy
ATTESTED

PUBLIC
NEW DELHI, INDIA

Director,
Town and Country Planning Deptt.,
Haryana, Chandigarh.

Apollo Land & Housing Company ,Pvt. Ltd.

22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI - 110001.

ase Quote ..... Dated

DETAILS OF LAND OF M/S APOLLO LAND & HOUSING CO. PVT. LTD.

Land at Village	Khasra Nos.	Area in Pukhta Bigha	Biswa	Area in Dhur Bigha	Biswa
Nathupur	27	2	15	7	19
-do-	491	2	05		
	913/495	3	07		
		5	12		
	5/14 share	1	04	3	12
-do-	488	1	03		
	492	1	00		
	493	1	01		
	494	0	03		
	912/495	0	14		
		4	1		
	5/8 share	2	11	7	13
-do-	488	1	03		
	492	1	00		
	493	1	01		
	494	0	03		
	912/495	0	14		
		4	1		
	1/24 share	0	3⅓	0	10
-do-	912/495	0	14		
	1/4 share	0	3½	0	10½

Haryana

Chandigarh

...2/-

Apollo Land & Housing Company ,Pvt. Ltd.

22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI - 110001.

ise Quote ..... Dated

(2)

Land at Village	Khasra Nos.	Area in Bighas	Biswas	Area in Bighas	Biswas
Nathupur	28	3	09		
	29	1	15		
	30	2	13		
		7	17	23	11
-do-	481	2	16		
	3/4 share	2	02	6	06
-do-	424	2	16		
	425	3	17		
		5	15		
	1500/1680 share	5	03¾	15	10
-do-	497	0	19		
	498	1	08		
		2	07		
	1/2 share	1	3½	3	10½
-do-	395	0	14		
	396	1	05		
	397	0	16		
	402	1	03		
	403	0	12		
		4	11	13	13

Director,
Town and Country Planning Haryana
Chandigarh.

....3/-

Apollo Land & Housing Company (P) Ltd.

22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI - 110001.

Please Quote

Dated

- 2 -

Land at Village	Rect. No.	Area in pukka Bigha	Biswa	Area in Kuchha Bigha	Biswa
Nathupur	398	0	11		
	399	2	10		
	401	2	01		
		5	02	15	6
-do-	512min	0	14		
	520	2	06		
		3	0	9	0
	Total:	35 - 10		106	00
		or say		22.36	Acres.

(10.6-10) 3.5

For Apollo Land & Housing Co., (P) Ltd.,

(Director)

Director,
Town and Country Planning Haryana
Chandigarh.

(See rule 12) 645 323

Haryana Government

Town and Country Planning Department

Licence No. LG 1985

This licence has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975, and the rules made the reunder M/s Delhi Car & Finance Ltd. resident of 21-22 Narindra Place, Parliament Street, New Delhi for setting up a residential colony at N/a Khuplia Tehsil — and District Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the Schedule annexed hereto and duly signed by the Director, Town and Country Planning, Haryana.

3. The licence granted is subject to the conditions:-

a) that the colony is laid out to conform to the approved layout plans and development works are executed according to the designs and specifications shown in the approved plan accompanying this licence

b) that the conditions of the agreement already executed are duly fulfilled and the provisions of the Haryana Development and Regulation of Urban areas Act, 1975 and Rules made thereunder are duly complied with.

that the demarcation plan of the colony area is submitted before starting the development works in the colony for approval of the zoning plan.

Appointed by Govt. of India Notary Chamber Area New Delhi

4. The licence is valid upto 20th January, 1988

Photo State Copy
ATTESTED
NOTARY PUBLIC
NEW DELHI, INDIA
25 FEB 1991

Dated 21.1.85.

(G. Madhavan)
Director,
Town and Country Planning
Haryana, Chandigarh.

Endst. No. SDP-84/ 125 Dated 25/1/85

A copy is forwarded to the following for information and necessary action:-

1. M/s Delhi Car & Finance Ltd. New Delhi
2. M/s C.A. [illegible] Chandigarh
3. Chief Engineer, Haryana Urban Development Authority, Panchkula.
4. Senior Town Planner, Gurgaon.

Director,
Town and Country Planning, Hr.

LAND AND FINANCE LIMITED

NARINDRA PLACE, PARLIAMENT STREET, NEW DELHI 110 001

Dated 198

Extract of Jamabandi of Delhi Land & Finance Ltd

Village	Khasra nos.	Area in Bighas	Area in Acres
...thal	641	0 - 03	
	642	0 - 07	
		0 - 10	2 - 05
-do-	740	0 - 14	
	751	0 - 05	
	752	0 - 03	
	753	1 - 12	
		2 - 04	
	1/14 share	0 - 03	0 - 15
-do-	652	2 - 14	
	1/3 share	0 - 17-1/3	2 - 12
-do-	714	5-19	
	721	0-07	
	722	2-17	
	725	3-01	
	817	1-09	
	818	7-09	
		21-02	
	11/168 share	1-7-1/3	4 - 03
	480	5 - 3	
	790	2 - 17	
	792/1	1 - 19	
	890	1 - 3	
	891	1 - 0	
	892	1 - 10	
	893	1 - 14	
		15 - 16	
	1/2 share	7 - 12	20 - 17

Appointed By Govt. of India
Chanda B.A.(Hons) LL.B.
Notary N. Delhi
New Delhi

Director,
Town & Country Planning Haryana
Chandigarh

Photo State Copy
ATTESTED

NOTARY PUBLIC
NEW DELHI, INDIA

FORM LC -V

(See rule 12)
Haryana Government
Town and Country Planning Department

Licence No. 29 1985.

This licence has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975, and the rules made the reunder M/s Ansal Land & Housing Co. P. L. Ltd. resident of 21-22 Narindra Place, Parliament Street, New Delhi for setting up a residential colony at Nathupur Tehsil — and District Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the Schedule annexed hereto and duly signed by the Director, Town and Country Planning, Haryana.

3. The licence granted is subject to the conditions:-

a) that the colony is laid out to conform to the approved layout plans and development works are executed according to the designs and specifications shown in the approved plan accompanying this licence

b) that the conditions of the agreement already executed are duly fulfilled and the provisions of the Haryana Development and Regulation of Urban areas Act, 1975 and Rules made thereunder are duly complied with.

c) that the demarcation plan of the colony area is submitted before starting the developmentworks in the colony for approval of the zoning plan.

4. The licence is valid upto 20th January, 1987.

Dated 21.1.85.

(G. Madhavan)
Director,
Town and Country Planning
Haryana, Chandigarh.

Endst. No. 5DP-84/1262 Dated 28/1/85.

A copy is forwarded to the following for information and necessary action:-

1. M/s Ansal Land & Housing Co. P. L. Ltd. New Delhi
2. DTP, Haryana Chandigarh
3. Chief Engineer, Haryana Urban Development Authority, Panchkula.
4. Senior Town Planner, Gurgaon.

Director,
Town and Country Planning, Hr.
Chd

Apollo Leased & Housing Company (Pvt. Ltd.

22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI - 110001.

Please Quote _____ Dated _____

Details of land of M/s Apollo Land & Housing Co., Pvt.Ltd.

Land of village	Khasra Nos.	Area in pukhta B. - B.	Area in Khas B. - B.
Kathunpur	912/495	0 - 14	
	1/4 share	0 - 3½	0 - 10½
	501	2 - 07	7 - 01
-do-	35	3 - 02	
	3/8 share	3 - 04	9 - 12
-do-	481	2 - 16	
	1/4 share	0 - 14	2 - 02
-do-	805	2 - 19	
	807/1	3 - 16	
	807/3	4-0 - 17	
		7 - 12	
	1/30 share	0 - 05	0 - 15

Director,
Town and Country Planning Organ
Chandigarh.

...2/-

Apollo Leasehold & Housing Company Pvt. Ltd.

22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI - 10001.

Please Quote ..... Dated .....

: 2 :

Land at village	Khasra Nos.	Area in pakhta B. - B.	Area in Khas B. - B.
Ruchipur	805	2 - 19	
	807/1	3 - 16	
	807/3	0 - 17	
		7 - 12	
	1/30 share	0 - 05	0 - 15
	Total:	6 - 18½	20 - 15½

or say : 4.32 acres

Chief Town Planning Officer, Chandigarh.

For Apollo Land & Housing Company Pvt. Ltd.,

(DIRECTOR)

LAND AND FINANCE LIMITED

..., NARINDRA PLACE, PARLIAMENT STREET, NEW DELHI-110 001

No Dated 198

- 2 -

Village	Khasra Nos.	Area in Bighas B. - B.	Area in Acres B. - B.
Bichaipur	381	0 - 07	
	382	7 - 11	
	472	0 - 0[illegible]	
	473	0 - 18	
		9 - 2	27 - 06
-do-	26	1 - 18	5 - 14
	Total:	22 - 4	66 - 12

or say 13.87 acres

for Delhi Land and Finance Limited,

(DIRECTOR)

...ister,
...ted Country Planning Haryana
Chandigarh

Appointed By Govt. of India
Chander B. Arya
Notary Delhi
New Delhi

Photo State Copy
ATTESTED
NOTARY PUBLIC
NEW DELHI, INDIA

12.9.03

FORM LC -V

(See rule 12)

Haryana Government

Town and Country Planning Department

Licence No. LC-02-1995

This licence has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975, and the rules made the reunder M/s Apollo Land & Housing Co. Pvt. Ltd. resident of 21-22 Narindra Place, Parliament Street, New Delhi for setting up a residential colony at Nathupur Tehsil ____ and District Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the Schedule annexed hereto and duly signed by the Director, Town and Country Planning, Haryana.

3. The licence granted is subject to the conditions:-

a) that the colony is laid out to conform to the approved laycut plans and development works are executed according to the designs and specifications shown in the a pproved plan accompanying this licen

b) that the conditions of the agreement already executed a re duly fulfilled and the provisions of the Haryana Development and Regulation of Urban areas Act, 1975 and Rules made thereunder are duly complied with.

a) that the demarcation plan of the colony area is submitted before starting the developmentworks in the colony for approval of the zoning plan.

4. The licence is valid upto [illegible]

Dated 13.9.95

(G.Madhavan)
Director,
Town and Country Planning
Haryana, Chandigarh.

Endst.No. 5DP-84/ 16145 Dated 13/9

A copy is forwarded to the following for information and necessary action:-

1. M/s Apollo Land & Housing Co. Pvt. Ltd. 21-22 N. Place, N. Delhi
2. To CA, HUDA, Gurgaon
3. Chief Engineer, Haryana Urban Development Authority, Panchkula.
4. ~~Senior Town~~ Chief Town Planner, Gurgaon.

Director,
Town and Country Planning, Hr.
Chd.

27/85

Apollo Land & Housing Company (Pvt. Ltd.

22, NARINDRA PLACE
PARLIAMENT STREET
NEW DELHI 110001

Please Quote ..... Dated

Details of land of M/s Apollo Land & Housing Company Pvt.Ltd.

Land at village	Khasra No.	Area in Bighs - Biswa	Area in Khas Bighs - Biswa
Mathapur	426	2 - 17	
	1508/1680	5 - 11	7 - 13
-do-	427	0 - 18	
	428	0 - 12	
	429	1 - 0	
		2 - 10	7 - 10
-do-	376	4 - 05	
	377	1 - 06	
		5 - 11	16 - 13
-do-	476	2 - 01	
	477	0 - 11	
	483 Min	1 - 12	
	432 Min	1 - 10	
		5 - 14	17 - 03
-do-	432	2 - 05	
	478	0 - 03	
	479	2 - 12	
		4 - 19	14 - 17
-do-	424	2 - 18	
	425	2 - 17	
	426	2 - 17	
		8 - 12	
	2/105 share	0 - 34	0 - 11

Director,
Town and Country Planning Haryana
Chandigarh.

27/85

Apollo Land & Housing Company Pvt. Ltd.

22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI - 110001

Dated

Please Quote

Land at Village	Khasra No. No.	Area in Kanal - Marla	Area in Khas Kanal - Marla
Nathupur	35	5 - 2	0 - 12
	1/24 share	0 - 4	
-do-	788	6 - 1	
	791/1	0 - 0	
	791/3	2 - 11	
		8 - 12	24 - 3
	14/15 share	8 - 1	5 - 5
-do-	888 Min east	1 - 15	3 - 12
-do-	888 Min West	1 - 04	2 - 00
-do-	889	0 - 16	100 - 5

Total: 33 Kanal 16 Marla

or say : 20.50 acres.

Director,
Town and Country Planning, Haryana
Chandigarh.

for Apollo Land & Housing Company Pvt. Ltd.,

FORM LC V
(See rule 12)
HARYANA GOVERNMENT
TOWN AND COUNTRY PLANNING DEPARTMENT.

LICENCE No. 28 07 /1985

This licence has been granted under the Haryana Development and Regulation of Urban Areas Act,1975 and the rules made thereunder M/s Delhi Land & Finance, Ltd. resident of 21-22 Narindra Place,Parliament Street,New Delhi for setting up a residential colony at Village Nathupur Tehsil - and District Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the schedule annexed hereto and duly signed by the Director,Town and Country Planning,Haryana.

3. The licence granted is subject to the conditions:-

a) that the colony is laid out to conform to the approved layout plans and development works are executed according to the designs and specifications shown in the approved plan accompanying this licence;

b) that the conditions of the agreement already executed are duly fulfilled and the provisions of the Haryana Development and Regulation of Urban Areas Act,1975 and the rules made thereunder are duly complied with;

c) that the demarcation plan of the colony area is submitted before starting the development works in the colony for approval of the zoning plan.

4. The licence is valid upto 12.9.87

(G.Madhavan)
Director,
Town and Country Planning,
Haryana,Chandigarh.

Dated 13.9.85

Endst.No. 5DP-85/16169 Dated 13/9

A copy is forwarded to the following for information and necessary action:-

1. M/s Delhi Land & Finance (Ltd. 21-22 N.Place,N.Delhi
2. The Chief Administrator,HUDA,Chandigarh.
3. The Chief Engineer,HUDA,Panchkula.
4. The Chief Co-Ordinator,Planner,Gurgaon.

Director,
Town and Country Planning,
Haryana,Chandigarh.

28/85

[illegible]

REF. NO.

DATED

DETAILS OF LAND OF M/S DELHI LAND & FINANCE LIMITED

Land at Village	Khasra No.	Area in Kanals Marla	Area in Kanal Bighas - Biswas
	314	3 - 13	
Nathpur	400	0 - 06	
	440	0 - 13	
	441	1 - 03	
	442	0 - 09	
		6 - 02	18 - 6
		3 - 05	9 - 15
-do-	762	2 - 18	
-do-	658 1/27 share	0 - 02	0 - 06
-do-	11	1 - 1	
	12	1 - 2	
	13	0 - 9	
	14	0 - 9	
	15	0 - 10	
	16	0 - 05	
	17	2 - 0	
		6 - 4	24 - 12
-do-	769 Min	2 - 7	
	484	1 - 13	
	485	0 - 11	
	501	0 - 10	
	502	4 - 01	
	358	0 - 11	
		10 - 02	30 - 36

Estate Officer,
Town and Country Planning Department,
Chandigarh.

28/85 28/85

Delhi Land and Finance Limited

Regd. Office ... Chandra Dev Parliament Street,
New Delhi-110 001

REF. NO..... DATED.....

: 2 :

Land at Village	Khasra Nos.	Area in Pukhta Bighs - Biswa	Area in Kiam Bighs - Biswa
Mathnajar	373	3 - 6	9 - 10
-do-	754	6 - 0	18 - 0
	Total:	37 - 1	111 - 3

or say : 23.15 Acres.

Director,
Town and Country Planning Haryana
Chandigarh.

for Delhi Land & Finance Ltd.,

(DIRECTOR)

FORM LC V
(See rule 12)
HARYANA GOVERNMENT
TOWN AND COUNTRY PLANNING DEPARTMENT

LICENCE No. 45 of 1985

This licence has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975 and the rules made thereunder M/s Vee Dee Investment and Agencies Pvt. Ltd. resident of 21-22 Narindra Place, Parliament Street, New Delhi for setting up a residential colony at Village Nathupur, Tehsil Gurgaon and District Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the schedule annexed hereto and duly signed by the Director, Town and Country Planning, Haryana.

3. The licence granted is subject to the conditions:-

a) that the colony is laid out to conform to the approved layout plans and development works are executed according to the designs and specifications shown in the approved plan accompanying this licence;

b) that the conditions of the agreement already executed are duly fulfilled and the provisions of the Haryana Development and Regulation of Urban Areas Act, 1975 and the rules made thereunder are duly complied with;

c) that the demarcation plan of the colony area is submitted before starting the development works in the colony for approval of the zoning plan.

4. The licence is valid upto 25.11.1985.

(R.Kashyap)
Director,
Town and Country Planning,
Haryana, Chandigarh.

Dated 25.11.1985

Endst.No. SDP-85/19580 Dated 28/11/85

A copy is forwarded to the following for information and necessary action:-

1. M/s Vee Dee Investment Agencies Pvt. Ltd. 21-22 N.Place, N.Delhi
2. The Chief Administrator, HUDA, Chandigarh.
3. The Chief Engineer, HUDA, Panchkula.
4. The Chief Co-Ordinator, Planner, Gurgaon.

Director,
Town and Country Planning,
Haryana, Chandigarh.

ee Dee Investment & Agencies Private Limited

45/85

21-22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI-110001

Ref. No.....

Dated.....19

Details of land of M/s Vee Dee Investment & Agencies Pvt. Ltd.

Land at village	Khasra No.	Area in Pukhta Bigha - Biswas	Area in Kham Bigha - Biswas
Nathupur	815	2 - 08	
	816	2 - 05	
	819	2 - 17	
		7 - 10	22 - 10
-do-	6	2 - 6	6 - 18
-do-	7	0 - 15	
	8	0 - 08	
	9	0 - 18	
	10	2 - 0	
		4 - 1	12 - 03
-do-	459	0 - 9	
	460	0 - 8	
		0 - 17	2 - 11
	Total:	14 - 14	44 - 02

Director,
Town and Country Planning Haryana
Chandigarh

or say : 9.19 acres.

Director
Town and Country Planning Haryana
Chandigarh

for Vee Dee Investment & Agencies Pvt. Ltd.,

(DIRECTOR)

FORM LC -V
(See rule 12)

HARYANA GOVERNMENT
TOWN AND COUNTRY PLANNING DEPARTMENT

LICENCE NO. 8 7 1986

This licence has been granted under the Haryana Development and Regulation, of Urban Areas Act, 1975, and the rules made thereunder to M/s Vee Dee Investment & Agencies Pvt Ltd (P) resident of 21-22 Narindra Place, Parliament Street New Delhi for setting up a residential colony at Village Nathupur Tehsil and Distt. Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the Schedule annexed hereto and duly signed by the Director, Town and Country Planning, Haryana.

3. The licence is granted subject to the following conditions :-

a) that the colony is laid out to conform to the approved layout plans and development works are executed according to the designs and specifications shown in the approved plan accompanying this licence;

b) that the conditions of the agreement already executed are duly fulfilled and the provisions of the Haryana Development and Regulation of Urban Areas Act, 1975 and the rules made thereunder are duly complied with.

a) that the demarcation plan of the colony area is submitted before starting the development works in the colony for approval of the zoning plan.

4. The licence is valid upto 24.1.1988

(G.Madhavan)
Director,
Town and Country Planning,
Haryana, Chandigarh.

Dated 25.1.1986

Endst.No. 5DP-86/ 1190 Dated 28/1/86

A copy is forwarded to the following for information and necessary action:-

1. M/s Vee Dee Investment & Agencies Pvt Ltd (P) 21-22 Narindra Place, New Delhi
2. The Chief Administrator, HUDA, Panchkula.
3. The Chief Engineer, HUDA, Panchkula.
4. The Chief Coordinator, Planner, NCR, Gurgaon.

Director,
Town and Country Planning,
Haryana, Chandigarh.

8/81

Schedule of land of M/s VEE DEE Investment and Agencies Pvt.Ltd.

Land at Village	Khasra No.	Area Bigha	Biswa (Pukhta)	Area Bigha	Biswa (Kham
Nathupur	121	1	- 14		
	122	3	- 14		
	431	0	- 16		
		6	- 4	18	- 12
Nathupura	119	3	- 2	9	- 16
	375	1	- 10		
	430	3	- 9		
	14/15 share	4	- 19 4-13	13	- 19
Nathupur	427/1	0	- 6		
	14/15 share	0	- 5½	0	- 16½
G.Total		14	- 4½	42	- 13½

or say 8.89 acres.

Sd/-
for Vee Dee Investment and Agencies Pvt. Ltd.New Delhi

Director,
Town and Country Planning Haryana
Chandigarh.

Form LC-V
(See rule 12)
Haryana Government
Town and CountryPlanning Department

Licence No. 30 of 1986

This licence has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975 and the rules made thereunder to M/s Apollo Land & Housing Co Ltd. resident of 21-22 Narindra Place, Parliament Street, New Delhi for setting up of a residential colony at Village Nathupur Tehsil and Distt. Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the Schedule annexed hereto and duly signed by the Director, Town and CountryPlanning, Haryana.

3. The licence granted is subject to the conditions:-

a) that the colony is laid out to conform to the approved layout plan and development works are executed according to the designs and specifications shown in the approved plan accompanying this licence.

b) that the conditions of the agreement already executed are duly fulfilled and the provisions of the Haryana Development and Regulation of Urban Areas Act, 1975 and Rules made thereunder are duly complied with.

c) that the demarcation plan of the colony area is submitted before starting the development works in the colony for approval of the zoning plan.

4. The licence is valid upto 6.6.1988

Dated 7.6.1986

(G.Madhavan)
Director,
Town and Country Planning,
Haryana, Chandigarh.

Endst.No. 5DP-86/ 6949 Dated 8/6/86

A copy is forwarded to the following for information and necessary action:-

1. M/s Apollo Land & Housing Co Ltd
21-22 Narindra Place, Parliament Street, New Delhi.
2. The Chief Administrator, HUDA, Panchkula.
3. The Chief Engineer, HUDA, Panchkula.
4. The Chief Coordinator Planner, NCR, Gurgaon.

Director,
Town and Country Planning,
Haryana, Chandigarh.

311

APOLLO LAND AND HOUSING CO. PVT. LTD.

22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI-110 001

Ref. No. :

Dated.....198

DETAILS OF LAND OF M/S APOLLO LAND & HOUSING CO.PVT.LTD.

Land at village	Khasra No.	Area B - B Pukhta	Area B + B Kham
Nathupur	32 min	0 - 9	1 - 7
-do-	33 min	0 - 12	1 - 16
-do-	34 min	1 - 0	3 - 0
		2 - 1	6 - 3

or say 1.28 acres.

Director Town & Country Planning
Haryana, Chandigarh

for APOLLO LAND & HOUSING CO.PVT.LTD.

(DIRECTOR)

Form LC-V
(See Rule 12)
Haryana Government
Town & Country Planning Department.

Licence No. 3 of 1987.

This licence has been granted under the Haryana Development and Regulation of Urban Areas Act,1975, and the rules made thereunder to M/s Vee Dee Investment & Agencies Pvt. Ltd. resident of 21-22, Narindra Place, Parliament Street, New Delhi for setting up of a residential colony at village Tikampur Tehsil and Distt. Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the Schedule annexed hereto and duly signed by the Director, Town & Country Planning, Haryana.

3. The licence granted is subject to the conditions :-

a) that the colony is laid out to conform to the approved layout plan and development works are executed according to the designs and specifications already approved for this area by this Department and in case there is any enhancement in the service plan estimates, the proportionate bank guarantee shall be deposited by the coloniser.

b) that the conditions of the agreement already executed are duly fulfilled and the provisions of the Haryana Development and Regulation of Urban Areas,Act,1975 and Rules made thereunder are duly complied with.

c) that the demarcation plan of the colony area is submitted before starting the development works in the colony for approval of the zoning plan.

d) The coloniser shall pay the scrutiny fee for the revision of layout plan as & when determined by the Director, Town and Country Planning, Haryana.

e) The coloniser shall meet with the stipulated condition of EWS/LIG and No Profit No Loss category of plots within the licenced area, incase the coloniser fails to obtain the licence for the additional area within this colony.

4. The licence is valid upto 17.3.1994.

Dated 18.3.1987

(R.N. PRASHER)
Director,
Town and Country Planning,Haryana,
Chandigarh.

Endst.No. 5DP-87/3878 Dated 19.3.87.

A copy is forwarded to the following for information and necessary action:-

1. M/s Vee Dee Investment and Agencies Pvt. Ltd.
21-22, Narindra Place, Parliament Street, New Delhi.
2. The Chief Administrator,HUDA, Panchkula.
3. The Chief Engineer,HUDA, Panchkula.
4. The Distt. Town Planner, Gurgaon.

Director,
Town & Country Planning Deptt.,
Haryana, Chandigarh.

3/87

Vee Dee Investment & Agencies Private Limited

21-22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI-110001

To be read with Licence No. 3 of 1987
dated 18.3.1987.

Ref. No..... Dated.....19

Details of Land Phase III

Land at village	Khasra Nos.	Area B-B-B Pukhta	Area B-B-B Kham
Nathupur	375	1-10	
	430	3-9	
	436	1-6	
	427/1	0-6	
	149 min	8-15	
		15-6	
	1/15 share	1-08	3-1-4
-do-	353 min	2-1	
	3/4 share	1-10½	4-11-10
-do-	436	1-6	
	14/15 share	1-4	3-12
-do-	387	1-3	3-9
-do-	167	0-13	
	903/168	1-7	
		2-0	
	1/6 share	0-7	1-1
-do-	463	1-3	3-9
	Total:	6-7-18	19-3-14

or say : 4 Acres

for Vee Dee Investment & Agencies (P) Ltd.,

(DIRECTOR)

(R.K. Anand)
Anand

3/87

M/S VEE DEE INVESTMENT & AGENCIES PRIVATE LIMITED
21-22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI.

To be read with Licence No.3 of 1987 dated 18.3.1987

Land at Village	Khasra No.	Area B - B (Pukhta)	Area B - B (Kham)
Nathupur	52	2 - 10	
	413	0 - 8	
		2 - 18	8 - 14
-do-	149 min	8 - 15	
	14/15 share	8 - $3\frac{1}{3}$	24 - 10
	Total:-	11 - $1\frac{1}{3}$	33 - 4

or say to 6.91 acres

Total area 6.91 acres

Director Town & Country Planning
Haryana, Chandigarh

for VEE DEE INVESTMENT AND AGENCIES PRIVATE LIMITED

(DIRECTOR)

Attorney

3/87

Vee Dee Investment & Agencies Private Limited

21-22, NARINDRA PLACE,
PARLIAMENT STREET,
NEW DELHI-110001

To be read with Licence No. 3 of 1987
dated 18.3.1987.

Sl. No..... Dated.....19

Detail of Land.

Land at village	Khasra No.	Area in Pukhta B - B	Area in Kham B - B
Nathupur	354 min	4 - 16	
	355	0 - 2	
	360	0 - 6	
	349	0 - 3	
	348	0 - 9	
	352/1	0 - 12	
		6 - 8	19 - 4

or say 4 Acres.

For Vee Dee Investment & Agencies (P) Ltd.

Director

DIRECTOR

(R.K. Anand)
Advocate

FORM LC-V

(See Rule 12)

HARYANA GOVERNMENT

TOWN AND COUNTRY PLANNING DEPARTMENT

Licence No. 56 of 1992

1. This licence has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975 and the rules made thereunder to M/s. Delhi Land & Finance Limited, 1-E, Jhandewalan Extention, New Delhi-110055 for setting up of a residential colony at Village Nathupur at Distt. Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the schedule annexed hereto and duly signed by the Director, Town & Country Planning, Haryana.

3. This licence is granted subject to the conditions:-

a) That the colony is laid out to conform to the approved layout plan and development works are executed according to the designs and specifications shown in the approved plan accompanying this licence.

b) That the conditons of the agreements already executed are duly fulfilled and the provisons of Haryana Development and Regulation of Urban Areas Act,1975 and Rules made the thereunder are duly complied with.

c) That the demarcation plan of the colony area in submitted before starting the development works in the colony and for approval of the zoning plan.

4. This licence is valid upto 18.6.1994.

MANIK SOLANKE
I.A.S.
Director, Town & Country Planning,
Haryana, Chandigarh.

Dated: 19-6-1992

Endst. No. 5DP-92/3163 Dated: 19-6-1992.

A copy alongwith a copy of schedule of land is forwarded to the following for information and necessary action :-

1. M/s. Delhi Land & Finance Limited, 1-E, Jhandewalan Extention, New Delhi- 110055.
2. Chief Administrator, HUDA, Panchkula;
3. Addl. Director, Urban Estates, Haryana, Panchkula, UT, Chandigarh
4. Chief Engineer, HUDA, Panchkula;
5. Land Acquisition Officer, Gurgaon;
6. Senior Town Planner, Faridabad;
7. District Town Planner, Gurgaon;
8. Accounts Officer, o/o D.T.C.P. Haryana, Chandigarh

Director,
Town & Country Planning,
Haryana, Chandigarh.

DETAILS OF LAND OF M/S DELHI LAND AND FINANCE LTD.

Land at Village	Khasra No.		Area B - B - B
Nathupur	368/1		0 - 08 - 10
	369		0 - 14 - 0
	370/1		0 - 18 - 0
	24		0 - 15
	131/2/1		1 - 05 - 10
	383	3-16	
	385	0-14	
	394	0-06	
		4-16	
	2/3 share		3 - 04 - 0
	384 min		1 - 14 - 10
		Total:	8 - 19 - 10
		Or say :	5.61 acres.

Director
Town & Country Planning
Haryana, Chandigarh

Form LC-V
(See Rule 12)
HARYANA GOVERNMENT
TOWN AND COUNTRY PLANNING DEPARTMENT

Licence No. 6 of 2001

1. The Licence has been granted under the Haryana Development & Regulation of Urban Areas Act 1975 & the Rules 1976 made thereunder to M/s DLF Housing & Construction Ltd., DLF Centre, Sansad Marg, New Delhi - 110 001 for setting up of Residential Colony at Village Chakkarpur, Shahpur, Sarhaul and Nathupur, Distt.Gurgaon.

2. The particulars of the land wherein the aforesaid colony is to be set up are given in the schedule annexed hereto and duly signed by the Director, Town & Country Planning, Haryana.

3. The Licence is granted subject to the following conditions :-

a) That the residential colony is laid out to conform to the approved layout plan and development works are executed according to the design & specification shown in the approved plan.

b) That the conditions of the agreements already executed are duly fulfilled and provisions of Haryana Development and Regulation of Urban Areas Act, 1975 and the Rules 1976 made thereunder are duly complied with.

c) That the demarcation plan of the colony is submitted before starting the development works in the colony and for approval of the zoning plan.

d) The EDC rates are under review and are likely to be finalised soon, in the event of increase in EDC rates the licencee shall pay the enhanced rate of EDC and the interest on instalments, if any from the date of grant of licence. The proportionate additional bank Guarantee on additional EDC amount shall also be furnished by the licencee.

4. That the portion of Sector / Master Plan road which shall form apart of the licenced area, shall be transferred free of cost to the Government in accordance with Section 3(3)-(a) (iii) of the Haryana Development & Regulation of Urban Areas, 1975.

5. The licence is valid upto 30-8-2003

Dated : Chandigarh
the 31-8-01

(N.C. WADHWA)
Director, Town & Country Planning,
Haryana, Chandigarh.

Endst. No. 5DP(iii) -2001/ 11765 Dated : 3-9-01

A copy alongwith a copy of schedule of land is forwarded to the following for information and necessary action :-

1. M/s DLF Housing & Construction Ltd., DLF Centre, Sansad Marg, New Delhi - 110 001 alongwith copy of agreements.
2. Chief Administrator, Haryana Urban Development Authority, Panchkula.
3. Addl. Director, Urban Estates, Haryana, Panchkula.
4. Chief Engineer, HUDA, Panchkula.
5. Superintending Engineer, HUDA, Gurgaon.
6. Land Acquisition Officer, Gurgaon.
7. Senior Town Planner, Gurgaon.
8. Senior Town Planner (Enforcement), Chandigarh.
9. Distt. Town Planner, Gurgaon.
10. Accounts Officer, O/O Director, Director Town & Country Planning, Haryana, Chandigarh alongwith a copy of the agreement LC-IV.

Distt. Town Planner HQ (MS)
For Director, Town & Country Planning,
Haryana, Chandigarh.

D/A As above.

To be read with Licence No. 6 of 2001

Detail of land owned by M/s D.L.F. Housing & Construction Ltd., Teh. & Distt. Gurgaon

	Village	Khasra No.		Area Taken B-B-B	
Ph.I	Chakarpur	582/2/1		0-14-0	
		582/2/2		0-14-0	
		582/2/3		0-11-0	
		582/2/4		0- 5-0	
		Total :		2- 4-0	or 1.375 acres
Ph.II	Village	Rect.	Killa No.	Area K.M.	
	Sarhaul	35	14/2/7	0-18	
			17/1/3	0- 6	
			7/2/1	0-17	
			14/2/3	0-17	
			14/2/4	0-17	
			14/2/5	0-17	
			14/2/6	0-17	
			17/1/1	0-17	
			17/1/2	0-17	
			7/2/7/2	0- 5	
	Shahpur	14	21/1	2-14	
			21/3	0- 4	
			21/4	1-12	
		17	1/1/1/1	0-15	
			Total :	12-13	Or 1.581 acres
Ph.III	Nathupur	Kh.No.		Area B-B-B	
		21		0-17-0	
		22		0-14-0	
		23		0-19-0	
		25		0- 1-0	
				2-11-0	or 1.593 acres
		34/1/1		0-3-2	or 0.096 acres
		514		0-8-0	
		515		0-9-0	
				0-17-0	or 0.53125 acre
			Total	2.22025 Acres	

G. Total : Ph. I + II + III = 5.17625 acres

Director,
Town and Country Planning,
Haryana, Chandigarh.
Chhotu Ram Jha

FORM LC-V
(See Rule 12)
HARYANA GOVERNMENT
TOWN AND COUNTRY PLANNING DEPARTMENT

Licence No. 36 of 2004

1. This licence has been granted under the Haryana Development & Regulation of Urban Areas Act, 1975 & the Rules, 1976 made thereunder to M/s DLF Universal Limited, DLF Centre, Sansad Marg, New Delhi, for setting up of a Residential colony at village Nathupur & Shahpur, District Gurgaon.

2. The particulars of land wherein the aforesaid colony is to be set up are given in the Schedule annexed hereto and duly signed by the Director, Town & Country Planning, Haryana.

3. The licence is granted subject to the following conditions: -

   a) That the residential colony is laid out to conform to the approved layout plan and development works are executed according to the designs and specifications shown in the approved plan.

   b) That the conditions of the agreement already executed are duly fulfilled and the provisions of Haryana Development & Regulation of Urban Areas Act, 1975 & the Rules, 1976 made thereunder are duly complied with.

   c) That the demarcation plan of the colony is submitted before starting the development works in the colony and for approval of the zoning plan.

   d) The EDC rates are under review and are likely to be finalized soon; in the event of increase in EDC rates the licencee shall pay the enhanced rate of EDC and the interest on installments, if any from the date of grant of licence. The proportionate additional bank Guarantee on additional EDC amount shall also be furnished by the licencee.

4. That the portion of Sector/Master Plan road which shall form part of the licenced area, shall be transferred free of cost to the Government in accordance with Section 3(3)(a)(iii) of the Haryana Development & Regulation of Urban Areas Act, 1975.

5. This licence is valid upto 30-3-2006.

Dated Chandigarh
the 31-3-2004.

(N C WADHWA)
Director, Town & Country Planning,
Haryana, Chandigarh.

Endst. No. 5DP(III)-2004/ 4700 Dated: 2-4-2004

A copy alongwith a copy of schedule of land is forwarded to the following for information and necessary action: -

1. M/s DLF Universal Limited, DLF Centre, Sansad Marg, New Delhi-110001, alongwith copy of agreement.
2. Chief Administrator, HUDA, Panchkula, alongwith copy of agreement.
3. Addl. Director, Urban Estate, Haryana, Panchkula;
4. Chief Engineer, HUDA, Panchkula;
5. Superintending Engineer, HUDA, Gurgaon, alongwith copy of agreement.
6. Land Acquisition Officer, Gurgaon.
7. Senior Town Planner, Gurgaon, alongwith copy of agreement.
8. Senior Town Planner (Enforcement), Chandigarh;
9. District Town Planner, Gurgaon, alongwith copy of agreement and
10. Accounts Officer, O/O DTCP, Haryana, Chandigarh alongwith copy of agreement.

DA/As above

District Town Planner (HQ) JS,
For Director, Town & Country Planning,
Haryana, Chandigarh.

36/043

TO BE READ WITH LICENCE NO. 36 OF 2004

DETAILS OF LAND OF M/S DLF UNIVERSAL LIMITED AT VILLAGE NATHUPUR & SHAHPUR, TEH. & DISTT. GURGAON.

Village	Khasra No.	Area B-B-B
Nathupur	19	0-11-0
	20	0-7-0
	465	0-10-0
	738	0-13-0
	739/2	0-5-10
	814/3	0-16-0
	739/1	0-5-10
	Total :	3-8-0
		Or Say 2.125 Acres

Village	Rect. No.	Killa No.	Area K-M
Shahpur	11	25/2/2	2-0
	12	11/2	0-15
		Total	2-15
			or Say 0.344 Acres
		G.T.	2.469 Acres

FORM LC –V
(See Rule 12)
HARYANA GOVERNMENT
TOWN AND COUNTRY PLANNING DEPARTMENT

License No. 69 **of 2013**

This License has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975 & the Rule 1976, made there under to DLF Ltd., DLF Home Developers Ltd., Sh. Raju, Sh. Mahinder Ss/o Sh. Sivana @ Shiv Lal, Sh. Gaj Raj Singh, Sh. Kishan Chand, Sh. Rama Nand Ss/o Sh. Jallu @ Jal Singh, Sh. Umang Maan, Sh. Satish Kumar Ss/o Sh. Jai Singh, Smt. Shanti D/o Sh. Mahadeva Ram, Sh. Sanjay, Mahabir, Satbir, Ashok, Jitender Ss/o Sh. Prakash, Sh. Prakash S/o Bhagmal, Sukh Ram S/o Indraj, Sh. Rajesh Kumar, Sh. Rakesh Kumar, Sh. Surender Singh, Sh. Rajinder Singh Ss/o Balbir, Smt. Sushma Yadav W/o Mahabir Singh, Sh. Rakesh, Jugnu Ss/o Ram Kanwar, Rohtash, Ram Kanwar Ss/o Ram Lal, Birender Singh, Surender Singh, Sahab Ram Ss/o Ram Kishan, Smt. Savita Devi Wd/o Hans Raj, Ravinder Kumar, Harish Yadva Ss/o Sh. Hans Raj, Jai Kishan S/o Khecharu,Dhrampal, Dharambir, Hari Pal, Ranbir Singh Ss/o Ramu, Smt. Santosh Wd/o Sh. Tejpal, Mohan Ram, Sohan Ram Ss/o Sh. Tej Pal C/o DLF LTD. DLF Shopping Mall, 3rd floor, Arjun Marg, DLF City, Phase-1, Gurgaon-122002 for setting up of a RESIDENTIAL PLOTTED COLONY on the land measuring 12.915625 acres falling in the revenue estate of village Chakkarpur, Sarhaul, Nathupur & Sikanderpur Ghosi, Sector 24, 25, 25A, 26A & 28, Distt. Gurgaon.

1. The particulars of the land wherein the aforesaid colony is to be set up are given in the Schedule annexed hereto and duly signed by the Director General, Town & Country Planning, Haryana.
2. The License granted is subject to the following conditions:
   a) That the Plotted Colony area is laid out to conform to the approved layout plan and development works are executed according to the designs and specifications shown in the approved plan.
   b) That the conditions of the agreements already executed are duly fulfilled and the provisions of Haryana Development and Regulation of Urban Areas Act, 1975 and the Rules 1976 made there under are duly complied with.
   c) That the demarcation plan of the Plotted Colony area is submitted before starting the development works in the colony and for the approval of zoning plan.
3. That the licensee shall construct the portion of service road falling through your side at your own cost and entire road shall be transferred to the Government free of cost.
4. That the portion of Sector/Master plan road which shall form part of the licensed area shall be transferred free of cost to the Government in accordance with the provisions of Section 3(3)(a)(iii) of the Haryana Development and Regulation of Urban Areas Act, 1975.
5. That the licensee will not give any advertisement for sale of plots/shops/office/floor area in colony before the approval of layout plan.
6. That you will have no objection to the regularization of the boundaries of the license through give and take with the land that HUDA is finally able to acquire in the interest of planned development and integration service. The decision of the competent authority shall be binding in this regard.
7. That you shall obtain approval/NOC from competent authority to fulfill the requirement of notification dated 14-09-2006 of Ministry of Environment & Forest, Govt. of India before starting the development works of the colony.
8. That the developer will use only CFL fittings for internal lighting as well as campus lighting.
9. That you shall convey the 'Ultimate Power Load Requirement' of the project to the concerned power utility, with a copy to the Director, with in two months period from the date of grant of license to enable provision of site in your land for Transformers/Switching Station/Electric Sub-Stations as per the norms prescribed by the power utility in the zoning plan of the project.

10. That the colonizer shall abide by the policy dated 03.02.2010 & 14.06.2012 related to allotment of EWS plots/flats.
11. That at the time of booking of the plots/flats in the licensed colony, if the specified rates of plots/flats do not include IDC/EDC rates and are to be charged separately as per rates fixed by the Government from the plots/flats owners, you shall also provide details of calculations per sq. mtrs./per. sq. ft. to the allottee while raising such demand from the plots/flats owners.
12 That you shall make arrangement for water supply, sewerage, drainage etc, to the satisfaction of the competent authority till the external services are made available from the external infrastructure to be laid by HUDA.
13 That you shall provide the rain water harvesting system as per central ground water Authority Norms/Haryana Govt. notification as applicable.
14 That you shall provide the Solar water heating system as per by HAREDA and shall be made operational where applicable before applying for an occupation certificate.
15 That you shall pay labour cess as per policy dated 04.05.2010.
16. That the grant of present license is apropos the indemnity bond furnished by you dated 20.06.2013 and is subject to the outcome of final decision any legal pronouncement by any court of law.
17. The license is valid up to 24/7/2017

Dated: The 25/7/2013.
Chandigarh

(Anurag Rastogi, IAS)
Director General, Town & Country Planning
Haryana, Chandigarh
Email: tcphry@gmail.com

Endst. No. LC-538-II-JE (VA)/2013/ 47385 Dated: 30/7/13

A copy along with a copy of schedule of land is forwarded to the following for information and necessary action: -

1. DLF Ltd., DLF Home Developers Ltd., Sh. Raju, Sh. Mahinder Ss/o Sh. Sivana @ Shiv Lal, Sh. Gaj Raj Singh, Sh. Kishan Chand, Sh. Rama Nand Ss/o Sh. Jallu @ Jal Singh, Sh. Umang Maan, Sh. Satish Kumar Ss/o Sh. Jai Singh, Smt. Shanti D/o Sh. Mahadeva Ram, Sh. Sanjay, Mahabir, Satbir, Ashok, Jitender Ss/o Sh. Prakash, Sh. Prakash S/o Bhagmal, Sukh Ram S/o Indraj, Sh. Rajesh Kumar, Sh. Rakesh Kumar, Sh. Surender Singh, Sh. Rajinder Singh Ss/o Balbir, Smt. Sushma Yadav W/o Mahabir Singh, Sh. Rakesh, Jugnu Ss/o Ram Kanwar, Rohtash, Ram Kanwar Ss/o Ram Lal, Birender Singh, Surender Singh, Sahab Ram Ss/o Ram Kishan, Smt. Savita Devi Wd/o Hans Raj, Ravinder Kumar, Harish Yadva Ss/o Sh. Hans Raj, Jai Kishan S/o Khecharu,Dhrampal, Dharambir, Hari Pal, Ranbir Singh Ss/o Ramu, Smt. Santosh Wd/o Sh. Tejpal, Mohan Ram, Sohan Ram Ss/o Sh. Tej Pal C/o DLF LTD. DLF Shopping Mall, 3rd floor, Arjun Marg, DLF City, Phase-1, Gurgaon-122002 alongwith a copy of agreement, LC-IV B, Bilateral agreement & Layout Plan.
2. Chairman, Pollution Control Board, Haryana, Sector-6, Panchkula.
3. Chief Administrator, HUDA, Panchkula.
4. Chief Administrator, Housing Board, Panchkula alongwith copy of agreement.
5. Managing Director, HVPN, Planning Directorate, Shakti Bhawan, Sector-6, Panchkula.
6. Joint Director, Environment Haryana – Cum-Secretary, SEAC, Paryavaran Bhawan, Sector -2, Panchkula.
7. Addl. Director Urban Estates, Haryana, Panchkula.
8. Administrator, HUDA, Gurgaon.
9. Chief Engineer, HUDA, Gurgaon.
10. Superintending Engineer, HUDA, Gurgaon along with a copy of agreement.
11. Land Acquisition Officer, Gurgaon.
12. Senior Town Planner, Gurgaon.
13. Senior Town Planner (Enforcement), Haryana, Chandigarh.
14. District Town Planner, Gurgaon along with a copy of agreement & Layout Plan.
15. Chief Accounts Officer (Monitoring) O/o DGTCP, Haryana.
16. Accounts Officer, O/o Director General, Town & Country Planning, Haryana, Chandigarh along with a copy of agreement.

(SANJAY KUMAR)
District Town Planner (HQ)
For Director General, Town & Country Planning
Haryana Chandigarh

To be read with licence No. 69 of 2013/25-7-2013

1. Detail of land owned by DLF Limited Village Sarhaul, Chakkarpur and Nathupur Distt. Gurgaon.

Village	Rect. No.	Killa No.	Area K-M
Sarhaul	42	14/2	0-5
		17/1	4-12
		Total	**4-17**

	Khasra No.	Area B-B-B
Chakkarpur	586/2/4	0-4-0
	586/2/5	0-3-0
	586/2/6	0-3-8
	586/2/7	0-1-8
	586/2/8	0-1-16
	586/2/9	0-1-8
	586/2/10	0-1-16
	586/2/11	0-1-8
	586/2/12	0-1-16
	Total	**1-0-0**
Nathupur	797/3/1	0-7-0
	657	1-3-0
	658	1-1-0
	Total	**2-11-0**

2. Detail of land owned by DLF Home Developers Ltd. Village Nathupur Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Nathupur	157/3/2	0-7-10
	158/3	0-3-12
	31/2	0-13-0
	Total	**1-4-2**

3. Detail of land owned by Sh. Raju S/o Sh. Sivana @ Shiv Lal. Village Nathupur Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Nathupur	159/1/3	**0-3-19**

4. Detail of land owned by Sh. Gaj Raj Singh S/o Sh. Jallu @ Jal Singh Village Sikanderpur Ghosi Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Sikanderpur Ghosi	18/2	**0-4-7**

D.G.T.C.P. (Hr.)
Chd.

Contd.....P/2

5. Detail of land owned by Sh. Kishan Chand S/o Sh. Jallu @ Jal Singh Village Sikanderpur Ghosi Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Sikander pur Ghosi	18/3	0-4-7

6. Detail of land owned by Sh. Rama Nand S/o Sh. Jallu @ Jal Singh Village Sikanderpur Ghosi Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Sikander pur Ghosi	18/1	0-4-7

7. Detail of land owned by Sh. Mahinder S/o Sh. Sivana @ Shiv Lal Village Nathupur Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Nathupur	159/1/4	0-1-10

8. Detail of land owned by Sh. Umang Maan S/o Sh. Jai Singh 48/85 Share, Satish Kumar S/o Sh. Jai Singh 25/85 Share, Smt Shanti D/o Sh. Mahadeva Ram 12/85 Share Village Sarhaul Distt. Gurgaon.

Village	Rec No.	Killa No.	Area K-M
Sarhaul	35	7/2/6	0-17

9. Detail of land owned by Sh. Umang Maan S/o Sh. Jai Singh Village Sarhaul Distt. Gurgaon.

Village	Rec No.	Killa No.	Area K-M
Sarhaul	35	7/2/3	0-17

10. Detail of land owned by Sh. Sanjay, Mahabir, Satbir, Ashok, Jitender Ss/o Sh. Prakash S/o Bhagmal equal share 1/5 share, Prakash S/o Bhagmal 3/10 share, Sukh Ram S/o Indraj 1/2 Share Village Nathupur Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Nathupur	503	4-3-0
	768/2	0-14-0
	Total	4-17-0

11. Detail of land owned by Sh. Rajesh Kumar, Rakesh Kumar, Surender Singh, Rajinder Singh Ss/o Balbir S/o Ramrikh Village Nathupur Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Nathupur	31/1/1	0-13-0

12. Detail of land owned by Smt Sushma Yadav W/o Mahabir Singh Village Nathupur Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Nathupur	18/1	0-5-10

D.G.T.C.P. (Hr.)

Contd.....P/3

13. Detail of land owned by Sh. Rakesh, Jugnu Ss/o Ram Kanwar Equal 1/72 share Rohtash S/o Ram Lal 1/6 share, Ram Kanwar S/o Ram Lal 11/72 Share, Birender Singh, Surender Singh, Sahab Ram (Ss/o) Ram Kishan S/o Maha Singh Equal 1/2 share Smt. Savita Devi wd/o Hans Raj, Ravinder Kumar, Harish Yadav Ss/o Hans Raj equal 1/6 share Village Nathupur Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Nathupur	124/1	4-4-0

14. Detail of land owned by Sh. Jai Kishan S/o Khecharu S/o Budha Village Nathupur Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Nathupur	497/1	0-2-0

15. Detail of land owned by DLF Limited Village Chakkarpur Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
ChakKarpur	147	0-14-0
	149	0-13-0
	Total	1-7-0

16. Detail of land owned by Sh. Dharam Pal, Dharambir, Hari Pal, Ranbir Singh, Ss/o Ramu equal 4/5 Share, Smt. Santosh wd/o of Tej Pal, Mohan Ram, Sohan Ram Ss/o Tej Pal equal 1/5 share Village Nathupur Distt. Gurgaon.

Village	Khasra No.	Area B-B-B
Nathupur	915/741	0-8-0
	916/741	1-17-0
	Total	2-5-0

II.	Grand Total of village Sarhaul, Nathupur, Chakarpur, & Sikanderpur Ghosi	B-B-B 19-7-2	or 12.096875 Acres
II.	Grand Total of Village Sarhaul	6K-11M	or 0.81875 Acre
	Grand Total		12.915625 Acres

Director General
Town and Country Planning,
Haryana, Chandigarh

Enclosure 15: Basement Plan

LEGEND	
2	100Ø WASTE PIPE FOR AHU
4	DOMESTIC WATER SUPPLY
PD-3	100Ø M.S DRAIN PIPE CUTOUT 150X150mm
PD-3S	150Ø M.S DRAIN PIPE CUTOUT 250X250mm
SR-3	100Ø SUMP RISER CUTOUT 150X150mm
FHC	FIRE HOSE CABINET
7	150Ø WET RISER
6	80Ø DRAIN PIPE

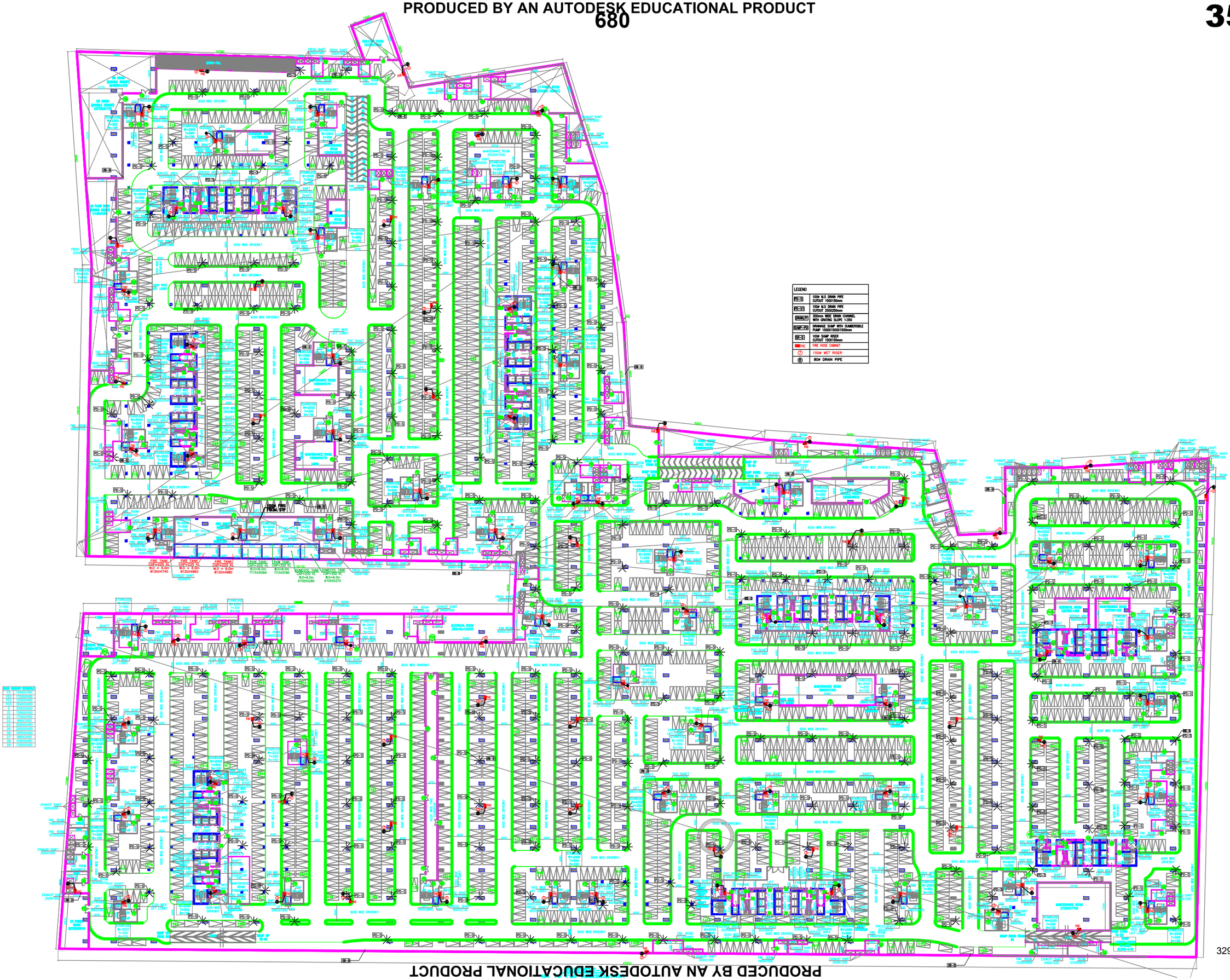
LEGEND	
PD-3	100Ø M.S DRAIN PIPE CUTOUT 150X150mm
PD-3S	150Ø M.S DRAIN PIPE CUTOUT 250X250mm
SR-3	100Ø SUMP RISER CUTOUT 150X150mm
FHC	FIRE HOSE CABINET
7	150Ø WET RISER
6	80Ø DRAIN PIPE

FIRE HYDRANT SCHEDULE	
FH1	1500X2450
FH2	1500X2450
FH3	3500X2450
0	3000X2450
01	1500X2450
02	1500X2450
03	9000X2450
04	3000X2450
05	2000X2450
06	3000X2450
07	6800X2450
08	1500X2450
09	1200X2450

BASEMENT-1
NO. OF CAR PARKING=2073
LVL=-6750

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

BASEMENT-3
NO. OF CAR PARKING=2143
LVL-16250

RSMS ARCHITECTS

RSMS ARCHITECTS PVT. LTD.
69,Nora Niwas Bhawani Kunj
(Behind D2), Vasant Kunj,
New Delhi-110070.
Tel.: 011-26898616,26898617
www.rsms-arch.com

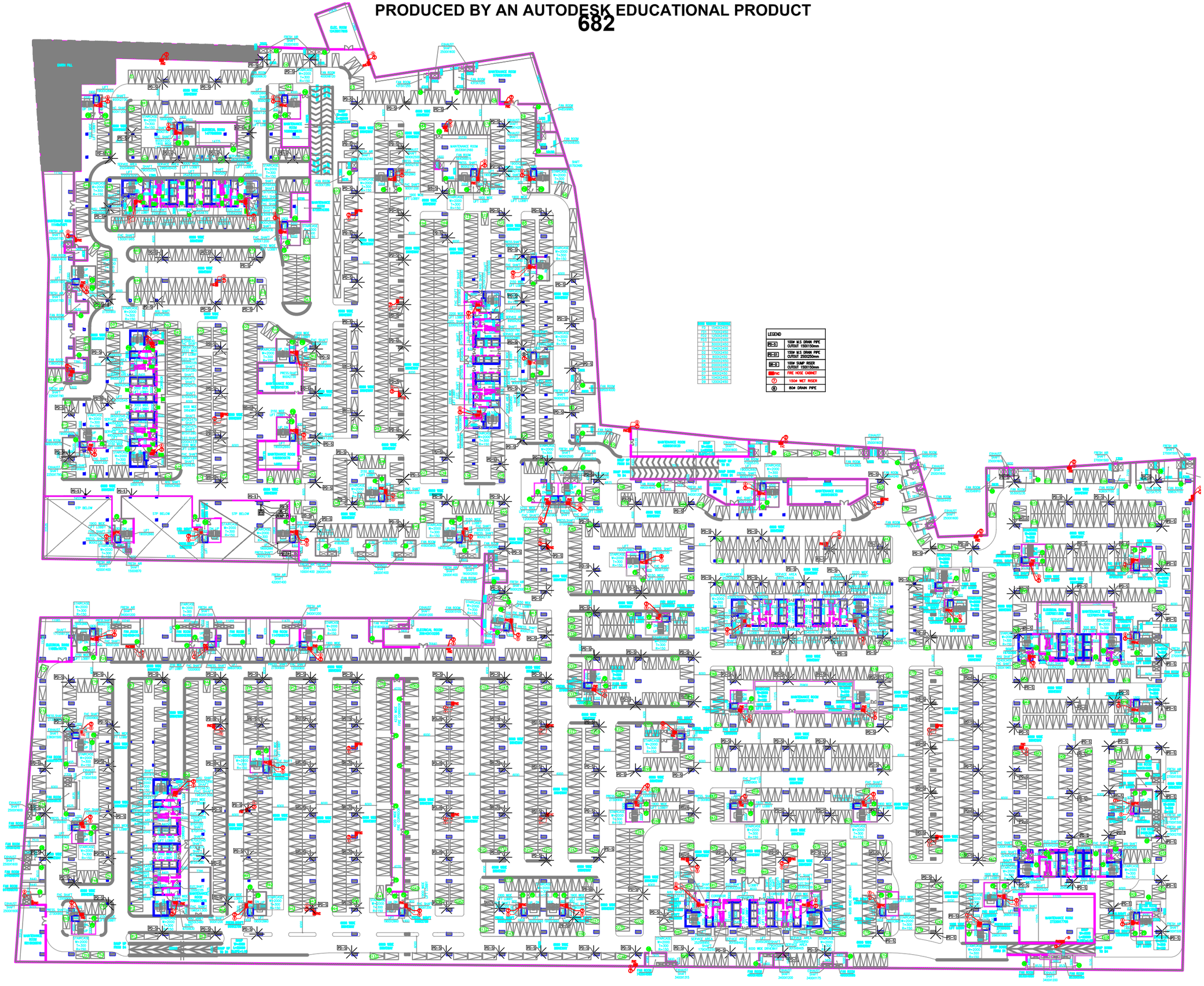
Project:
PROPOSED SUBMISSION OF 32.36 ACRES SITE OF SHOPPING/ COMMERCIAL IN BLOCK-V, SECTOR-25A, OF DLF CITY, DLF PHASE-III, GURGAON, HARYANA.

OWNER: DLF CITY CENTRE LTD.
(THE SHOPPING MALL COMPLEX ,ARJUN MARG, DLF CITY,PHASE-I ,GURGAON - 122002 , HARYANA.)

DRAWING TITLE:-
BASEMENT-03 PLAN

REVISION	JOB NO:-	DRG NO.	NORTH:-
	1:400	BS-03	N
	SCALE:-	DATE:-	
		01-01-2018	
FILE:-	DEALT BY:-	CHECKED BY:	APPROVED BY:-
ARCHITECT'S SEAL & SIGNATURE		OWNER'S SEAL & SIGNATURE	

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



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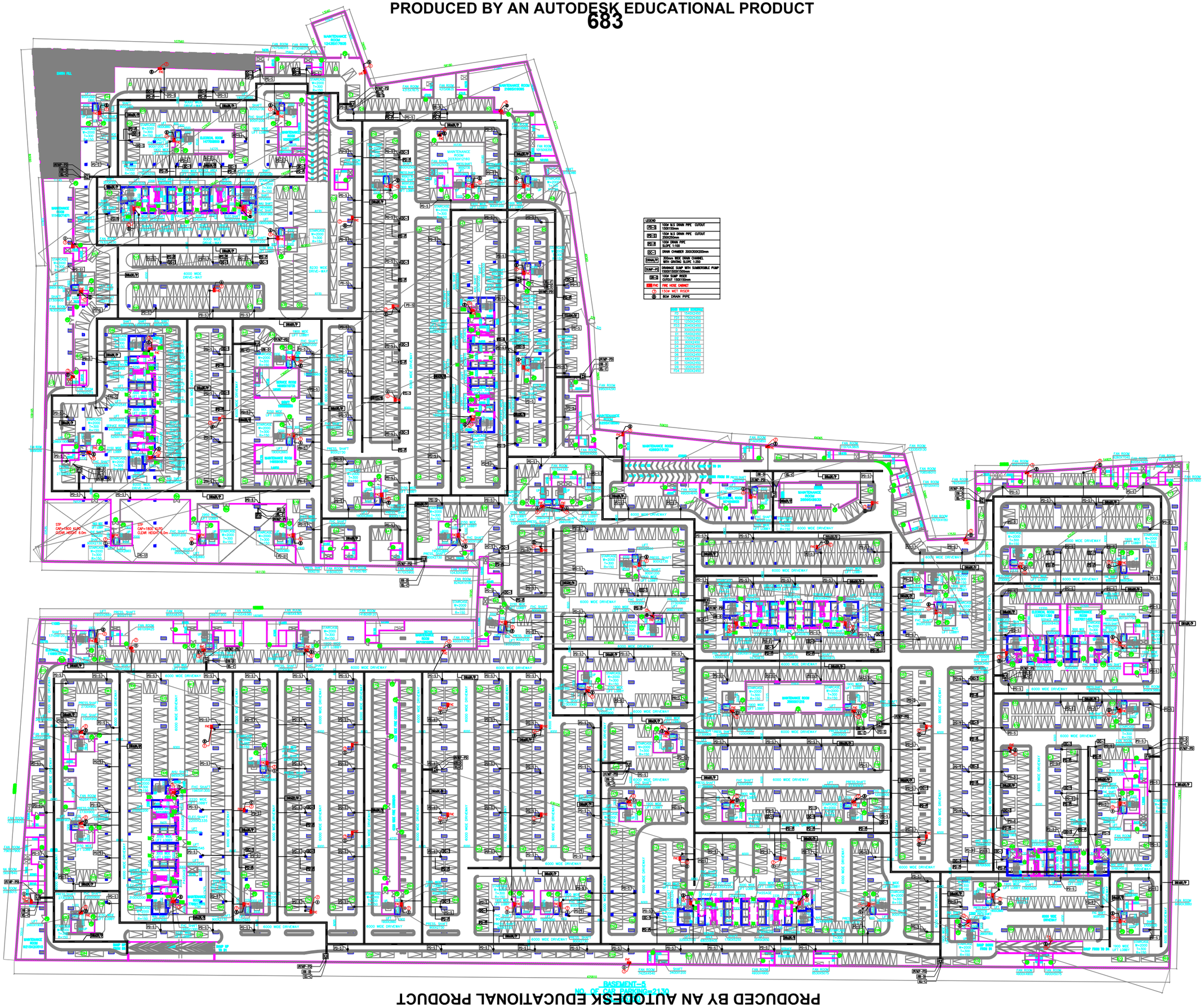
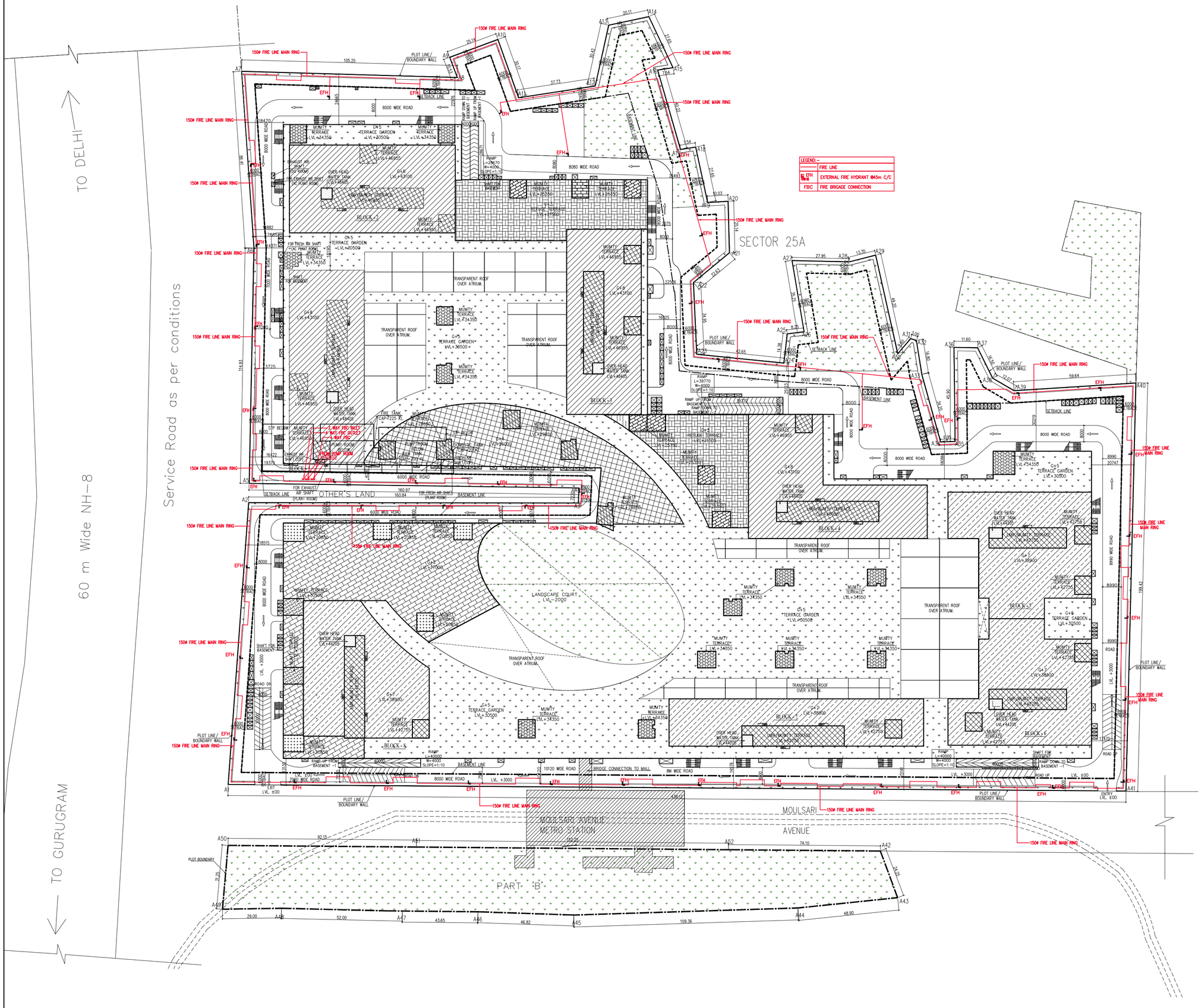


PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

Enclosure 16: Fire-Fighting Plan



DRG NO. ST-01(E)

RSMS ARCHITECTS

RSMS ARCHITECTS PVT. LTD.
69,Nora Niwas Bhawani Kunj
(Behind D2), Vasant Kunj,
New Delhi-110070.
Tel.: 011-26898616,26898617
www.rsms-arch.com

Project:

PROPOSED SUBMISSION OF 32.36 ACRES SITE OF SHOPPING/ COMMERCIAL IN BLOCK-V, SECTOR-25A, OF DLF CITY, DLF PHASE-III, GURGAON, HARYANA.

OWNER: DLF CITY CENTRE LTD.
(THE SHOPPING MALL COMPLEX ,ARJUN MARG, DLF CITY,PHASE-I ,GURGAON - 122002 , HARYANA.)

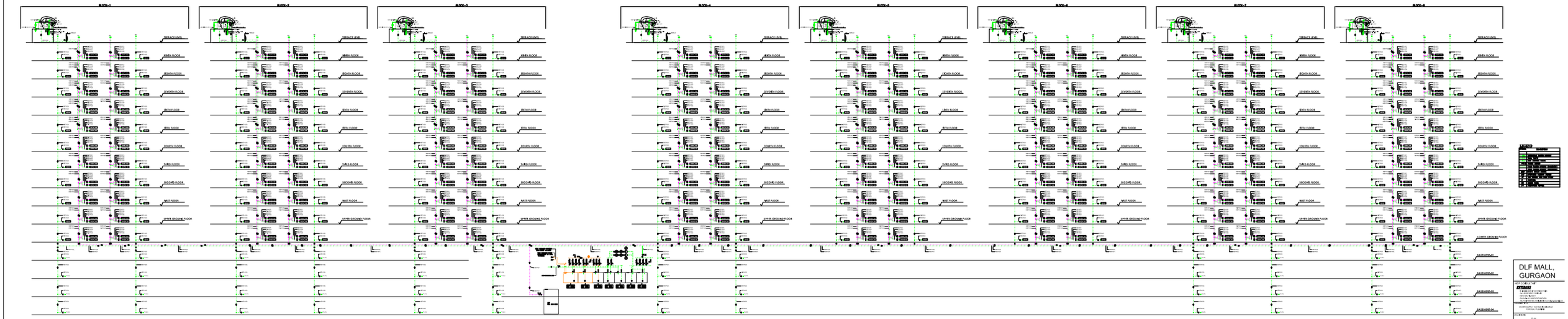
DRAWING TITLE:-

SITE PLAN
(FIRE SCHEME)

REVISION	JOB NO:-	DRG NO. ST-01(F)	NORTH:- N
	SCALE:- 1:700	DATE:- 01-01-2018	
FILE:-	DEALT BY:-	CHECKED BY:	APPROVED BY:-

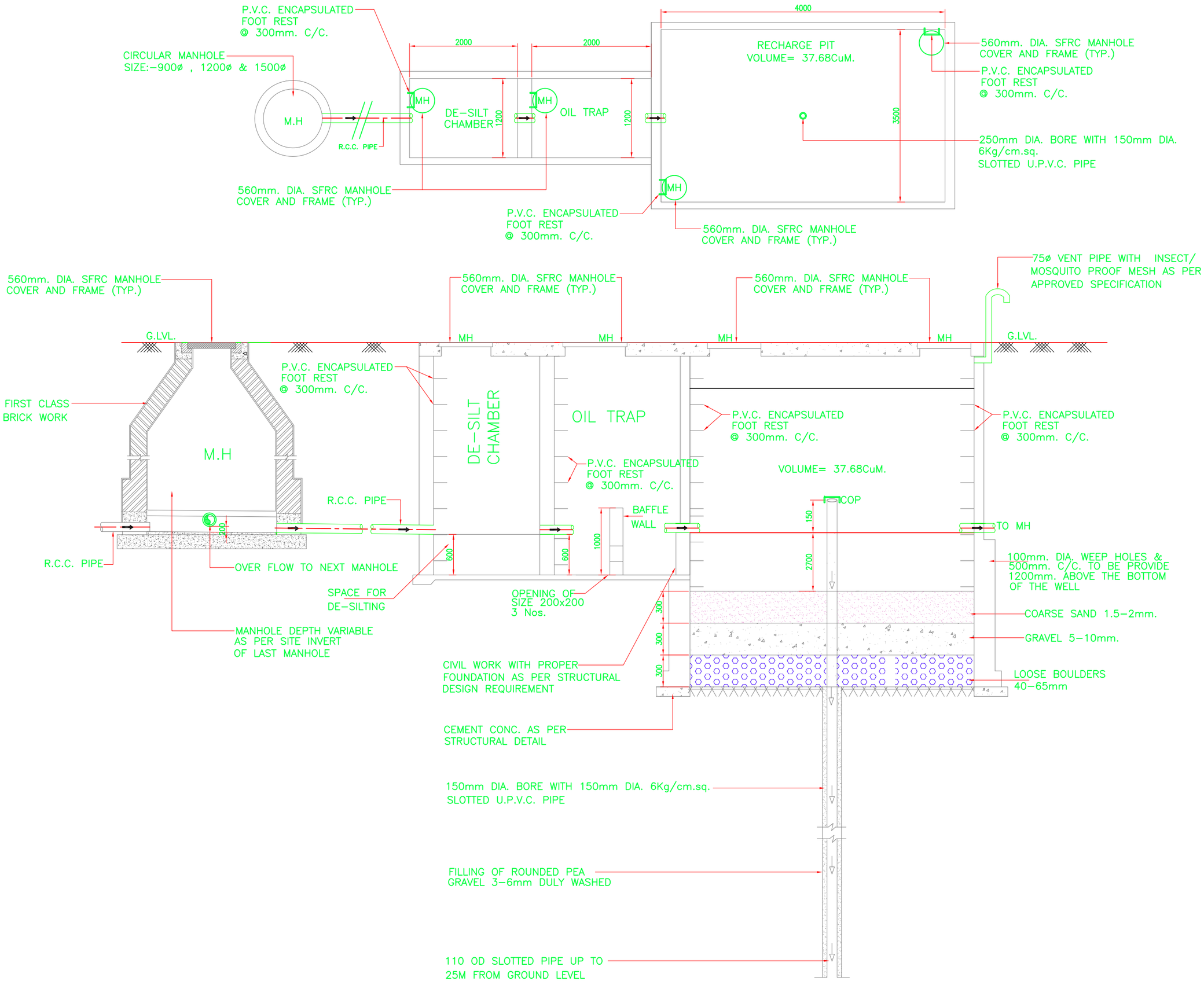
ARCHITECT'S SEAL & SIGNATURE | OWNER'S SEAL & SIGNATURE

Enclosure 17: Dual Plumbing Plan

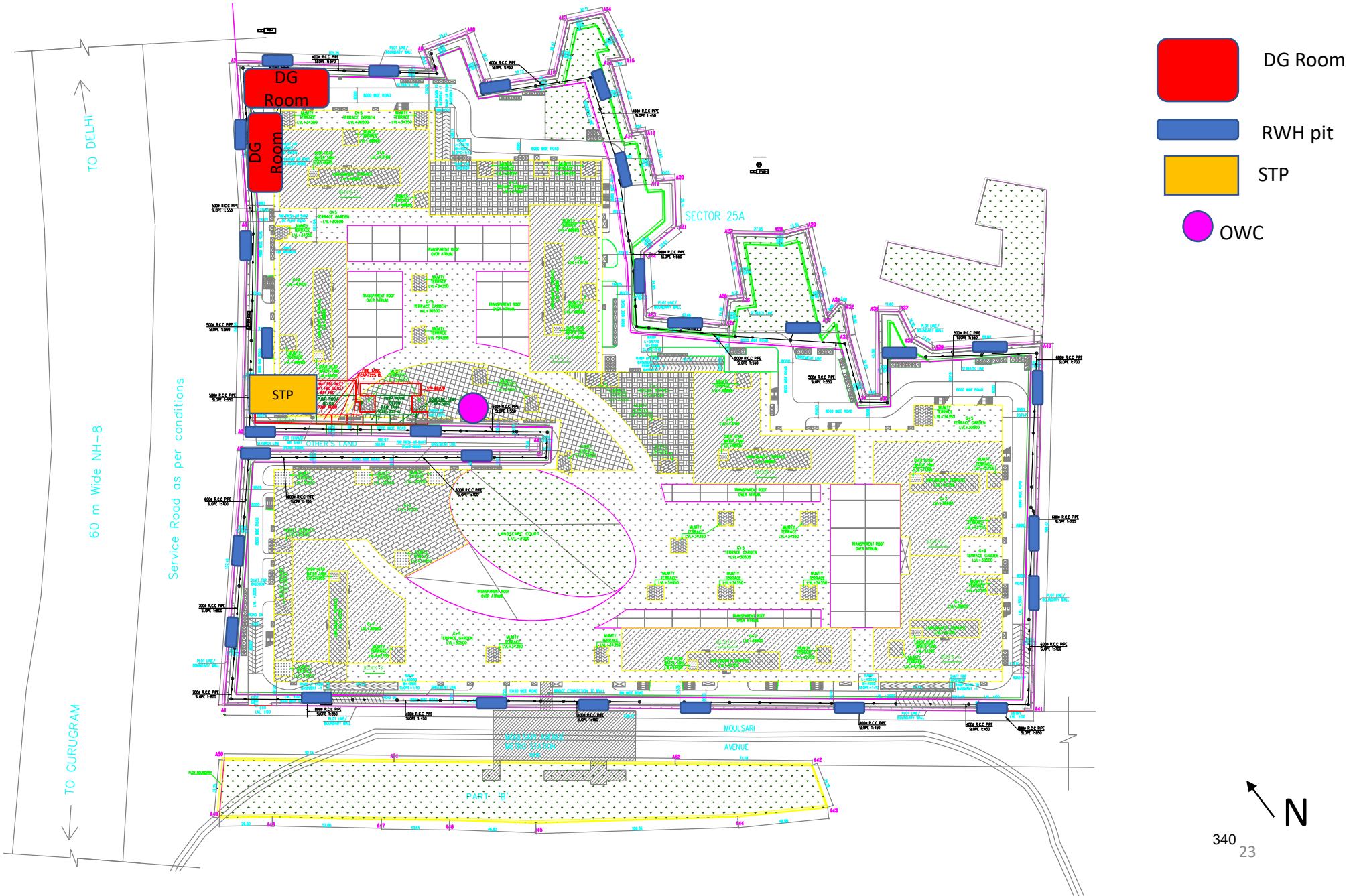

BLOCK-1
BLOCK-2
BLOCK-3
BLOCK-4
BLOCK-5
BLOCK-6
BLOCK-7
BLOCK-8
TERRACE LEVEL
SIXTH FLOOR
FIFTH FLOOR
FOURTH FLOOR
THIRD FLOOR
SECOND FLOOR
FIRST FLOOR
UPPER GROUND FLOOR
LOWER GROUND FLOOR
BASEMENT-01
BASEMENT-02
BASEMENT-03
BASEMENT-04
DLF MALL, GURGAON

Enclosure 18: RWH pit Diagram

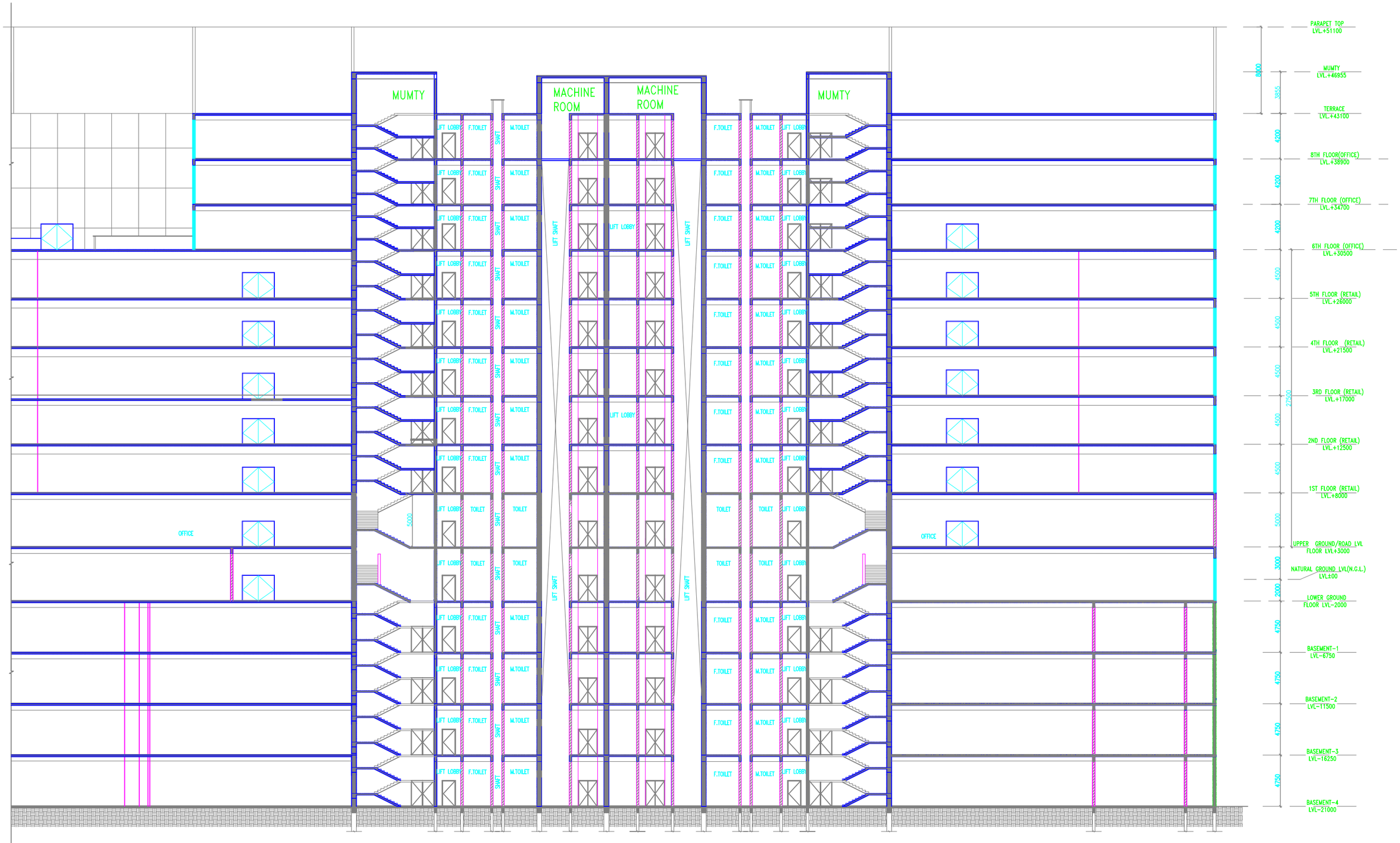
TYPICAL DETAIL OF RAIN WATER HARVESTING PIT



Enclosure 19: Environment Management Plan


DG Room
DG Room
STP
DG Room
RWH pit
STP
OWC
TO DELHI
60 m Wide NH-8
Service Road as per conditions
TO GURUGRAM
SECTOR 25A
OTHER'S LAND
MOULSARI
AVENUE
PART - B
N

Enclosure 20: Section

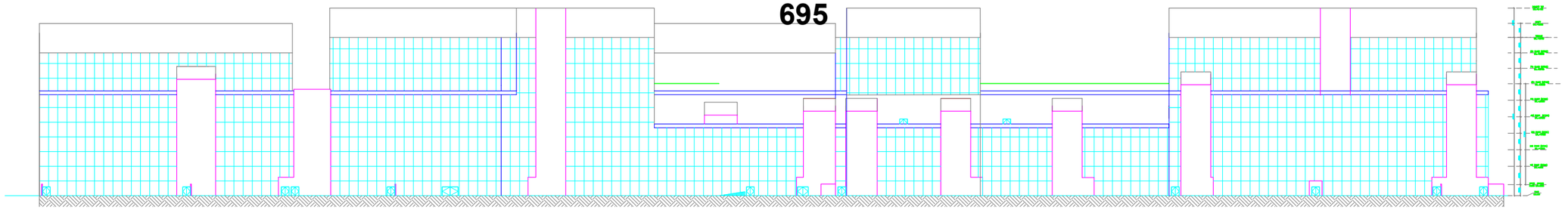


SECTION
BLOCK-1

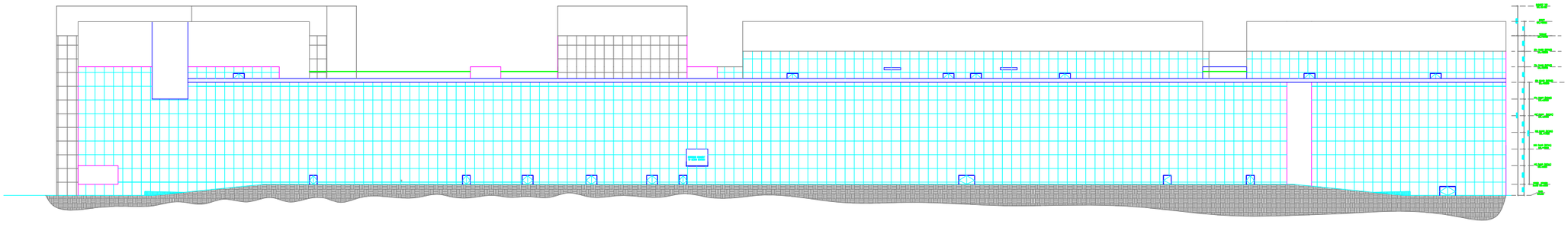
Enclosure 21: Elevation

695

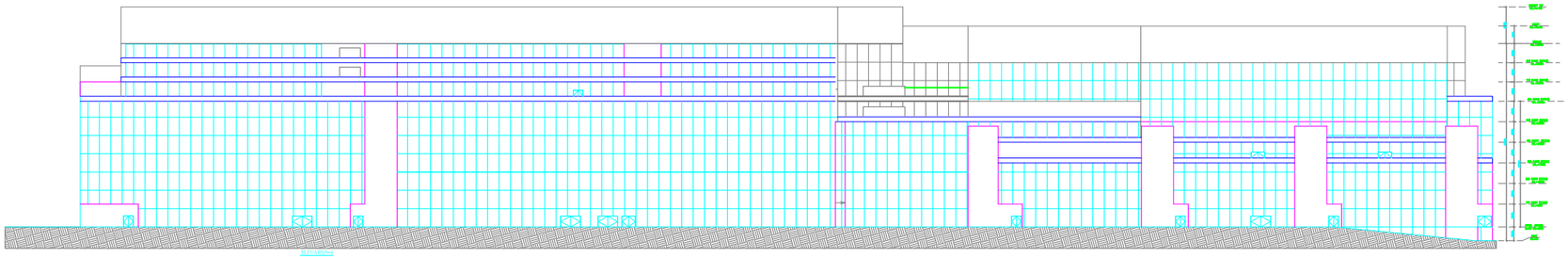
373



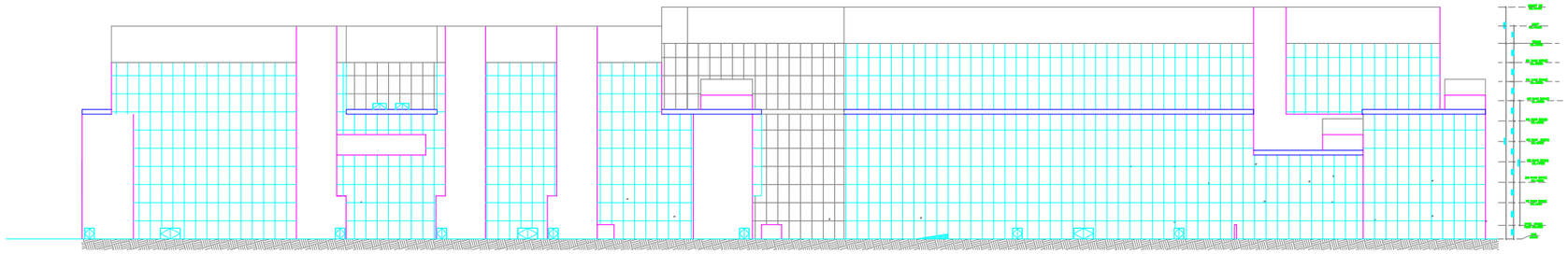
ELEVATION 2



ELEVATION 1



ELEVATION 3



ELEVATION 4

Enclosure 22: Board resolution

DLF CITY CENTRE LIMITED

(CIN-U70102DL2008PLC180096)

Regd. Office: 1E, Jhandewalan Extension, Naaz Cinema Complex, New Delhi – 110055

CERTIFIED TRUE COPY OF THE RESOLUTION PASSED AT THE MEETING OF THE BOARD OF DIRECTORS OF DLF CITY CENTRE LIMITED HELD ON MAY 29, 2013.

"**RESOLVED THAT** in supersession of earlier Board resolution dated October 28, 2010, Mr. Rajesh Kumar, Director, Mr. Ramesh Sanka*, Mr. Nilesh Ramjiyani* and Mr. Giri Raj Shah, authorized signatories on behalf of the Company, be and are hereby severally authorized on behalf of the Company to sign, execute and submit drawings, documents, applications, affidavits, building plans etc. and to deal with various governmental/statutory agencies, to sign and execute Work Orders, LOI/Letter of Award, Purchase Orders, various consultancy agreements such as agreements with Architects, Landscape Designers, Structural Engineering Consultant, Electrical Services Consultant, Plumbing and Fire Fighting Consultant, HVAC services consultants, Agreements with vendors etc. and/ or any other documents, papers, agreements, deeds etc relating or incidental thereto pertaining to Company's project 'Mall of India, Gurgaon'.

RESOLVED FURTHER THAT the aforesaid powers entrusted to the above executive(s) shall be valid, effective and exercisable by them, so long as they are in the employment of the Company or its associate/ holding/ group/ subsidiary companies unless revoked earlier by the Board.

RESOLVED FURTHER THAT all acts, deeds and things done and documents executed aforesaid shall be deemed to be valjd and enforceable only, if the same are consistent with this Resolution and that the Board shall not be responsible for any illegal and invalid acts and any other act beyond the scope of the aforesaid powers executed by the above executive(s) and shall not bind the Company against any third parties or before any authorities in any manner and that the Board shall not be answerable in that behalf.

RESOLVED FURTHER THAT a certified true copy of the Resolution duly signed by any Director of the Company, be given to any one concerned or interested in the matter."

For DLF City Centre Limited

Manoj Kumar Dua
Director
PA *

Date of Issue :- 16/02/2017

*since separated

Enclosure 23: AAI Approval

699

377

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

No: AAI/RHQ/NR/ATM/NOC/2018/47/220-223

DLF City Centre Ltd.

DLF Shopping Mall 3rd Floor Arjun Marg
DLF City Phase I Gurgaon 122002

Date: 26-02-2018

Valid Upto: 26-02-2026

No Objection Certificate for Height Clearance

1. This NOC is issued by Airports Authority of India (AAI) in pursuance of responsibility conferred by and as per the provisions of Govt. of India (Ministry of Civil Aviation) order GSR751 (E) dated 30th Sep. 2015 for Safe and Regular Aircraft Operations.

2. This office has no objection to the construction of the proposed structure as per the following details:

NOC ID :	**PALM/NORTH/B/012318/275881**
Applicant Name*	**Pawan Chawla**
Site Address*	**32.36 Acres Shopping/Commercial Block V Sector 25a ,DLF Phase III,Gurgaon,Haryana**
Site Coordinates*	**77 05 35.29-28 30 06.93, 77 05 43.30-28 30 17.43, 77 05 45.25-28 30 16.09, 77 05 46.68-28 30 08.94, 77 05 46.74-28 30 01.07, 77 05 46.86-28 30 15.57, 77 05 47.13-28 30 14.34, 77 05 48.71-28 30 05.98, 77 05 49.30-28 30 04.18,**
Site Elevation in mtrs AMSL as submitted by Applicant*	**243.32 M**
Permissible Top Elevation in mtrs Above Mean Sea Level(AMSL)	**281.8**

*As provided by applicant

3. This NOC is subject to the terms and conditions as given below:

a. Permissible Top elevation has been issued on the basis of Site coordinates and Site Elevation submitted by Applicant. AAI neither owns the responsibility nor authenticates the correctness of the site coordinates & site elevation provided by the applicant. If at any stage it is established that the actual data is different, this NOC will stand null and void and action will be taken as per law. The office in-charge of the concerned aerodrome may initiate action under the Aircraft (Demolition of Obstruction caused by Buildings and Trees etc.) Rules, 1994"

b. The Structure height (including any superstructure) shall be calculated by subtracting the Site elevation in AMSL from the Permissible Top Elevation in AMSL i.e. Maximum Structure Height = Permissible Top Elevation minus (-) Site Elevation.

c. The issue of the 'NOC' is further subject to the provisions of Section 9-A of the Indian Aircraft Act, 1934 and any notifications issued there under from time to time including the Aircraft (Demolition of Obstruction caused by Buildings and Trees etc.) Rules,1994.

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

d. No radio/TV Antenna, lighting arresters, staircase, Mumtee, Overhead water tank and attachments of fixtures of any kind shall project above the Permissible Top Elevation of 281.8 M (Restricted) , as indicated in para 2.

e. Only use of oil fired or electric fired furnace is permissible, within 8 KM of the Aerodrome Reference Point.

f. The certificate is valid for a period of 8 years from the date of its issue. If the construction of structure/Chimney is not commenced within the period, a fresh 'NOC' from the Designated Officer of Airports Authority of India shall be obtained. However, if construction work has commenced, onetime revalidation request, for a period not exceeding 8 years from the date of issue of NOC in respect of building/structure and for a period not exceeding 12 years from the date of issue of NOC in respect of chimney, may be considered by AAI. The date of completion of the Structure should be intimated to this office.

g. No light or a combination of lights which by reason of its intensity, configuration or colour may cause confusion with the aeronautical ground lights of the Airport shall be installed at the site at any time, during or after the construction of the building. No activity shall be allowed which may affect the safe operations of flights

h. The applicant will not complain/claim compensation against aircraft noise, vibrations, damages etc. caused by aircraft operations at or in the vicinity of the airport.

i. Day markings & night lighting with secondary power supply shall be provided as per the guidelines specified in chapter 6 and appendix 6 of Civil Aviation Requirement Series 'B' Part I Section 4, available on DGCA India website: www.dgca.nic.in

j. The applicant is responsible to obtain all other statutory clearances from the concerned authorities including the approval of building plans. This NOC for height clearances is to ensure the safe and regular aircraft operations and shall not be used as document for any other purpose/claim whatsoever, including ownership of land etc.

k. This NOC has been issued w.r.t. the Civil Airports. Applicant needs to seek separate NOC from Defence, if the site lies within their jurisdiction.

l. In case of any discrepancy/interpretation of NOC letter, English version shall be valid.

m. In case of any dispute w.r.t site elevation and/or AGL height, top elevation in AMSL shall prevail.

GP Singh 26.02.2018

(G. P. SINGH)

उप महाप्रबन्धक (एटीएम एनओसी)-एनआर
Dy. General Manager (ATM-NOC)-NR
भारतीय विमानपत्तन प्राधिकरण
Airports Authority of India
प्रचालन कार्यालय, गुरगांव रोड, नई दिल्ली-37
Operational Offices, Gurgaon Road, New Delhi-37

Chairman NOC Committee

Region Name: NORTH

Address: General Manager Airports Authority of India, Regional Headquarter, Northern Region, Operational Offices, Gurgaon Road, New Delhi-110037

Email ID: noc_nr@aai.aero

Contact No: 011-25653551

Enclosure 24: Earlier EC Copy

BY SPEED POST

No. 21-206/2007-IA.III
Government of India
Ministry of Environment and Forests
(I. A. Division)

Paryavaran Bhawan,
CGO Complex, Lodhi Road
New Delhi 110003
Dated: July 30, 2007

To

M/s. DLF Ltd.,
1-E, Jhandewalan Extension,
New Delhi-110055.

Subject: Environmental Clearance for construction of "Mall of India"- Shopping/Commercial Complex at Block-V, DLF City, Phase-III, Sector 25 A, Gurgaon, Haryana.

Sir,

I am directed to refer to your application seeking prior environmental clearance for the above project under the EIA Notification 2006. The above proposal has been appraised as per prescribed procedure on the basis of the documents enclosed with the application viz., form 1, form 1A and conceptual plan of the project and the additional clarifications furnished in response to the observations of the Expert Appraisal Committee (EAC) constituted by the competent authority in its 18th meeting held on June 29-30, 2007.

2. The project proponent is constructing a "Mall of India" Shopping/Commercial Complex at Block-V, DLF City, Phase-III, Sector 25-A, Gurgaon, Haryana at a cost of Rs. 489.84 crore. The project comprises construction of commercial complex with ground plus five floors and three basements with maximum height of building 46.64 meter. The plot area is 1,33,019 sq.m. The total proposed built up area is 3,77,830.30 sq.m. Total water requirement will be 2410 m3/day and 1928 m3/day of wastewater will be generated. The treated water will be reused for cooling and horticultural purposes and as such there will be zero discharge from the premises. A sewage treatment plant (capacity 2000 kld) will be provided. The solid waste generated (10.26 t/d) will be segregated into saleable/ reusable waste and non-reusable waste by private agency. The separated non-usable solid waste will be disposed into municipal solid waste disposal area. Parking space proposed is 650 ECS on surface and 4000 in basements.

3. The information given in the application forms indicate that there will be positive impact of proposed project on the land use and will improve the aesthetics of the area. There will be increase in vehicular movement due to operation of building. However, it may not affect ambient air quality significantly due to adequate measures taken for smooth flow of vehicles. There will be minor negative impact on ambient noise during construction phase. As there will be no taping of ground water, there will be no negative

1

impact on water resources. The proposed project will not cause any alternation of natural drainage system. The evaluation of impact on land environment does not indicate any detrimental effects due to the proposed project. Topographic character of this area will not change due to this project. Development of Green belt and Plantation will have positive impact on the land use and landscaping.

4. The EAC after due consideration of the relevant documents submitted by the project proponent and additional clarifications furnished in response to its observations have awarded "Gold" grading and recommended the grant of environmental clearance for the project mentioned above subject to compliance with the EMP and other stipulated conditions. Accordingly, the Ministry hereby accords necessary environmental clearance for the project subject to the strict compliance with the specific and general conditions mentioned below:

PART A- SPECIFIC CONDITIONS

I. **Construction Phase**

i All required sanitary and hygienic measures should be in place before starting construction activities and to be maintained throughout the construction phase.

ii. Soil and ground water samples will be tested to ascertain that there is no threat to groundwater quality by leaching of heavy metals and other toxic contaminants.

iii A First Aid Room will be provided at the project site both during construction and operation of the project.

iv Adequate drinking water and sanitary facilities should be provided for construction workers at the site. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.

v Disposal of muck including excavated material during construction phase should not create any adverse effects on the neighboring communities and be disposed off taking the necessary precautions for general safety and health aspects of people.

vi Diesel power generating sets used during construction phase should be of "enclosed type" to prevent noise and should conform to rules made under Environment (Protection) Act 1986, prescribed for air and noise emission standards.

vii Ambient noise levels should conform to Commercial area standards both during day and night when measured at boundary wall of the premises. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase.

viii Vehicles hired for bringing construction material at site should be in good condition and should have valid "pollution under check"(PUC)

certificate and to conform to applicable air and noise emission standards and should be operated only during non-peaking hours.

ix.. The construction agency shall use flyash based material/ products as per the provisions of flyash notification of 14.9.1999 and as amended on 27.8.2003.

x Construction spoils including bituminous material and other hazardous materials must not be allowed to contaminate water courses and the dump sites for such material must be secured so that they should not leach into the ground water.

xi. Any hazardous waste generated during construction phase should be disposed of as per applicable Rules & norms with necessary approvals of the Haryana Pollution Control Board.

xii Regular supervision of the above and other measures for monitoring should be in place all through the construction phase so as to avoid disturbance to the surroundings.

xiii Under the provisions of Environment (Protection) Act 1986, legal action shall be initiated against the project proponent if it was found that construction of the project had started without obtaining environmental clearance.

II. Operation Phase

The environmental clearance recommended to the project is subject to the specific conditions as follows:

i. Diesel power generating sets as source of back up power for lifts and common area illumination should be of "enclosed type" and conform to rules made under Environment (Protection) Act 1986, prescribed for air and noise emission standards as per CPCB guidelines. Exhausts should be discharged by stack, raised to 4 meters above the rooftop.

ii. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations.

iii. The sewage treatment plant of adequate capacity should be constructed. It should be certified by an independent expert for efficiency as well as adequacy and submit a report in this regard to the Ministry before the project is commissioned for operation. The wastewater should be treated upto tertiary level and after treatment reused for cooling and horticultural purposes so as to achieve zero discharge. However, discharge of treated sewage, if any, shall conform to the norms & standards prescribed by Haryana Pollution Control Board.

iv. Rain water harvesting and ground water recharging shall be practiced. Oil & Grease trap shall be provided to remove oil and grease from the surface run off and suspended matter shall be removed in a settling tank before its utilization for rainwater harvesting.

v The solid waste generated should be properly collected & segregated before composting and non bio-degradable solid waste shall be disposed of

to land fill sites approved by local municipality. STP sludge shall be used as manure for gardening.

vi. Any hazardous waste including biomedical waste should be disposed of as per applicable Rules & norms with necessary approvals of the Haryana Pollution Control Board.

vii. The green belt design along the periphery of the plot shall achieve attenuation factor conforming to the day and night noise standards prescribed for residential land use. The open spaces inside the plot should be suitably landscaped and covered with vegetation of indigenous variety.

viii. Incremental pollution loads on the ambient air quality, noise and water quality should be periodically monitored after commissioning of the project.

ix. The ground water levels and its quality should be monitored regularly in consultation with the Central Ground Water Authority.

x. The Ground Water shall be utilized only in consultation with Central Ground Water Authority.

xi. The Solar energy shall be used for water heating as well as lighting common areas and verifiable measures shall be adopted for energy conservation and water conservation.

xii. Report on the energy conservation measures should be prepared incorporating details about building materials & technology, R & U Factors etc and submitted to the Ministry in three months time.

xiii. The values of R & U for the building envelope should meet the requirements of the hot & humid climatic location. Details of the building envelope should be worked out and furnished in three months time.

PART – B. GENERAL CONDITIONS

i. The environmental safeguards contained in the documents should be implemented in letter and spirit.

ii. Provision should be made for the supply of kerosene or cooking gas and pressure cooker to the laborers during construction phase.

iii. All the laborers to be engaged for construction works should be screened for health and adequately treated before the issue of work permits. Adequate preventive and protective measures shall be taken to protect workers, labours etc during construction and operation phase of the project.

iv. 6 monthly monitoring reports should be submitted to the Ministry and its Regional Office.

5. Officials from the Regional Office of MOEF, Chandigarh who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents / data by the project proponents during their inspection. A complete set of all the documents submitted to MoEF should be forwarded to the CCF, Regional office of MOEF,Chandigarh.

6. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Ministry.

7. The Ministry reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment

(Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.

8. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department (if required), Forests Department, Wildlife Act 1972 etc. Shall be obtained by project proponents from the competent authorities.

9. A copy of the environmental clearance letter would be marked to the local NGO(s) for their information.

10. The project proponent should advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded environmental clearance and copies of clearance letters are available with the Haryana Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at http://www.envfor.nic.in . The advertisement should be made within 7 days from the day of issue of the clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Chandigarh.

11. These stipulations would be enforced among others under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986 and the Public Liability (Insurance) Act, 1991.

12. The project authority shall enter in to MOU with all buyers of the property, shops etc. to ensure operation and maintenance of the assets by owners of the buildings.

(K.C. RATHORE)
Additional Director (IA)
rathore27@yahoo.com
Tele: 24360789

Copy to: -

1. The Secretary, Department of Environment, Government of Haryana, Secretariat Building, Panchkula, Haryana.
2. The Member Secretary, Haryana Pollution Control Board, Panchkula, Haryana.
3. The CCF, Regional Office, Ministry of Environment & Forests, Chandigarh.
4. IA - Division, MOEF, Paryavaran Bhawan, CGO Complex, New Delhi.
5. Guard file

(K.C. RATHORE)
Additional Director (IA)

SEIAA-HARYANA

Check-list for obtaining Environment Clearance

(Under Category 8 (a) & (b) in Building & Construction Projects)

Sr. No.	Check-list	Yes	No	Not Applicable
1.	Scrutiny Fee as per Notification No. DE&CCH/3060 dated 14th October, 2021 issued by the Haryana Government	Yes, scan copy scrutiny fee DD no. 521520 dated. 23.12.2022		
2.	Form -I	--		
3.	Form-IA	--		
4.	Conceptual Plan/ Brief description of the project	--		
5.	EIA Report	Yes Attached		
6.	EMP Report	Yes Attached		
7.	**Project Details**: a. Location of project in the Sector Plan/Master Plan b. Plan showing surrounding features within 500 meter/5km/10 km radius or as Notified by Govt. (w.r.t. Eco-sensitive zone/ wildlife/ wetland/Restricted Area/ Controlled Area or Any other such Establishments) c. Status of the construction/Site in brief with photos d. Location of STP/ETP on plan e. Location of RWH structure on plan	Yes Attached as Annexure 7		
8.	Structure Stability (design) Certificate	Yes Attached as Annexure 10		
9.	TOD Compliance (License)	Yes Attached`as Annexure 15		
10.	Land Details: a. Ownership or Rented or Leased or	Yes Attached as Annexure 15		

	any other mode b. Valid License/ Allotment letter/ CLU Approval			
11.	Layout Plan/Building Plan	Yes Attached as Annexure 7		
12.	Zoning Plan	Yes Attached as Annexure 20		
13.	Green Belt Development Plan	Yes Attached as Annexure 7		
14.	Traffic Circulation Plan/ Traffic Study	Yes Attached as Annexure 5		
15.	Parking Plan	Yes Attached as Annexure 5		
16.	Safety Plan (Fire & Electrical etc.)	Yes, Given in complete Report		
17.	Rainfall latest data	Yes, Given in complete Report		
18.	NOC from AAI regarding height clearance	Yes Attached as Annexure 12		
19.	NOC Aravali Clearance	Yes Attached as Annexure 13		
20.	NOC from Forest Department regarding: a. Eco Sensitive Zone b. Wildlife c. Wetland d. Restricted Area e. Controlled Area or any other such Establishments. f. National Board for Wildlife (NBWL)	Yes Attached as Annexure 14		
21.	Air Simulation Plan and Remediation for higher value of GLC at particular loadings	Yes, Given in complete Report		
22.	**Analysis Report from accredited lab along with Permissible limits** (i) Soil (ii) Water (iii) Air (iv) Noise	Yes Attached as Annexure 11		
23.	**Water Management Plan** **(Construction & Operational Stage)** (a) Fresh Water	Yes, Given in complete Report		

	(b) Underground (c) Treated Water (d)Any other source			
24.	**Discharged Water Management Plan after treatment in** **(i) STP** a) Sewerage b) Zero Liquid Discharge c) Horticulture/Landscaping/Irrigation d) Any other mode **(ii) ETP** a) Sewerage b) Zero Liquid Discharge c) Horticulture/Landscaping/Irrigation d) Any other mode	Yes, Given in complete Report		
25.	Power Mobilization Plan	Power Assurance letter is attached as Annexure 9.		
26.	**Waste Management Plan** (Bio-Medical Waste/ E-Waste/ Plastic Waste/Hazardous Waste/ Solid Waste Management etc.)	Yes, Given in complete Report		
27.	Copy of Board Resolution	Yes Attached as Annexure 19		
28.	**Details of Consultant** a. Authority Letter for engaging Consultant by Project Proponent b. Proof of NABET Approved Accreditation Certificate of authorized Consultant	Yes Attached as Annexure 17		

ENVIRONMENT IMPACT ASSESSMENT

FOR

"ENVIRONMENT CLEARANCE FOR EXPANSION OF ENVIRONMENTAL CLEARANCE FOR SHOPPING/COMMERCIAL BUILDING ON 32.36 ACRES (DLF DOWNTOWN FORMALLY KNOWN AS MALL OF INDIA) AT SECTOR 25A, GURUGRAM, HARYANA"

Item: 8(b) Category: B,

Plot Area: 130956.066 sq.m. Built-up Area: 875074 sq.m.

SUBMITTED BY

M/S DLF LIMITED

Gateway Tower (2nd Floor), DLF City Phase-III, Gurgaon- 122002, Haryana

LABORATORY ENGAGED

IND RESEARCH & DEVELOPMENT HOUSE PVT. LTD., NOIDA

NABL ACCREDITED LABORATORY (No. TC-5912 VALID UP TO 29/06/2024)

BASELINE MONITORING PERIOD: March 2022- May 2022

ENVIRONMENTAL CONSULTANT

IND TECH HOUSE CONSULT

G-8/6, Ground Floor, Sector 11, Rohini, Delhi – 110 085

Tel: +91 11 46570361

(NABET/EIA/2023/SA 0174 Rev. 01 Valid up to 29.04.2023)

ENVIRONMENT IMPACT ASSESSMENT
FOR
"Expansion of Environmental Clearance for Shopping/Commercial Building on32.36 acres (DLF Downtown formally known as Mall of India) at Sector 25A, Gurugram, Haryana"

Project Proponent:

M/s DLF Limited

For and on behalf of:	**Ind Tech House Consult**
Approved by:	Mr. Soumya Dwivedi
Signed:	
Position:	EIA Coordinator
Date:	February, 2023

This report has been prepared by Ind Tech House Consult with all reasonable skill, care and diligence within the terms of the contract with the client, incorporating our general terms and conditions of business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

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DECLARATION BY EXPERTS

Declaration by Experts Contributing to the *Environmental Clearance for "Expansion of Environmental Clearance for Shopping/Commercial Building on 32.36 acres (DLF Downtown formally known as Mall of India) at Sector 25A, Gurugram, Haryana"* I, hereby, certify that I was a part of the EIA team in the following capacity that developed the above Report.

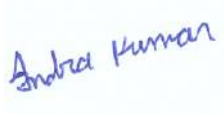
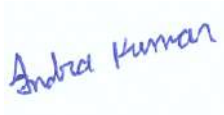
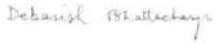
EIA coordinator: Mr. Soumya Dwivedi

Signature and Date:

Period of Involvement: September-2022 to till date

Contact Information:

Functional Area Experts:

S. NO.	Functional areas	Name of the expert/s	Involvement (period and tasks)	Signature and date
1	**AP**	Mr. Suman Banerjee (FAE) Mr. Indra Kumar Sharma	**September-2022 to till date** Study about Air pollution source, impacts, mitigation measures and management	 
2	**WP**	Mr. Suman Banerjee (FAE) Mr. Indra Kumar Sharma	**September-2022 to till date** Study about Water Pollution source, usage, impacts, mitigation measures, anagement, Water quality, water conservation	 
3	**SHW**	Mr. Soumya Dwivedi (FAE)	**September-2022 to till date** Study about classification of solid waste, treatment method, disposal technics etc.	
4	**SE**	Dr. Debashish Bhttacharya (FAE)	**September-2022 to till date** Study about Socio-economic survey,	

S. NO.	Functional areas	Name of the expert/s	Involvement (period and tasks)	Signature and date
			demographic of study area etc.	
5	**EB**	Dr. Bideh Shukla (FAE)	**September-2022 to till date** Study about ecologically sensitive area of study area, existing flora/fauna, national park & wildlife sanctuaries etc.	
6	**SC**	Dr. Bideh Shukla (FAE)	**September-2022 to till date** Study about soil charaterstic, conservation measures, impacts on land and mitigation measures etc.	
7	**NV**	Mr. Suman Chattaraj	**September-2022 to till date** Study about ambient noise quality, source, impacts, mitigation measures, traffic survey etc.	
8	**LU**	Mr. Manish Shukla (FAE)	**September-2022 to till date** Study about existing land use of the study area as per Master Plan, study of drainage pattern, topography of the area, etc.	

Declaration:

I, Soumya Dwivedi, hereby confirm that the above-mentioned experts prepared the report of Environmental Clearance for "Expansion of Environmental Clearance for Shopping/Commercial Building on 32.36 acres (DLF Downtown formally known as Mall of India) at Sector 25A, Gurugram, Haryana". I also confirm that the consultant organization shall be fully accountable for any mis-leading information mentioned in this statement.

Name: Mr. Soumya Dwivedi
Designation: **EIA Coordinator**
Name of the EIA consultant organization: **M/s Ind Tech House Consult**
NABET Certificate No. & Valid till: **NABET/EIA/2023/SA 0174 Rev. 01 (29.04.2023)**

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