

**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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FILED BY:

Karanjawa
D/834/2010

[KARANJAWALA & CO.]
ADVOCATES FOR RESPONDENT NO. 8
FIRST FLOOR, 212, ROUSE AVENUE,
DEEN DAYAL UPADHYAY MARG,
NEW DELHI-110002

EMAIL: service@karanjawala.in;
karanjawala@karanjawala.in

Mobile No. 9971527766

PLACE: NEW DELHI

DATED: 30.03.2026

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FILED BY:

Akshita
2/8/24/210

**[KARANJAWALA & CO.]
ADVOCATES FOR RESPONDENT NO. 8
FIRST FLOOR, 212, ROUSE AVENUE,
DEEN DAYAL UPADHYAY MARG,
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... APPLICANT(S)

VERSUS

STATE OF HARYANA & ORS.

... RESPONDENT(S)

**REPLY ON BEHALF OF RESPONDENT No. 8 - M/S DLF
LIMITED**

MOST RESPECTFULLY SHOWETH:

1. The present reply to the captioned OA is being filed by Respondent No. 8 - M/s. DLF Limited (“DLF”) in terms of this Hon’ble Tribunal’s directions dated 27.11.2025.
2. DLF categorically and unequivocally denies each and every allegation, averment, and contention raised in the OA as being false, baseless, misleading, and devoid of any factual or legal foundation. The OA, replete with conjectures and falsities, is a gross abuse of process of law, filed with the sole intent of obstructing the proposed *lawfully approved* and *enviro-compliant* installation of DG sets and cooling towers by DLF over a land parcel owned by it, inter-alia, on the primary ground that the same violates the conditions of Environment Clearance (“EC”) granted on 06.05.2019 and 09.04.2023 by Respondent No.2 (“SEIAA”).

**PRELIMINARY OBJECTION: THE OA IS BARRED BY
LIMITATION**

3. At the very outset, it is humbly submitted that the present OA is ex-facie barred by limitation as prescribed under Section 14(3) of the National Green Tribunal Act, 2010 (“NGT Act”). This would be

evident from the following.

4. The allegations at hand pertain to “Mall of India” (now known as “**DLF Downtown**”) - Shopping / Commercial Complex (“**subject project**”) proposed to be developed on an area admeasuring 32.36 acres, which is part of an area admeasuring 36.36 acres (“**commercial colony**”) at Block-V, DLF City, Phase-III, Sector 25A, Gurugram, Haryana.
5. The Applicant’s primary allegation is that the installation of DG Sets and Cooling Towers by DLF proposed to take place on the parcel of land adjacent to (and under) the Mousari Avenue Rapid Metro Station abutting the Applicant No.1 Society (i.e., on the other side of the dividing road) is contrary to the stipulations contained in the ECs dated 06.05.2019 and 09.04.2023 and that the same is not in conformity with the prescribed environmental norms etc.
6. For ready reference, Section 14(3) of the NGT Act is reproduced hereunder:

“14(3). No application for adjudication of dispute under this section shall be entertained by the Tribunal unless it is made within a period of six months from the date on which the cause of action for such dispute first arose.

Provided that the Tribunal may, if it is satisfied that the applicant was prevented by sufficient cause from filing the application within the said period, allow it to be filed within a further period not exceeding sixty days.”
7. Without prejudice to the fact any case of violation of any norms/ EC etc. has been made out, on which ground alone the present case deserves to be dismissed, it may be noted that the Applicant No.1 Society, vide its letter dated 31.01.2024 addressed to DHBVNL had raised issues with regard to proposed installation of the DG sets, and

sought halting and relocation of the DG sets to an alternate site. This was also followed by RTI communications addressed to the Chief Town Planner, Haryana (07.02.2024) and the Office of Conservator of Forests (07.02.2024) respectively, communications dated 13.02.2024 and 16.03.2024 addressed to the Chairman, DLF, and finally the common communication/ representation dated 22.04.2024 addressed to the Ministry of Environment, Forest and Climate Change (“**Ministry**”), CPCB, State of Haryana, HSPCB, Directorate of Town and Country Planning, Haryana (“**DTCP**”), and DLF, raising identical grievances and inter-alia seeking shifting of the DG sets from the subject premises, i.e., from the vicinity of the Applicant No.1 Society.

8. As such, it is clear that the Applicant No.1 Society has had sufficient knowledge of the proposed installation of the DG sets way back since January 2024. Therefore, assuming without admitting the proposed installation of DG sets constitutes a “dispute”, the cause of action for the said dispute arose on 31.01.2024 itself on which date the first communication was addressed to DHBVNL by the Applicant No.1 Society. As such, the present case ought to have been filed latest by the end of July 2024, or latest by the end of September 2024 (including the 60 days’ period). However, the present OA has been filed only in the month of November 2025, thereby clearly being hit by the mandatory provisions of Section 14 of the NGT Act. Even if one were to assume the filing of Writ petition before the Hon’ble High Court of Punjab and Haryana as an application for settlement of disputes as envisaged under Section 14, the same having been filed only on 11.03.2025 is also clearly beyond the prescribed period which ended in the end of July/ September 2024.

9. As a matter of fact, it is surprising that post its representation/ communication dated 22.04.2024, no steps whatsoever were taken by the Applicant No.1 Society in relation to the alleged issues raised herein.
10. In fact, the aforesaid crucial aspect has been conveniently ignored by the Applicant Society by making a general statement in para 7 of the OA that the *present Application is within the period of Limitation specified in Section 14 of the NGT Act.*
11. It is also equally pertinent to mention that under clause 1 of “**X. Miscellaneous**” of EC dated 09.04.2023, the project proponent was required to prominently advertise the EC in at least 2 two local newspapers of the District or State, of which one shall be in the vernacular language, within seven days indicating that the project has been accorded EC and the details of MoEFCC/ SEIAA website where the same is displayed. This condition was duly complied with by DLF by carrying out publication in 2 newspapers, i.e., Financial Express and Jan Satta on 11.04.2023.

A copy of the Common Application Form in regard to the condition duly complied with by DLF by carrying out publication in 2 newspapers, i.e., Financial Express and Jan Satta on 11.04.2023 is annexed herewith and marked as **ANNEXURE-R1 (COLLY)**

12. Therefore, viewed from this angle, since the world at large was duly intimated about the receipt of EC dated 09.04.2023 on 11.04.2023 which, by necessary implication takes into its four-fold the receipt of knowledge by the Applicant No.1 Society as well, the date of cause of action, if any, ought to have arisen on 11.04.2023. As such, the 6 months' period would have ended on 11.10.2023, whereas the

extended period of 2 months would have expired on 11.12.2023. However, in the present case, the first communication itself raking alleged issues qua proposed installation is dated 31.01.2024, whereas the OA has been filed highly belatedly only in November 2025.

13. For all the aforesaid reasons, the present OA deserves to be dismissed for being time barred in terms of Section 14 of the NGT Act.

PRELIMINARY SUBMISSIONS

14. Without prejudice to the objection hereinabove, DLF respectfully submits that it is one of the oldest and most reputed real estate developers in the country, with an established track record of over several decades. DLF has consistently demonstrated responsible development practices, and has at all times acted strictly in compliance with applicable statutory requirements. All of DLF's projects are planned and executed in adherence to the extant laws, including the requisite environmental laws, clearances and regulatory norms.
15. The subject project has also undergone a rigorous multi-tiered statutory appraisal under the EIA Notification, 2006 (**"2006 Notification"**), including preparation of comprehensive Environmental Impact Assessment (**"EIA"**) Report by M/s. Perfact Enviro Solutions Pvt. Ltd. (NABET Registered) (submitted on 18.07.2018 to State Expert Appraisal Committee, Haryana (**"SEAC"**)) (**"1st Report"**) and the 2nd Report by M/s. Ind Research & Development House Pvt. Ltd. (NABL Accredited Laboratory) (submitted on 13.02.2023 to SEAC) (**"2nd Report"**) on the basis of which ECs dated 06.05.2019 and 09.04.2023 respectively were

granted to DLF by SEIAA.

Copies of the 1st EIA Report and 2nd EIA Report submitted by DLF are annexed herewith and marked as **ANNEXURE-R2 (COLLY)**

16. In fact, upon obtaining the EC dated 09.04.2023, DLF has also been granted Consent to Establish (“CTE”) for the subject project on 17.08.2023, followed by Consent to Operate (“CTO”) dated 23.07.2024 and 28.06.2025 thereby satisfying every statutory/regulatory prerequisite before commencement of project activities. Furthermore, the Respondent No.3 - HSPCB has also granted CTE and CTO only after examining all necessary documents, inter-alia, the layout plans, which clearly depict the location of DG sets.

A copy of Consent to Establish (CTE) dated 17.08.2023 is annexed herewith and marked as **ANNEXURE-R 3.**

Copies of Consent to Operate (CTO) dated 23.07.2024 and 28.06.2025 are annexed herewith and marked as **ANNEXURE-R4 (COLLY.)**.

17. The existence of aforesaid approvals, sanctions etc. conclusively demonstrates that the subject project stands fully authorized and sanctioned under the applicable provisions of (including but not limited to) the Environment (Protection) Act, 1986, the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981 etc.
18. Further, the subject project is being developed strictly on DLF’s own land parcel in accordance with valid Licenses issued by the DTCP approved Zoning Plans, and Building Plans.

19. Every stage of the project including licensing to environmental appraisal, to obtaining pollution control consents etc., has been carried out under the supervision and sanction of the competent statutory authorities. The project is thus being developed in strict adherence to law and all regulations. Right from the stage of applying for approval of TOR to submitting the EIA Report(s) to obtaining the EC(s), and to further obtaining the CTE and CTO, DLF has duly complied with the detailed prescribed procedural mechanism.
20. In fact, SEAC has twice awarded “gold standard” rating to the proposed project of DLF. Similarly, basis the recommendations of SEAC, SEIAA was also pleased to grant EC to DLF on 2 separate occasions. All the relevant information submitted by DLF has been duly considered by the authorities before proceeding to issue the necessary permissions.
21. Even at the cost of repetition, DLF reiterates that it has, at all material times, scrupulously complied with all applicable environmental laws, conditions of EC and all such necessary terms and conditions prescribed by the requisite authorities. DLF has never commenced nor intends to commence any construction or installation work(s) without securing prior applicable statutory/regulatory approvals.
22. In order to better appreciate the issue at hand, DLF wishes to provide allegation wise response to baseless allegations raised by the Applicants in the present OA:
 - A. **Re: Allegations that in Form 1/EIA Report, DLF has misrepresented that no schools, residential colonies, or vulnerable groups were in the vicinity of the site where the DG**

sets are to be installed

23. It is humbly submitted that the aforesaid allegation is patently false. DLF, to the contrary had expressly disclosed all habitation, schools etc. proximate to the site in question, which would be evident from the details given hereinafter.
24. It may be noted that the proposed terms of reference (“TOR”) submitted on the website of Ministry by DLF for the purpose of preparation of 2nd EIA Report in order for obtaining Environment Clearance contain proper and complete disclosures. The Common Application Form for TOR (@internal page 6, point 20.7) specifically discloses that the proposed project would be coming up in a densely populated / built-up area. Further, the Form 1 for approval of TOR (@internal page 11, point 8) again discloses that *the project site is located in DLF City Phase-III in Gurgaon city which is a residential area with some commercial area and that the site is surrounded by moderately populated built-up area*. Most importantly (@internal page 11, point 9), DLF has disclosed that that there are sensitive man-made land uses, i.e., major hospitals, schools and places of worship and community facilities etc. within 15 kms of the proposed project area.

Copies of the Common Application Form for TOR and Form 1 for approval of TOR are annexed herewith and marked as **ANNEXURE-R5 (COLLY.)**.

25. Similar express disclosure area also contained in both the EIA reports referred to hereinabove and annexed herewith as Annexure R- 2 (Colly.).

B. Re: Allegation that installation of DG Sets and Cooling Towers is contrary to the stipulations contained in the ECs and not in conformity with the prescribed environmental norms

26. It is the Applicant's allegations that DG sets are required to be located in basements as mandated under the EC dated 06.05.2019, and since the DG sets are not being installed in the basements, the same amounts to violation of the terms of EC.

27. In this respect, it may be noted that the total land parcel over which the project is proposed to come up is spread across an area admeasuring 36.36 acres. While the land parcel on which the MLCP and buildings for the subject project are going to be raised forms part of Part A of the proposed project and is on one side of the road, the land parcel on which the DG sets and cooling towers are proposed to be set up forming part of Part B of the project is on the other side of the road. Both Part A and Part B together constitute the total area admeasuring 36.36 acres, i.e., the entire commercial colony.

Copies of the site plans approved for 36.36 acres dated 29.08.2024 and 08.01.2026 respectively are annexed herewith and marked as **ANNEXURE-R6 (COLLY.)**.

28. Insofar as EC dated 06.05.2019 is concerned, the same has been superseded by the EC dated 09.04.2023 obtained for the purpose of expansion of the project. Secondly, even though the 2nd EC doesn't contain an express stipulation requiring installation of DG sets in the basement, **as a matter of fact, the proposed DG sets are still located in the basement of the Utility block in Part B of the licensed land. The Cooling towers would be installed on surface level, whereas the DG sets would be installed in Level-I basement.**

29. This would be evident from a bare perusal of the Site Plan and Landscape Plan at pages 323 and 324 respectively of the 2nd EIA Report submitted for the purpose of obtaining EC for expansion (2023) as also the approved site plans referred hereinabove and already annexed herewith as Annexure R- 6 (Colly.).

Copies of Site Plan and Landscape Plan at pages 323 and 324 respectively of the 2nd EIA Report submitted for the purpose of obtaining EC for expansion (2023) are annexed herewith and marked as **ANNEXURE-R7 (COLLY.)**.

C. Re: Proximity to the metro station

30. It is the Applicants' allegation that the installation of DG Sets and Cooling Towers by DLF proposed to take place on the parcel of land adjacent to (and under) the Mousari Avenue Rapid Metro Station abutting the Applicant No.1 Society (i.e., on the other side of the dividing road) is contrary to the stipulations contained in the ECs and that the same is not in conformity with the prescribed environmental norms etc. On the basis, it has been further alleged that the said installation would not only pose grave risk to the health and lives of the residents of the society but is also detrimental to critical metro infrastructure carrying high-voltage electric supply.
31. With greatest respect, this allegation is also completely erroneous. It is humbly submitted that the placement of DG sets (in the basement) and the cooling towers is in Utility block and not underneath the metro station as is the case sought to be set up by the Applicants.
32. As would be evident from the aforesaid plans, **the nearest DG set is almost 15 meters away form the foundation of elevated metro**

station.

33. Also, proper and complete disclosures were made in the applications/ EIA report(s) filed with the authorities. Both the EIA reports clearly show the existence of the Applicant Society adjacent to the premises (part B) whereon the proposed installation is taking place as also the Mousari Avenue Rapid metro station. The EIA Reports have also given abundant disclosure of the facilities (commercial and community) surrounding the proposed project area. Thus, neither any misrepresentation nor any concealment has been made as is the case sought to be set up by the Applicants.
34. Insofar as the allegation that storage of large quantities of diesel under the metro station will pose risk of fire and explosion is concerned, it may be noted that the underground diesel storage facility located within the HSD Yard is approximately 60 meters away from the elevated metro station. Therefore, there can be no question of any kind of threat to the metro facility. Furthermore, it is also not as if there is an absolute bar in the establishing or operation of petrol pumps in the vicinity of metro station(s) in the State of Haryana. As an example, it may be seen that a metro line is passing over a fully functional petrol pump near DLF Building 5, Cyber City, and there is also another petrol pump in close proximity Guru Dronacharya Metro Station which has been permitted to operate.

Images of the petrol pumps near DLF Building 5, Cyber City and Guru Dronaharya Metro Station respectively are annexed herewith and marked as ANNEXURE-R8 (COLLY.).

35. Therefore, when petrol pumps themselves which are in close

proximity to the metro stations have been given the necessary clearances/ permissions to operate, it belies logic as to how the installation of DG sets and the proposed HSD yard would pose any kind of threats to the environment or the safety or structural stability of metro corridor, station facilities, passenger movement areas, or operational systems etc.

36. The proposed placement of the DG sets and allied infrastructure does not interfere with the operation of the Rapid Metro system or compromise or adversely affect any metro structure.
37. In fact, the installation of DG sets and associated infrastructure at the subject location does not require approval from Haryana Mass Rapid Transport Corporation Limited (“HMRTC”), inasmuch as the said work falls outside the scope of activities necessitating any such permission.
38. This being the case, the entire set of allegations pertaining to the proposed installation of DG sets being allegedly detrimental to the safety and stability of metro corridor is only liable to be rejected.

D. Re: Consultation with HSPCB and RTI query

39. The Applicants have sought to mislead this Hon’ble Tribunal on the issue of consultation with HSPCB and replies to the RTI queries raised by it.
40. It is humbly submitted that it is not the obligation of HSPCB to stipulate the location of DG sets in a colony. The consultative process with HSPCB, involves taking of permission from HSPCB, i.e. CTE, in terms of the EC. For taking the said permission, the DLF provided all requisite details, including layout plans wherein the location of DG sets is indicated. DLF also provided responses and

clarifications to all the queries raised by the HSPCB prior to grant of CTE.

41. In this regard, it may be noted that after DLF applied to HSPCB for obtaining CTE post receipt of 2nd EC, HSPCB had issued notices dated 06.07.2023 and 18.07.2023, inter-alia, seeking copy of Layout plan showing the details of all *manufacturing processes, location of stacks/ chimneys, ETP/ STP, APCM, Hazardous Waste storage and treatment facilities, tube wells, Water supply lines, Effluent drains and final outlets for the disposal of the effluent*. The said Notices were duly responded by DLF.
42. After several deliberations and hearings, and only upon being satisfied with DLF's response to the queries raised, the RO, HSPCB was pleased to further forward DLF's application for CTE for approval by Nodal officer, HSPCB which is recorded in the sheet of proceedings maintained by HSPCB.

Copies of Notices dated 06.07.2023 and 18.07.2023 by HSPCB, Gurgaon are annexed herewith and marked as **ANNEXURE-R9 (COLLY.)**.

Copy of proceedings before the RO, HSPCB dated 04.07.2023 is annexed herewith and marked as **ANNEXURE-R10**.

43. With reference to the reliance placed by the Applicants on the Reply dated 24.07.2025 to the RTI queries raised by the Applicant No.1, it is submitted that the said RTI queries, apart from being completely mischievous, have been deliberately couched in a manner so as to create an impression as if mandatory consultations had to take place between DLF and HSPCB, followed by issuance of a specific NOC from the HSPCB prescribing the location of DG sets of the project.

With greatest respect, such a mechanism is conspicuous by its absence from the EC dated 09.04.2023 itself.

44. The said RTI query was rightly responded to by the HSPCB by stating that “location is not specified by the pollution control board” inasmuch as it is not for the HSPCB to specify the location for installation of DG sets. It is for the project proponent to submit the requisite plans to statutory authorities, including HSPCB. If any statutory authority has any objection thereto, or is of the view that any part of the plan is contrary to any statute, rules, regulations or approvals, the same is conveyed to the project proponent in order for taking such further steps, as are appropriate and necessary.
45. The aforesaid position also becomes clear from HSPCB’s own Reply to the present OA, wherein it is stated that the issue of installation and location of DG sets does not fall under the ambit of HSPCB. The HSPCB has also further stated therein that the DG sets are yet to be installed and that as and when such installation would take place, HSPCB would duly examine compliance of all the necessary statutory requirements and norms etc. Needless to point out, all these aspects would be duly considered at the time of issuance of the CTO by the HSPCB.
46. Without prejudice, the fundamental grievance of the Applicants arises on account of confusion that the DG sets in terms of the 2nd EC are being located above ground. DLF had already disclosed/represented in the 2nd EIA Report submitted to SEIAA that as per the site plan and landscape plan, the DG sets would be installed in basement of utility block (forming part of Part B of the project). Since the project proponent had already undertaken to install the DG sets in the basement, it is for this reason that the SEIAA while

granting the EC dated 09.04.2023 did not include/ reiterate the express stipulation of basement-only installation of DG sets.

E. Re: Allegations regarding Stack Height

47. A baseless allegation has been made that DLF has violated the EC condition regarding stack height. It is humbly submitted that the DG sets are still in the process of being installed, and the aforesaid assumption/ allegation is also completely premature.
48. For the record, however, DLF undertakes to provide the stack height completely in terms of the all the requisite clearances, including the EC.

F. Re: Allegation that DG sets are being installed over an area which is outside the project area for which EC has not been granted

49. Insofar as the allegation that the area on which the DG sets are being installed is outside the project area for which EC has not been granted is concerned, it is extremely important to note that EC has been granted for carrying out construction/ development of the entire project consisting of the commercial complex including the installation of DG sets, and no separate or specific EC is required for installation of DG sets as is the case sought to be set up by the Applicants.
50. The DG sets are being set up on a licensed land parcel forming part of the project premises, as is evident from the plans annexed to the 2nd EIA Report wherein the proposed DG sets and cooling towers are located in Part B of the project. Admittedly, the EC dated 09.04.2023 has been granted in relation to the expansion, meaning thereby that the said clearance covers the installation of DG sets and cooling towers as well. Therefore, there cannot be any basis in the

allegation that the DG sets are away from the “project site”. The land on which the DG sets are being installed is very much a part of the project site.

G. Re: Environmental concerns

51. It is the vehement allegation of the Applicants that the proposed installation of DG sets would cause grave risk to the health and lives of the residents of the Society.
52. In the aforesaid respect, it is humbly submitted that having due regard to the sound health and safety of not only the residents of the Applicant society but also the environment of the area as a whole, various conditions have already been incorporated by SEIAA in both the 2019 and 2023 ECs, which are not being reproduced hereunder for the sake of brevity.
53. For example, under the EC dated 06.05.2019, *clause 7* of the Specific Conditions requires that the diesel generator sets to be used during construction phase shall be ultra-low Sulphur diesel type and should conform to Environment (Protection) Rules prescribed for air and noise emission standards. Similarly, under *clause 8*, the diesel required for operating DG sets are to be stored in underground tanks and if required, clearance from Chief Controller of Explosives is required to be taken.
54. Further *clause e* under the head “Operational Phase”, inter-alia, requires DG sets to be of enclosed type and to conform to rules made under the Environment (Protection) Act, 1986, and that the Location of the DG sets shall be in the basement.
55. Similar safeguards/ conditions are also contained in the EC dated 09.04.2023.

56. The requisite authorities have taken into account multifarious factors including but not limited to the possible impact of installation of the DG sets on the areas in the vicinity, and only after ensuring that all due compliances are in place, the ECs have been granted to DLF. Therefore, the attempt of the Applicants to thwart the installation of DG sets by alleging violation of enviro norms or that the same would be detrimental to the environment and/ or the health and safety of residents in the Society, which all factors have already been duly considered by the authorities concerned, ought not to be entertained by this Hon'ble Tribunal.

57. Even the cost of repetition, it is submitted that post installation, all the conditions stipulated in the EC dated 09.04.2023, the CTE dated 17.08.2023 as also any further enviro-protection norms and directions prescribed/ issued by the requisite authorities would be duly complied with during the construction as well as the operation phase of the project.

H. **ALL NECESSARY COMPLIANCES HAVE ALREADY BEEN RECORDED IN THE "SIX-MONTHLY ENVIRONMENTAL COMPLIANCE REPORT OF STIPULATED CONDITIONS OF ENVIRONMENTAL CLEARANCE"**

58. The fact that the stipulations contained in the EC dated are being duly complied with by DLF is abundantly clear from the contents of the "*Six-Monthly Environmental Compliance Report(s)*" being submitted by DLF on the portal of the Ministry

A copy of the Compliance Reports by Ministry of Environment, Forest and Climate Change for reporting years 2023, 2024 & 2025 respectively are annexed herewith and marked as **ANNEXURE-R11 (COLLY.)**.

59. In view of the submissions advanced hereinabove, the only and inevitable conclusion that can be drawn is that neither any procedural irregularity has taken place nor is there violation of any norm, statute, rule, regulation etc. by DLF and that the present OA is a gross abuse of process solely aimed at disrupting the DG sets' installation work at the project premises.
60. In view of the foregoing, the Answering Respondent, i.e., DLF respectfully submits that the allegations made in the Original Application are baseless and devoid of merit. DLF, in the present Reply, has dealt with the allegations raised in the OA. However, DLF craves leave to file a detailed para-wise reply to the Original Application, if so required, and to make such further/ additional submissions as may be permitted by this Hon'ble Tribunal in the interest of justice.

FILED BY:

*Akshay
D/834/210*

**[KARANJAWALA & CO.]
ADVOCATES FOR RESPONDENT NO. 8
FIRST FLOOR, 212, ROUSE AVENUE,
DEEN DAYAL UPADHYAY MARG,
NEW DELHI-110002
EMAIL: service@karanjawala.in;
karanjawala@karanjawala.in
Mobile No. 9971527766**

**PLACE: NEW DELHI
DATED: 30.03.2026**

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)

AFFIDAVIT

I, Atul Srivastava, S/o Sh. H. C. Srivastava, aged about 57 years, Authorized Representative of the Respondent No. 8 Company in the above-mentioned matter having its office at DLF Centre, Sansad Marg, New Delhi – 110 001, do hereby solemnly affirm and state as under: -

1. That I am the Authorized Representative of the Respondent No.8 Company in the abovementioned matter and as such I am fully conversant with the facts and proceedings of the case.
2. That I have read and understood the contents of the accompanying Reply and I say that the facts stated therein are true and correct to my knowledge.
3. That the annexures annexed with the accompanying Reply are true copies of their respective originals.



For DLF Ltd.

[Signature]
Authorized Signatory
DEPONENT

VERIFICATION

Verified that the contents of the above-mentioned affidavit are true and correct to the best of my knowledge and belief. Nothing false has been stated therein and no material fact has been concealed therefrom.

Verified at *New Delhi*, on this *30th* day of March, 2026.

For DLF Ltd.
[Signature]
Authorized Signatory
DEPONENT

Identified by:
Hilshan Nain S/O
DT 31/03/24

ATTESTED
[Signature]
NOTARY PUBLIC
NEW DELHI

30 MAR 2026



KRBL LIMITED					
CIN: L01201SH1919PLC052845					
Regd. Off. : 5190, Lahori Gate, Delhi - 110 006					
Phone: 011-23968328, Fax: 011-23968327					
Email: investor@krblindia.com; Website: www.krblrice.com					
PUBLIC NOTICE FOR ISSUE OF DUPLICATE SHARE CERTIFICATE					
Members of the general public and existing shareholders of KRBL Limited ("Company") are hereby informed that the Original Share Certificate, details of which are given hereunder has been reported lost/stolen/lost/stolen/not received and that pursuant to requests received from concerned shareholder, the Company intends to issue duplicate share certificate in lieu of the said original Share Certificate (Face Value of Re.1/-) in favour of:					
Shareholder's Name	Folio No.	Share Cert. No.	Distinctive Nos.	Face Value (Rs.)	No. of Shares
Rajan Malik	187	79	227001-230000	1	3000
Any person having objection to issue of duplicate Share Certificate as mentioned hereinabove, may submit the same, in writing with the Company marked to the 'Secretarial Department' at its Registered Office or send an email at investor@krblindia.com within 7 days from the date of publication of this Notice. In the meanwhile, members of the public are hereby cautioned against dealing in the above mentioned Share Certificate.					
				For KRBL Limited Sd/- Jyoti Verma Company Secretary & Compliance Officer	
Date: 10 April 2023					
Place: Delhi					

जम्मु एंड कश्मीर बैंक लिमिटेड	
 जम्मु एंड कश्मीर बैंक लिमिटेड क्लरर कार्यालय (लखनऊ), अमीन कॉम्प्लेक्स, अकबरी गेट, लखनऊ यू.पी.-226003 ईमेल आईडी: clulock@jkbmail.com, फोन- +91(0)0124-4715800	
कच्चा सूचना प्रतिभूतिहित (प्रवर्तन) नियम, 2002 के नियम 8(1) के साथ पठित सरफेसी अधिनियम, 2002 की धारा 13(4) के तहत सूचना	
जबकि अधोहस्ताक्षरी ने वित्तीय परिस्थितियों के प्रतिभूतिकरण एवं पुनर्निर्माण तथा प्रतिभूति हित (सरफेसी) अधिनियम को प्रवर्तन के अधीन जम्मु एंड कश्मीर बैंक लिमिटेड का प्राधिकृत अधिकारी होने तथा प्रतिभूति हित (प्रवर्तन) नियमावली 2002 के नियम 3 के साथ पठित धारा 13(2) के अधीन प्रदत्त शक्तियों के अंतर्गत कर्जदार / बंधककर्ता और गारंटर अर्थात्	
1) मेसर्स उमर कंस्ट्रक्शन, मेहंदी सराय, सहारनपुर, यू.पी. -247001 (कर्जदार) 2) श्रीमती आयासा हसन पुत्र श्री नादिर हसन, मकान नं. 1255/1, मेहंदी सराय, धोबियों वाली मस्जिद के पास, सहारनपुर, यू.पी. - 247001. (गोपराईटर/बंधककर्ता) 3) श्री नादिर हसन पुत्र श्री सय्यद हसन, मकान नं. 11/1116/85वीं, मेहंदी सराय, सहारनपुर, यू.पी. -247001 (गारंटर) 4) श्री राशिद हुसैन पुत्र श्री सय्यद हसन, निवासी: पीर वाली गली नं. 1, राधान डिपो के पास, मंडी समिति रोड, सहारनपुर, यू.पी. -247001 (गारंटर)	
को एक मांग सूचना दिनांक 18-01-2023 को जारी किया था जिसमें सूचना में उल्लेखित राशि रु 20,51,250.55 (रु. बीस लाख इक्यावन हजार दो सौ पचास और पैसे पच्चनमात्र) कर्जदार के खाते में दिनांक 31.12.2022 तक बकाया और साथ में भविष्य का ब्याज एवं अन्य प्रभार इत्यादि सहित उक्त सूचना की प्राप्ति की तिथि से 60 दिनों के अंदर भुगतान करने को कहा गया था।	
कर्जदार उक्त राशि का भुगतान करने में असफल हो गये हैं, इसलिए एतद्वारा कर्जदार, तथा आम जनता को सूचित किया जाता है कि अधोहस्ताक्षरी जे एंड के बैंक लिमिटेड ने इसमें नीचे वर्णित संपत्ति का कब्जा, उक्त अधिनियम की धारा 13(4), उक्त नियमों के नियम 8 और 9 के साथ पठित के अधीन उक्त प्रदत्त शक्तियों के इस्तेमाल के अंतर्गत 06 अप्रैल 2023 को ले लिया है।	
विशेष रूप से कर्जदार तथा जनासाधारण को एतद्वारा उक्त संपत्ति के साथ लेन-देन न करने के लिए सावधान किया जाता है तथा संपत्ति के साथ कोई भी लेन देन जे एंड के बैंक लिमिटेड के प्रभार वास्ते राशि रु 20,51,250.55 (रु. बीस लाख इक्यावन हजार दो सौ पचास और पैसे पच्चनमात्र) और दिनांक 01.03.2023 से बैंक द्वारा अर्जित भविष्य का ब्याज एवं अन्य प्रभार इत्यादि सहित के अधीन होगा।	
कर्जदारों का ध्यान एकट की धारा 13 की उप धारा (g), के प्रावधानों के अंतर्गत सुरक्षित परिस्थितियों के मुक्त करने हेतु उपलब्ध समय सीमा की ओर आकर्षित किया जाता है।	
अचल सम्पत्ति का विवरण	
एक रिहायशी प्लॉट भूमि (जानकारी के अनुसार नगर निगम संख्या-11/4343 में वर्तमान में निर्मित रिहायशी भवन) क्षेत्रफल 63.33 वर्ग गज, 52.97 वर्ग मी. के बराबर, जिनमें से पूरब 23 फीट, पश्चिम 23 फीट 9 इंच, उत्तर 23 फीट 10 इंच, दक्षिण 23फीट, जोकि दारा अली स्वाद, सहारनपुर, आमतौर पर जिसे मेहंदी सराय कहते हैं, सहारनपुर में स्थित, यह सम्पत्ति श्रीमती आयासा हसन पत्नी श्री नादिर हसन के नाम पर है। चौहद्दी: पूरब में - रास्ता 7½ फीट, पश्चिम में - रास्ता 18 फीट, उत्तर में - इंताजर बेग का मकान, दक्षिण में - अफजल अहमद का मकान	
दिनांक: 06.04.2023, स्थान : सहारनपुर प्राधिकृत अधिकारी, जे एंड के बैंक लिमिटेड	

"IMPORTANT"	
Whilst care is taken prior to acceptance of advertising copy, it is not possible to verify its contents. The Indian Express (P) Limited cannot be held responsible for such contents, nor for any loss or damage incurred as a result of transactions with companies, associations or individuals advertising in its newspapers or Publications. We therefore recommend that readers make necessary inquiries before sending any monies or entering into any agreements with advertisers or otherwise acting on an advertisement in any manner whatsoever.	

सार्वजनिक सूचना	
आम जनता को एतद्वारा सूचित किया जाता है कि राज्य पर्यावरण प्रभाव मूल्यांकन प्राधिकरण (एसाईआईए), हरियाणा, वे नं. 55-58, पर्यटन भवन, सेक्टर-2, पंचकुला, हरियाणा ने अपनी पर्यावरणीय स्वीकृति पहचान संख्या ईसी23बी038एचआर159125 दिनांक 09/04/2023 के तहत पर्यावरण (संरक्षण) अधिनियम, 1986 के अधीन ईआईए अधिसूचना, 2006 के प्रावधानों के अनुरूप डीएलएफ लिमिटेड द्वारा सेक्टर 25ए गुरुग्राम, हरियाणा में 32.36 एकड़ (डीएलएफ डेवलपमेंट ऑपेराटिव रूप से मॉल ऑफ इंडिया के रूप में जाना जाता है) पर खरीदारी/आधिपत्यिक भवन के लिए पर्यावरण मंजूरी का विचार। आम जनता को आम सूचित किया जाता है कि उपरोक्त पर्यावरणीय स्वीकृति पत्र पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय/एसाईआईए, हरियाणा को वेबसाइट (http://www.environmentclearance.nic.in) प्रदर्शित किया गया है। यह सार्वजनिक सूचना ऊपर वर्णित पर्यावरणीय स्वीकृति पत्र की विधि शर्त सं. X(i) के अनुपालन में जारी की गई है।	
अधिकृत हस्ताक्षरी कृते डीएलएफ लिमिटेड	अधिकृत हस्ताक्षरी गेटवे टावर (दूसरा तल), डीएलएफ सिटी फेस III, गुरुग्राम, 122002, हरियाणा
स्थान-गुरुग्राम दिनांक: 11/04/2023	गेटवे टावर (दूसरा तल), डीएलएफ सिटी फेस III, गुरुग्राम, 122002, हरियाणा

Chola		चोलामंडलम इन्वेस्टमेंट एण्ड फाइनेंस कम्पनी लिमिटेड	
 Chola Enter a better life		कॉर्पोरेट कार्यालय : नं. 2, डेवर हाउस, प्रथम तल, एनएससी बांस रोड, चेन्नई-600 001. शाखा कार्यालय : 1ला तथा 2या तल, प्लॉट नं. 6, मेन पूसा रोड, करोल बाग, नई दिल्ली-110005 सम्पर्क नं. सुधीर तोमर : मोबाइल नं. : 9818460101	
अचल सम्पत्तियों की बिक्री हेतु ई-नीलामी बिक्री			
प्रतिभूति हित (प्रवर्तन) नियम, 2002 के नियम 9(1) के परन्तुक के साथ पठित वित्तीय आस्तियों के प्रतिभूतिकरण एवं पुनर्निर्माण तथा प्रतिभूति हित प्रवर्तन अधिनियम, 2002 के तहत अचल आस्तियों की बिक्री हेतु ई-नीलामी बिक्री सूचना			
एतद्वारा आम जनता को और विशेष रूप से कर्जदार/सह-कर्जदार/बंधककर्ता(ओं) को नोटिस दिया जाता है कि नीचे वर्णित अचल संपत्तियां प्रतिभूत लेनदार के पास गिरवी रखी गई हैं, जिसका सांकेतिक/भौतिक कब्जा चोलामंडलम इन्वेस्टमेंट एंड फाइनेंस कंपनी लिमिटेड जिसे इसके बाद चोलामंडलम इन्वेस्टमेंट एंड फाइनेंस कंपनी लिमिटेड के रूप में संदर्भित किया जाएगा, के प्राधिकृत अधिकारी द्वारा लिया गया है। प्रतिभूत संपत्तियों की बिक्री ई-नीलामी के माध्यम से "जहां है जैसे है अधार", "जो है यही है आधार" तथा "जो कुछ भी है वहां है आधार" के आधार पर की जाएगी। इसके द्वारा आम जनता को सूचित किया जाता है कि हम वेबसाइट https://chola-lap-procure247.com/ के माध्यम से सार्वजनिक ई-नीलामी आयोजित करने जा रहे हैं।			

क्र. सं.	खाता सं. तथा कर्जदार, सह-कर्जदार, बंधककर्ताओं के नाम	धारा 13(2) के तहत मांग सूचना की तिथि तथा राशि	सम्पत्ति/सम्पत्तियों का विवरण	आंशिक मूल्य, जमा धरोहर राशि, संवित वृद्धि राशि (रु. में)	ई-नीलामी की तिथि एवं समय, ईएमबी जमा करने की अनंतिम तिथि, निरीक्षण की तिथि
1.	(अणु खाता संख्या X0HEDE00002310273 और HE02DE00000004368 1. धर्मवीर सिंह डगार प्लॉट नं 701 राँवल होम्स सेक्टर 43, गुडगांव - 122002 2. राकेश डगार प्लॉट नं 701 राँवल होम्स सेक्टर 43, गुडगांव - 122002 3. सरोज देवी प्लॉट नं 701 राँवल होम्स सेक्टर 43, गुडगांव - 122002 4. मेसर्स धर्मवीर सिंह डगार अपने स्वामित्व/अधिकृत प्रतिनिधि के माध्यम से: बिल्डिंग नंबर-56, रोड नौदरी गुडगांव - 122102	13/09/2021 रु. 5,19,82,251.19/-	आवासीय इकाई संख्या 701, 7वीं मंजिल का समस्त भाग, माप 4700 वर्गफुट, एक कार पार्किंग स्पेस सं. 701, माप 377 वर्ग फीट, भूतल पर/रिस्ट के नीचे, रॉयल सीजीएचएस लिमिटेड के लेआउट प्लान में स्थित, प्लॉट नंबर जीएच-23, सेक्टर 43, गुडगांव, हरियाणा	रु. 4,75,00,000/- रु. 47,50,000/- रु. 1,00,000/-	28.04.2023 को 11.00 बजे पूर्वा. से 1.00 बजे अप. 27.04.2023,10.00 बजे पूर्वा. से 5.00 बजे अप. अनुमति के अनुसार
2.	(अणु खाता संख्या X0HEELD00003267966 और X0HEELD00003066814 और HE02ELD00000001036) 1. ज्ञान चंद्र शर्मा म.नं. टी-105 ए शिवाजी नगर नरैला उत्तर पश्चिम दिल्ली - 110040 2. अरुण राय म.नं. टी-105 ए शिवाजी नगर नरैला उत्तर पश्चिम दिल्ली - 110040 3. श्री प्रथम स्टीट एच फास्ट फूड मेन रोड, खसरान नं -10/24 फुकरान नं 2 सिन्धु कॉन्डै नरैला, नई दिल्ली - 110040 4. शार्प प्रमॉ म.नं. टी-105 ए शिवाजी नगर नरैला उत्तर पश्चिम दिल्ली - 110040	07/10/2021 रु. 2,61,66,347.33/-	मकान नं. टी. -105, माप 242 वर्ग गज का समस्त भाग, खसरान नं. 215 में से, ग्राम नरैला के क्षेत्र में, कॉलोनी गली नं. 1, शिवाजी नगर, नरैला, दिल्ली में स्थित, सीमार्ग है, पूर्व - गाऊ 20 फीट, पश्चिम - गली 15 फीट, उत्तर - सुभाष और अन्य की संपत्ति, दक्षिण - रामे की संपत्ति।	रु. 1,60,00,000/- रु. 16,00,000/- रु. 1,00,000/-	28.04.2023 को 11.00 बजे पूर्वा. से 1.00 बजे अप. 27.04.2023,10.00 बजे पूर्वा. से 5.00 बजे अप. अनुमति के अनुसार
3.	(अणु खाता सं. X0HEHDHE00001268202) 1. श्री अरुण शर्मा पता: मकान नंबर 143, बाग भटियारी, किराना मंडी, गाजियाबाद, उत्तर प्रदेश - 201001 पता: मकान नंबर 143, बाग भटियारी, किराना मंडी, गाजियाबाद, उत्तर प्रदेश - 201001 2. सुधीर कुमार मकान नंबर 143, बाग भटियारी, किराना मंडी, गाजियाबाद, उत्तर प्रदेश - 201001 3. अश्विषक गोयल मकान नंबर 143, बाग भटियारी, किराना मंडी, गाजियाबाद, उत्तर प्रदेश - 201001 4. अनुभव गोयल मकान नंबर 143, बाग भटियारी, किराना मंडी, गाजियाबाद, उत्तर प्रदेश - 201001 5. दीपा गोयल मकान नंबर 143, बाग भटियारी, किराना मंडी, गाजियाबाद, उत्तर प्रदेश - 201001	09/12/2022 रु. 1,72,31,338/-	सम्पत्ति प्लॉट नं. 143 का समस्त भाग, माप 284.274 वर्ग मीटर, मोहल्ला बाग भटियारी, गाजियाबाद, तहसील एवं जिला गाजियाबाद, उत्तर प्रदेश के ले-आउट प्लान में स्थित, सीमार्ग: पूर्व: गली नं. 12 फीट चौड़ा, पश्चिम :- आनंद प्रकाश और प्रेम प्रकाश का मकान, उत्तर:- कृष्ण कुमार का मकान, दक्षिण - सुधीर कुमार की संपत्ति	रु. 1,25,00,000/- रु. 12,50,000/- रु. 1,00,000/-	28.04.2023 को 11.00 बजे पूर्वा. से 1.00 बजे अप. 27.04.2023,10.00 बजे पूर्वा. से 5.00 बजे अप. अनुमति के अनुसार
4.	(अणु खाता सं. X0HEELD00003123193 तथा HE02ELD00000001141) 1. अश्विषा गोयल बी -49 राणा प्रताप बाग सीटी कॉलोनी मलका गंज के पास, नई दिल्ली -110007 2. दिव्याल गुप्ता बी -49 राणा प्रताप बाग सीटी कॉलोनी मलका गंज के पास, नई दिल्ली -110007 3. शकुन्तल देवी बी -49 राणा प्रताप बाग सीटी कॉलोनी मलका गंज के पास, नई दिल्ली -110007 4. मेसर्स बी.बी. इंट्राडिजिटल बी -49 राणा प्रताप बाग सीटी कॉलोनी मलका गंज के पास, नई दिल्ली -110007 5. इरुण प्रभा गुप्ता बी -49 राणा प्रताप बाग सीटी कॉलोनी मलका गंज के पास, नई दिल्ली -110007 6. मनोज कुमार गुप्ता बी -49 राणा प्रताप बाग सीटी कॉलोनी मलका गंज के पास, नई दिल्ली -110007	09/08/2021 रु. 4,72,35,064.40/-	संपत्ति नं. 49, ब्रॉक-बी में, माप 204.9 वर्ग गज, दिल्ली राज्य सरकार के कर्मचारी सोपवोलीएसएल के लेआउट प्लान में स्थित है, जिसे वर्तमान में सी.सी. कॉलोनी के रूप में जाना जाता है, राणा प्रताप बाग के सामने, दिल्ली; सीमार्ग:- पूर्व- प्लॉट नं. बी- 50, उत्तर- सड़क 30 फीट चौड़ा, पश्चिम- प्लॉट नंबर बी 48, दक्षिण- लेन 15 फीट चौड़ा	रु. 5,25,00,000/- रु. 52,50,000/- रु. 1,00,000/-	28.04.2023 को 11.00 बजे पूर्वा. से 1.00 बजे अप. 27.04.2023,10.00 बजे पूर्वा. से 5.00 बजे अप. अनुमति के अनुसार
5.	(अणु खाता संख्या X0HEED00002953240) 1. नवी प्रभा मुखर्जा ए-630, सेक्टर-19, नोएडा विस्तार, उत्तर प्रदेश-201301 साथ ही : रवि प्रभा कुक्कना, एफ-101, पहली मंजिल, सेक्टर-8, नोएडा गौतम बुद्ध नगर, नोएडा-201301 2. बेलावती बुक्कना ए-630, सेक्टर-19, नोएडा विस्तार, उत्तर प्रदेश-201301 3. भास्कर प्रताप मुखर्जा ए-630, सेक्टर-19, नोएडा विस्तार, उत्तर प्रदेश-201301 4. बन्दी विश्व एण्डस इन्फो प्रोप्राइटर के माध्यम से ए-630, सेक्टर-19, नोएडा विस्तार, उत्तर प्रदेश-201301	29/11/2021 रु. 85,58,900.05/-	आवासीय टाइप-III का समस्त भाग, ए-630, सेक्टर-19, नोएडा विस्तार 180.0 वर्ग मीटर, सेक्टर-19, नोएडा, जिला गाजियाबाद, उत्तर प्रदेश के ब्रॉक-ए में स्थित है, सीमार्ग: उत्तर-9' मीटर चौड़ी रोड, दक्षिण-प्लॉट नं. ए-597, सेक्टर-19, पूर्व-प्लॉट नं. ए-631, सेक्टर-19, पश्चिम-प्लॉट ए-629, सेक्टर-19	रु. 1,50,00,000/- रु. 15,00,000/- रु. 1,00,000/-	28.04.2023 को 11.00 बजे पूर्वा. से 1.00 बजे अप. 27.04.2023,10.00 बजे पूर्वा. से 5.00 बजे अप. अनुमति के अनुसार
6.	(अणु खाता संख्या X0HEHDHE00001073426 और X0HEELD00001410185) 1. वीरेंद्र कुमार म.नं.-जे-8, स्ट्रीट, सेक्टर-41 गांव नोएडा पीएस, नोएडा, सेक्टर-39 ब्रॉक-जे, गौतम बुद्ध नगर गाजियाबाद-201301 2. मधु गर्ग म.नं.-जे-8, स्ट्रीट, सेक्टर-41 गांव नोएडा पीएस, नोएडा, सेक्टर-39 ब्रॉक-जे, गौतम बुद्ध नगर गाजियाबाद-201301 3. श्री बालाजी एण्ड हाईवेयर इंडिया प्राइवेट लिमिटेड म.नं.-जे-8, स्ट्रीट, सेक्टर-41 गांव नोएडा पीएस, नोएडा, सेक्टर-39 ब्रॉक-जे, गौतम बुद्ध नगर गाजियाबाद-201301	10/10/2017 रु. 2,51,92,192.33	207 वर्ग मीटर की संपत्ति। आवासीय प्लॉट नंबर 8, ब्लॉक-जे, सेक्टर -41, नोएडा, जिला गौतम बुद्ध नगर, उत्तर प्रदेश में स्थित	रु. 4,16,00,000/- रु. 41,60,000/- रु. 1,00,000/-	28.04.2023 को 11.00 बजे पूर्वा. से 1.00 बजे अप. 27.04.2023,10.00 बजे पूर्वा. से 5.00 बजे अप. अनुमति के अनुसार
7.	(अणु खाता संख्या X0HEEDL00001812827 तथा X0HEDE00002953357 तथा HE02DE00000001792) 1. जयप्रकाश हसन 9754, गली नीम वाली, नयाव गंज आजाद मार्केट, पुल बंगरा नई दिल्ली - 110006 2. सीमा हसन 9754, गली नीम वाली, नयाव गंज आजाद मार्केट, पुल बंगरा नई दिल्ली - 110006 3. फैसल हसन 9754, गली नीम वाली, नयाव गंज आजाद मार्केट, पुल बंगरा नई दिल्ली - 110006 4. एसायक इन्वेस्टिगेशन एण्ड सर्वेयर्स 9754, गली नीम वाली, नयाव गंज आजाद मार्केट, पुल बंगरा नई दिल्ली - 110006 5. सैयद नजमुल हसन 9754, गली नीम वाली, नयाव गंज आजाद मार्केट, पुल बंगरा नई दिल्ली - 110006	17/01/2022 रु. 1,22,07,929.26/-	पहली और दूसरी मंजिल, तीसरी मंजिल छत के अधिकार सहित, सम्पत्ति संख्या 9754-55 पर निर्मित, क्षेत्रफल लगभग 125 वर्ग गज, वार्ड नं. 11, गली नीम अली, नयाव गंज, दिल्ली, सीमार्ग: निम्नानुसार:- पूर्व - संपत्ति संख्या XII/9756 से 58, पश्चिम - संपत्ति संख्या LI/9753, उत्तर - गली नीम वाली, दक्षिण - अन्य की संपत्ति	रु. 1,00,00,000/- रु. 10,00,000/- रु. 1,00,000/-	28.04.2023 को 11.00 बजे पूर्वा. से 1.00 बजे अप. 27.04.2023,10.00 बजे पूर्वा. से 5.00 बजे अप. अनुमति के अनुसार
8.	(अणु खाता संख्या - X0HEDEF00003439824 और HE02DEF000000001708) 1. मेसर्स बन्दी बहदुर एल्टिगंज खसरान नं.39/8/2, जोरफा शाहबाद डेवरी, दौलतपुर नई दिल्ली-110042 2.समीमा अग्रवाल एसयू-7, 3अस तल, पीतमपुरा नई दिल्ली-110034 3. स्वामी संतोष कुमार अग्रवाल अपने कानूनी उत्तराधिकारों के माध्यम से (विधवा अग्रवाल) एसयू-7, 3अस तल, पीतमपुरा नई दिल्ली-110034 4. सीमा अग्रवाल एसयू-7, 3अस तल, पीतमपुरा नई दिल्ली-110034	16/05/2022 रु. 4,96,90,577.61/-	संपत्ति नंबर 2 संपत्ति प्लॉट निजी जं. जे-एन भूतल पर बिना छत और टेरेस के अधिकार के और संलग्न शौचालय के साथ एक हॉल का सम्पूर्ण भाग, माप 25.81 वर्ग मीटर भूतल तल पर प्लॉट 5-डी/4-ए 5-डी-5, 5-डी/6 एमपीएल नंबर 5 वाली संपत्ति का हिस्सा, खसरान नंबर 128 और 129 भामसाह मार्ग, गांव राजपुर छवनी, दिल्ली में स्थित है, सीमार्ग: पूर्व:- उक्त संपत्ति का क्षेत्र भाग अर्थात ब्लॉक-अड उत्तर : रोड, दक्षिण : सम्पत्ति नंबर 5-सी, भामसाह मार्ग, दिल्ली संपत्ति संख्या 1. पहली मंजिल पर (छत और टेरेस के अधिकार के बिना) संपत्ति वाला प्लॉट ग्राहक नंबर जे -2 का समस्त भाग, संलग्न बिक्री विलेख में साइट नोडन में साल रंग में दिखाया गया, ब्लॉक नंबर-जे पर निर्मित, प्लॉट संख्या 5-डी / 4-ए, 5-0-5, 5-0/6, संपत्ति एमपीएल नं. 5 का हिस्सा, खसरान नं.128 और 129 में से, भामसाह मार्ग पर स्थित पीतमपुरा राजपुर छवनी, दिल्ली के क्षेत्र में, सीमार्ग: निम्नानुसार पूर्व:- उक्त संपत्ति का क्षेत्र भाग अर्थात ब्लॉक के परिधम: उक्त संपत्ति का क्षेत्र भाग अर्थात ब्लॉक-क उत्तर:- सड़क दक्षिण:- संपत्ति सं. 5-सी, भामसाह मार्ग, दिल्ली	रु. 1,70,00,000/- रु. 17,00,000/- रु. 1,00,000/-	28.04.2023 को 11.00 बजे पूर्वा. से 1.00 बजे अप. 27.04.2023,10.00 बजे पूर्वा. से 5.00 बजे अप. अनुमति के अनुसार
9.	(अणु खाता संख्या X0HEDES00002065434 और HE02DES000000003111 तथा X0HEDES00002425740) 1. राधेश्याम वर्मा मकान नं.ए-56, सेक्टर-3, चिरंजीव विहार, गाजियाबाद, गाजियाबाद, उत्तर प्रदेश-2010022 2. राधेश्याम वर्मा प्लॉट नंबर-2, बाग वाली कॉलोनी, शास्त्री नगर, बाल्मीकि मंदिर के पास, गाजियाबाद, गाजियाबाद, उत्तर प्रदेश-201001 3. मेसर्स जय दुर्गा जैनेयर्स मकान नं.ए-56, सेक्टर-3, चिरंजीव विहार, गाजियाबाद, गाजियाबाद, उत्तर प्रदेश-201002 4. अनंता वर्मा मकान नं.ए-56, सेक्टर-3, चिरंजीव विहार, गाजियाबाद, गाजियाबाद, उत्तर प्रदेश-201002 5. नितिन कुमार वर्मा मकान नं.ए-56, सेक्टर-3, चिरंजीव विहार, गाजियाबाद, गाजियाबाद, उत्तर प्रदेश-201002	31/01/2022 रु. 1,45,07,409.17/-	प्लॉट नंबर ए-56, माप 257.45 वर्ग मीटर, असेल, सेक्टर -3, चिरंजीव विहार कॉलोनी, हदबस्त गांव महरीली, राजपुरा, हरसवत, परराना डासना, तहसील और जिला गाजियाबाद, उत्तर प्रदेश, इसके पश्चात 'कथित सम्पत्ति' सन्दर्भित, सीमार्ग : पूर्व-प्लॉट संख्या सी-73, पश्चिम - रास्ता, उत्तर - प्लॉट नंबर ए -55 दक्षिण-प्लॉट नं. ए-57	रु. 1,40,00,000/- रु. 14,00,000/- रु. 1,00,000/-	28.04.2023 को 11.00 बजे पूर्वा. से 1.00 बजे अप. 27.04.2023,10.00 बजे पूर्वा. से 5.00 बजे अप. अनुमति के अनुसार
10.	(अणु खाता संख्या X0HEHDHE00001252292) 1. नवीन कुमार पता: डब्ल्यूजेड-176ए, गली नंबर-5 और 6, भूतल कृष्णा पार्क, तिलक नगर, नई दिल्ली-110018 2. श्रीमती उषा पता: फ्लैट नंबर-16सी एच-ब्रॉक तिलक विहार, तिलक नगर, नई दिल्ली-110018 3. परवीन कुमार पता: डब्ल्यूजेड-176 गली नं 5 कृष्णा पार्क, नई दिल्ली-110018	12/06/2021 रु. 56,17,383.31/-	संपत्ति संख्या डब्ल्यूजेड-176-ए, प्लॉट नंबर 176 के हिस्से के भूतल का समस्त भाग, ग्राम नंगली जलाव, कृष्णा पार्क, खसरान नंबर 3 में में स्थित, माप 75 वर्ग गज (लगभग), गली नंबर 5 और 6, नई दिल्ली	रु. 20,00,000/- रु. 2,00,000/- रु. 50,000/-	28.04.2023 को 11.00 बजे पूर्वा. से 1.00 बजे अप. 27.04.2023,10.00 बजे पूर्वा. से 5.00 बजे अप. अनुमति के अनुसार

- सभी इच्छुक प्रतिभागी/बोलीदाता कृपया वेबसाइट <https://chola-lap.procure247.com/> तथा <https://www.cholamandalam.com/auction-notices> देखें। विवरण, सहायता, प्रक्रिया तथा ई-नीलामी पर ऑनलाइन प्रशिक्षण के लिए संपर्कित बोलीदाता सम्पर्क करें : (युहम्मद रहिस - 81240 00030), Ms.Procure247.; श्री अश्वय बोरिसा सेल नं. 7046612345/ 9898256524. ई-मेल आईडी : alpesh@procure247.com, suraj@tender247.com, parin@tender247.com
- ई-नीलामी में भाग लेने के लिए विस्तृत नियम एवं शर्तों के लिए कृपया देखें : <https://chola-lap.procure247.com/> तथा <https://www.cholamandalam.com/auction-notices>.

यह प्रतिभूति हित (प्रवर्तन) नियम, 2002 के नियम 9(1) के तहत एक वैधानिक 15 दिनों का बिक्री नोटिस भी है

स्थान : दिल्ली, रा.रा.क्षे. तिथि : 11.04.2023, ह./- अधिकृत प्राधिकारी, चोलामंडलम इन्वेस्टमेंट एंड फाइनेंस कंपनी लिमिटेड

जम्मु एंड कश्मीर बैंक लिमिटेड	
 जम्मु एंड कश्मीर बैंक लिमिटेड इम्पेयर्ड आसिटे पोटेंशियलिये प्रबंधन विभाग आंचलिक कार्यालय दिल्ली, प्लॉट नं. 132-134 सेक्टर 44, गुडगांव, (हरियाणा) फोन +91 (0)0124-4715800, फेक्स+91 (0)0124-4715800, ई मेल: iapmd.del@jkbmail.com	
ई-नीलामी सूचना (सरफेसी अधिनियम, 2002 के तहत बंधक रखी अचल संपत्तियों की बिक्री हेतु) [नियम 8(6) के परंतुक देखें]	
एतद्वारा जनासाधारण को एवं विशेष रूप से कर्जदारों एवं गारंटरों को सूचित किया जाता है, कि नीचे वर्णित सम्पत्तियां जो प्रतिभूत लेनदार के पास बंधक/प्रभारित हैं, का भौतिक कब्जा, जम्मु एंड कश्मीर बैंक लिमिटेड, शाखा कार्यालय गाजियाबाद, मेसर्स डी पी स्टील्स, पंजीकृत कार्यालय 208, द्वितीय तल, अंसल सुभेधा आरखरीसी राज नगर, गाजियाबाद यू.पी. और दुकान संख्या 1059, विकास नगर, मेरठ रोड, गाजियाबाद (यूपी	

BEFORE THE NATIONAL COMPANY LAW TRIBUNAL, NEW DELHI BENCH COMPANY APPLICATION NO. C.A. (CAA) - 04/ND/2023 In the matter of Sections 230-232 and other applicable provisions of the Companies Act, 2013 read with Companies (Compromises, Arrangements and Amalgamations) Rules, 2016

ADVERTISMENT OF NOTICE OF THE MEETING(S) OF THE SECURED CREDITORS AND UNSECURED CREDITORS OF SARA TEXTILES LIMITED (APPLICANT COMPANY-6 / TRANSFEREE COMPANY)

Table with 4 columns: S. No., Name of the Meetings, Date and Time, Mode. Rows include meetings for Sara Textiles Limited and Sara Textiles Limited.

Deepit Singh Director SARIN: 00035623 Sara Textiles Limited

IMPORTANT Whilst care is taken prior to acceptance of advertising copy, it is not possible to verify its contents. The Indian Express (P) Limited cannot be held responsible for such contents...

FORM NO. INC-26 [Pursuant to rule 30 the Companies (Incorporation) Rules, 2014] Advertisement to be published in the newspaper for change of Registered Office of the Company from one State to another

PROCLAMATION REQUIRING ATTENDANCE OF DEFENDANT (ORDER 5, Rule 20 of the Code of Civil Procedure) IN THE COURT OF NEHA SHARMA CIVIL JUDGE-01 (SOUTH DISTRICT)

PUBLIC NOTICE General Public is hereby informed that the State Environment Impact Assessment Authority (SEIAA), Haryana, Bay No. 55-58, Prayatan Bhawan, Sector-2, Panchkula, Haryana, vide its EC Identification No. EC23B038HR/159125, dt 09/04/2023 has been accorded Expansion of Environmental Clearance for Shipping/Commercial Building on 32.36 acres/DLF Limited known as Mall of India/ Sector 25A Gurugram, Haryana, by DLF Downstream in accordance with the provisions of the EIA Notification, 2006 under the Environment (Protection) Act, 1986.

TATA CAPITAL FINANCIAL SERVICES LIMITED Regd. Office: 11th Floor, Tower A, Peninsula Business Park, Ganpatrao Kadam Marg, Lower Parel, Mumbai-400013.

POSSESSION NOTICE (As per Appendix IV read with Rule 8(1) of the Security Interest Enforcement Rules, 2002) Whereas, the undersigned being the Authorized Officer of the Tata Capital Financial Services Ltd., under the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 and in exercise of powers conferred under Section 13(12) read with Rule 3 of the Security Interest (Enforcement) Rules, 2002, issued a Demand Notice dated 21.06.2022 calling upon the Borrower & Co-Borrowers/Guarantors, i.e., (1) Praveen Aggarwal; (2) Ruchi Bansal; Both Resident of: House No. 574, 2nd Floor, Ram Nagar Moti Ram Nagar, Moti Ram Road, Shahdara, Delhi-110032 and (3) Vansha Traders; House No. 574, 2nd Floor, Ram Nagar Moti Ram Nagar, Moti Ram Road, Shahdara, Delhi-110032; (4) Triloki Nath Bansal, House No. 574, 2nd Floor, Ram Nagar Moti Ram Road, Moti Ram Road, Shahdara, Delhi-110032. Also At: House No. D-218, Street No. 7, Gauri Extension, Bhajpur, Delhi-110053 to repay the amount mentioned in the Demand Notice being Rs. 54,34,455/- (Fifty Four Lakh Thirty-Four Thousand Four Hundred Fifty Five Only) as on 21.06.2022 vide loan account bearing No. 21430790 restructured to Loan A/c. No. TCFLA38600010952112 along with interest plus penal interest charges, costs etc. within 60 days from the date of the said notice.

FORM G INVITATION FOR EXPRESSION OF INTEREST FOR ECO AUTO COMPONENTS LIMITED OPERATING IN MANUFACTURING OF PARTS AND ACCESSORIES FOR MOTOR VEHICLES AND THEIR ENGINES AT FARIDABAD, HARYANA

कार्यालय, अधिशासी अभियन्ता, द्वितीय निर्माण शाखा, उत्तराखण्ड पेयजल संसाधन विकास एवं निर्माण निगम, कोटद्वार (पीडी गढ़वाल), ई-मेल: ee2ndcdkt@gmail.com

KRBL LIMITED CIN: L01111DL1993PLC052845 Regd. Off.: 5190, Lahori Gate, Delhi - 110 006 Phone: 011-23968328, Fax: 011-23968327 Email: investor@krblindia.com; Website: www.krbl.com

SUPREME HOUSING FINANCE LIMITED POSSESSION NOTICE [(Appendix IV) Rule 8(1)] Whereas the Authorized officer of Ms Supreme Housing Finance Ltd, a Housing Finance Bank Company under the National Housing Bank Act, under the provision of the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 (54 of 2002) (hereinafter referred to as "SARFAESI Act, 2002") having its Registered Office at 2nd Floor, Hansa Bhawan, 13/29, E-Block, Middle Circle, Connaught Place, New Delhi-110001 (hereinafter referred to as "SHFL") and in exercise of powers conferred under Section 13(12) read with Rule 3 of the Security Interest (Enforcement) Rules, 2002 issued a Demand Notice to the following (Borrowers) & (Co-Borrowers) to repay the amount mentioned in the notice within 60 days from the date of receipt of the said notice.

Table with 5 columns: Name of the Borrower(s)/Co-Borrower(s), Description of the Secured Asset (Immovable Property), Total Outstanding Dues (Rs.), Date of Demand Notice, Date of Possession. Rows include Mrs. Moha Hira, Mrs. Shikangi Tiwari, Mr. Chob Singh, etc.

TATA CAPITAL FINANCIAL SERVICES LIMITED Regd. Office: 11th Floor, Tower A, Peninsula Business Park, Ganpatrao Kadam Marg, Lower Parel, Mumbai-400013. DEMAND NOTICE Under Section 13 (2) of the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 ("Act") read with Rule 3 of the Security Interest (Enforcement) Rules, 2002 ("Rules").

Name and Address of Borrower/Co-Borrower: 1. SITARAM KUMAWAT S/O HANUMAN RAM, 1149, KASYA KE DHANI, ROOPGARH, AJMER, RAJASTHAN - 305814 PH No. 9887839742 ALSO AT: LAVISH MARBLE HANDICRAFT, MAKARANA ROAD, INDASTERAL, AREA ROOPGARH - 305814 2. VIMLA DEVI W/O SITARAM KUMAWAT, 1149, KASYA KE DHANI, ROOPGARH, AJMER, RAJASTHAN - 305814 3. BHANWAR LAL S/O GHISHA 1124, KASYA KE DHANI, ROOPGARH, AJMER, RAJASTHAN - 305814, PH No. 8003748675 4. HANUMAN S/O KESARA, 1132, KASYA KE DHANI, ROOPGARH, AJMER, RAJASTHAN - 305814 Demand Notice dated: 21-Dec-22 Amount of Demand Notice: Rs. 13,72,853/- (Rupees Thirteen Lakh Seventy Two Thousand Eight Hundred Fifty Three Only)

HINDUJA HOUSING FINANCE LIMITED 1st Floor, SRP Complex, Karamchari Nagar, Bareilly-243001 NOTICE UNDER SECTION 13(2) OF THE SECURITIZATION AND RECONSTRUCTION OF FINANCIAL ASSETS AND ENFORCEMENT OF SECURITY INTEREST ACT, 2002 (SARFAESI ACT)

JAMMU & KASHMIR BANK LIMITED Cluster Office (Lucknow), Ameen Complex, Akbari Gate, Lucknow UP-226003 Email id: cluluck@jkbmail.com, T +91(0)124-4715800 POSSESSION NOTICE Notice under Section 13 (4) of the SARFAESI ACT, 2002 read with Rule 8(1) of the Security (Enforcement) Interest Rules, 2002

JAMMU & KASHMIR BANK LIMITED IMPAIRED ASSETS PORTFOLIO MANAGEMENT DEPARTMENT Zonal Office Delhi, Plot No.132-134 Sector 44, Gurgaon, (Haryana) T +91 (0)124-4715800, F +91 (0)124-4715800, Email : lapm.del@jkbmail.com

E-Auction Notice (For sale of Immovable Mortgaged Property/ies under the SARFAESI Act, 2002) [Refer Proviso to rule 8(6)] Notice is hereby given to the public in general and to the borrowers and guarantors in particular that the below mentioned property mortgaged to the Jammu & Kashmir Bank Ltd., Branch Office Ghaziabad, as security for the working capital facility extended in favour of M/s D P Steels Registered office at 208, 2nd floor, Ansal Sumedha RDC Raj Nagar, Ghaziabad U.P. and also at Shop no 1059, Vikas Nagar, Meerut Road, Ghaziabad, U.P. the physical possession of which has been taken by the Authorised officer of the Bank under Section 13(4) of the SARFAESI Act, will be sold through E-auction on "AS IS WHERE IS" "AS IS WHAT IS" AND "WHATEVER THERE IS" basis on 15-05-2023, for recovery of Rs.6,47,41,408.22 (Rupees Six Crore Forty Seven Lacs Forty One Thousand Four Hundred Eight and Paise 270 Only) as on 31.03.2023 along with interest, cost etc., thereon w.e.f. 01-04-2023 due to the bank from concerned borrower(s), mortgagor(s) and guarantor(s) viz:-

ENVIRONMENT IMPACT ASSESSMENT REPORT
(Including Form I, IA & TOR compliance)
FOR

July 2018

**“SHOPPING/ COMMERCIAL BUILDING ON 32.36
ACRES SITE (MALL OF INDIA)**

At

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

ToR letter no. : SEIAA/HR/2018/630 dated 15.06.2018

Total Built-up area : 10,57114.09

Category : “B” Schedule 8(b)

Being Developed by:

M/s DLF City Centre Limited.

Gateway Tower (2nd Floor), DLF City, Phase-III, Gurugram-122002, Haryana

Contact person : Giriraj Shah

Phone No. : 9873351733

Email-id : dlfmallofindia7@gmail.com

M/s PERFECT ENVIRO SOLUTIONS PVT LTD

NABET Registered Vide List of accredited Consultants organization/ Rev 67/ 9th July 2018 at S.No.-114)

5th Floor, NN Mall, Mangalam Place,

Sector 3, Rohini, New Delhi-110085

Email: info@perfectgroup.com; Phone: 011- 49281360

DLF CITY CENTRE LIMITED**(CIN-U70102DL2008PLC180096)**

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

Date: 31st July 2018

The Secretary
State Expert Appraisal Committee (SEAC), Haryana
Bays No: 55-57, Paryatan Bhawan
Sector-2, Panchkula,
Haryana

Sub: **Environmental Clearance for Shopping/ Commercial Building on 32.36 acres Site (Mall of India) in Block-V, DLF City Phase-III, Sector-25A, Gurgaon, Haryana**
- Submission/ circulation of documents for appraisal of the project in SEAC meeting.

Proposal No.: **SIA/HR/NCP/25660/2018**

Ref: **SEAC letter F. No. HR/SEAC/434/3004 dated 27.07.2018 regarding EC appraisal 175th meeting of SEAC on 13.08.2018**

Sir,

In reference to above mentioned subject and SEAC meeting scheduled on 13.08.2018 w.r.t appraisal of the project for Environmental Clearance, we are hereby submitting/ circulating the following document in a single volume for consideration:

- 1) EC application Form1,
- 2) EC application Form1A,
- 3) TOR Compliance
- 4) EIA report (based on approved TOR)

We request you to recommend our proposal for Environmental Clearance of the subject project at the earliest.

Thanking you,

Yours sincerely,
for M/s DLF City Centre Limited



Authorized signatory

Encl: as above



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Enclosure 1: FORM 1 & 1A

Project Proponent:

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FORM 1**(I) Basic Information**

S. No.	Item	Details
1.	Name of the project/s	Shopping/ Commercial Building on 32.36 acres Site (Mall of India) in Block-V, DLF City Phase-III, Sector-25A, Gurgaon
2.	S. No. in the Schedule	S. No. 8 (b): Building and Construction Project
3.	Proposed capacity/ area/ length/ tonnage to be handled/ command area/ lease area/ number of wells to be drilled:	
	Type of project	Shopping/ Commercial Building
	Plot area	130,956.066 m ² (32.36 acres)
	Built-up area	1057,114.09 m ² (including basements & other built up area)
	Number of floors	Max: LG+UG+8 Floors + 5 level basements
	Area utilization	Lower & upper ground floor and 1 st to 5 th floors: Retail 6 th floor to 8 floor: Office; Basements: parking & services
	Project Cost	Rs. 4,551 Crores
4.	New/ Expansion/ Modernization	New
5.	Existing capacity/ area etc.	Nil
6.	Category of project i.e. 'A' or 'B'	Category 'B'
7.	Does it attract the general condition? If yes, please specify.	No
8.	Does it attract the specific condition? If yes, please specify.	No
9.	Location	Block-V, DLF City Phase-III, Sector-25A, Gurgaon
	Plot/ survey/ khasra no.	
	Village	Block-V, DLF City Phase-III, Sector -25A, Gurgaon
	Tehsil	Gurgaon
	District	Gurgaon
	State	Haryana

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S. No.	Item	Details
10.	Nearest railway station/ airport along with distance in kms	Rly station: Gurgaon Rly Stn at 7.8 km WNW Airport: IGI Airport, Delhi at 6.8 km NNE
11.	Nearest town, city, district headquarters along with distance in kms	The project is located within the Gurgaon city limit.
12.	Village panchayats, zilla parisad, municipal corporation, local body (complete postal addresses with telephone nos. to be given)	Municipal Corporation Gurgaon
13.	Name of the applicant	M/s DLF City Centre Limited
14.	Registered address	1E, Jhandewalan Extension, Naaz Cinema Complex, New Delhi
15.	Address for correspondence:	
	Name	Mr. Giri Raj Shah
	Designation (Owner/ partner/ CEO)	Authorized Signatory
	Address	Gateway Tower (2nd Floor), DLF City, Phase-III, Gurgaon-122002, Haryana
	Pin Code	122002
	E-mail	dlfmallofindia7@gmail.com
	Telephone no.	01244769000
	Fax no.	
16.	Details of alternative sites examined, if any. Location of these sites should be shown on a topo sheet.	Not Applicable
17.	Interlinked projects	Not Applicable
18.	Whether separate application of interlinked project has been submitted?	Not Applicable
19.	If yes, date of submission	Not Applicable
20.	If no, reason	Not Applicable

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S. No.	Item	Details
21.	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z. Notification, 1991?	No No No
22.	Whether there is any government order/policy relevant/ relating to the site?	No
23.	Forest land involved (hectares)	Nil
24.	Whether there is any litigation pending against the project and/ or land in which the project is propose to be set up?	No
	(a) Name of the Court	Not Applicable
	(b) Case No.	Not Applicable
	(c) Orders/directions of the court, if any and its relevance with the proposed project.	Not Applicable

(II) Activity

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.1	Permanent or temporary change in landuse, land cover or topography including increase in intensity of land use (with respect to local landuse plan)	No	The proposed project is construction of a Shopping/ Commercial Building on vacant land. The site is ear-marked for commercial development as per Gurgaon -Manesar Master plan 2021 AD; hence no change in land-use is envisaged.
1.2	Clearance of existing land, vegetation and buildings?	No	This was a vacant piece of land. No clearance of vegetation and structure is required.

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S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.3	Creation of new land uses?	No	The project site is earmarked for commercial development as per the local development plan and will be developed as per the local building by-laws. Hence, no new land use will be created.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	Yes	Soil testing will be conducted during detailed engineering study.
1.5	Construction works?	Yes	All construction activities will be confined within the project premises; there will be no physical changes outside the project boundary.
1.6	Demolition works?	No	Project site is vacant land. Demolition not required.
1.7	Temporary sites used for construction works or housing of construction workers?	No	The construction activities including storing of raw materials will be confined within the project site only. No temporary labour camp will be constructed at site. Construction workers will be transported from labour camp of the contractor located at a distance.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	Excavation was carried out for foundation and construction of basements after obtaining the Environmental Clearance dated 30.07.2007 from the MoEF, Delhi. 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.
1.9	Underground works including mining or tunnelling?	No	No underground works including mining/ tunnelling is required except excavation of earth for the construction of basements.
1.10	Reclamation works?	No	No reclamation work required.
1.11	Dredging?	No	No dredging required.
1.12	Offshore structures?	No	No offshore structures required.
1.13	Production and manufacturing processes?	No	Since, it is a construction of shopping/commercial building, no production/ manufacturing process is involved.

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S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.14	Facilities for storage of goods or materials?	Yes	Raw materials will be stored at the offsite batching plant site. Cement will be stored in covered space. Sand will be stacked under tarpaulin cover.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	<p><u>Solid Waste:</u></p> <p>During operation phase, the solid waste generated from project will be 9,322 kg/day which will be domestic in nature. Solid wastes generated will be segregated into biodegradable (waste vegetables and foods etc.) and non-biodegradable (papers, cartons, thermocol, plastics, glass etc.) components and collected in separate bins. The biodegradable wastes will be composted in an on-site composting unit and the manure will be used for landscaping. The non-biodegradable/ recyclable wastes will be disposed at HUDA designated site through authorized vendors.</p> <p><u>Liquid Effluent:</u></p> <p>In operation phase, the sewage (1866.8 kld) will be treated up to tertiary level in an on-site STP of 2200 kld capacity and the entire (100%) treated sewage will be used for cooling, toilet flushing and horticulture. Therefore, during normal operations, there will be zero discharge, as the entire treated sewage will be recycled.</p>
1.16	Facilities for long term housing of operational workers?	No	There will be no facilities for long-term housing of operational workers.
1.17	New road, rail or sea traffic during construction or operation?	No	<p>In construction stage some vehicles will be operated at the site for construction work and transport of construction materials.</p> <p>During operation traffic will increase to some extent. But there will be no rail or sea traffic.</p>

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S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.18	New road, rail, air water born or other transport infrastructure including new or altered routes and stations, ports, airports etc.?	No	The project has access through the service road of NH8 and Mousari Avenue. The project site is well connected to network of roads leading to various parts of NCR. So no new road will be laid during construction or operation of the project except for internal roads & pavements.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	Not applicable.
1.20	New or diverted transmission lines or pipelines?	No	There will be no shifting of electrical transmission lines.
1.21	Impoundment, dammin culverting, realignment or oth changes to the hydrology watercourses or aquifers?	No	No impoundment, damming, culverting, realignment or other changes to the hydrology of surface water-courses is proposed.
1.22	Stream crossings?	No	Not applicable
1.23	Abstraction or transfers of water form ground or surface waters?	No	In operation stage, total water requirement will be 3283.8 kld, out of which 1510.3 kld (45.9%) will be fresh water met from the Municipal/ HUDA Supply, and the balance 1773.5 kld (44.1%) will be met from recycle of treated sewage from the on-site STP. No groundwater will be used.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	Surface drainage will not be affected.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	Transport of personnel/ material during construction and operation phase are envisaged. Adequate parking space (10,522 ECS) will be provided for operational phase.
1.26	Long-term dismantling decommissioning or restoratic works?	No	Not applicable

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S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	Not applicable.
1.28	Influx of people to an area in either temporarily or permanently?	No	Construction workers will be transported from labour camp of the contractor to be located at a distance. The proposed project is a shopping/commercial building. Thus, no influx of residential people is envisaged.
1.29	Introduction of alien species?	No	Not applicable.
1.30	Loss of native species or genetic diversity?	No	Not applicable.
1.31	Any other actions?	No	Not anticipated.

2. Use of Natural resources for construction or operation of the project (such as land, water, materials or energy, especially any resources, which are non-renewable or in short supply):

S. No.	Information/ Checklist confirmation	Yes / No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	No	Project site is vacant land, earmarked for commercial development by the local development authority.
2.2	Water (expected source & competing users) unit: kld	Yes	In operation stage, total water requirement will be 3283.8 kld, out of which 1510.3 kld (45.9%) will be fresh water met from the Municipal/HUDA Supply, and the balance 1773.5 kld (44.1%) will be met from recycle of treated sewage from the on-site STP. No groundwater will be used.
2.3	Minerals (MT)	No	Not applicable.

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S. No.	Information/ Checklist confirmation	Yes / No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data																
2.4	Construction material-stone, aggregates, sand/ soil (expected source-MT)	Yes	<p>Construction materials required:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Steel</td> </tr> <tr> <td>2.</td> <td>Cement</td> </tr> <tr> <td>3.</td> <td>Stone Aggregate</td> </tr> <tr> <td>4.</td> <td>Sand</td> </tr> <tr> <td>5.</td> <td>Bricks</td> </tr> <tr> <td>6.</td> <td>Glass</td> </tr> <tr> <td>7.</td> <td>Flyash based products</td> </tr> </tbody> </table> <p>Source: Steel and cement will be procured by the contractor from authorized vendors. Sand & aggregate will be procured by the contractor from local material suppliers.</p>	S. No.	Material	1.	Steel	2.	Cement	3.	Stone Aggregate	4.	Sand	5.	Bricks	6.	Glass	7.	Flyash based products
S. No.	Material																		
1.	Steel																		
2.	Cement																		
3.	Stone Aggregate																		
4.	Sand																		
5.	Bricks																		
6.	Glass																		
7.	Flyash based products																		
2.5	Forests and timber (source - MT)	No	None																
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Power requirement is 28,310 kW that will be met from Grid supply of Dakshin Haryana Bijli Vitaran Nigam (DHBVN). DG sets of total capacity 40,000 kVA (20x2000 kVA) will be provided as 100% backup power supply during power failure. Ultra low sulphur diesel (ULSD) will be used as fuel for DG sets.																
2.7	Any other natural resources (use appropriate standard units)	No	None																

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3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

S. No.	Information/ Checklist confirmation	Yes / No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
3.1	Use of substances or materials which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	The proposed project is a office building and hence, no storage of hazardous chemicals (as per MSIHC rules) will be done, except HSD required to run backup DG sets, for which the quantity stored will be below the threshold limit specified in the MSIHC rules. Necessary permission will be obtained from the Explosives Dept.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Suitable drainage and waste management measures will be adopted in both construction and operational phase, which will restrict stagnation of water or accumulation of waste. This will effectively restrict the reproduction and growth of disease vectors.
3.3	Affect the welfare of people e.g. by changing living conditions?	No	No use, storage, transport, handling or production of any harmful product is envisaged from the proposed project. Thus, no major adverse impacts on the human health/ environment are envisaged. Moreover, this project will provide employment to local labours in the construction phase and workers during the operation phase. Thus, the project will have beneficial impacts.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	Not applicable.
3.5	Any other causes	No	Not anticipated.

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4. Production of solid wastes during construction or operation or decommissioning (MT/ month)

S. No.	Information / Checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data						
4.1	Spoil, overburden or mine wastes	No	No such spoil, overburden or mine wastes will be generated.						
4.2	Municipal waste (domestic and or commercial wastes)	Yes	<p>Solid wastes to be generated in project will be of domestic municipal in nature. Composition & quantity of solid wastes during operation phase will be:</p> <table border="1"> <tr> <td>Biodegradable</td> <td>3,729 kg/ day (Waste vegetables and foods etc.)</td> </tr> <tr> <td>Non-biodegradable</td> <td>5,593 kg/ day (Papers, cartons, thermocol, plastics etc.)</td> </tr> <tr> <td>Total:</td> <td>9,322 kg/ day</td> </tr> </table>	Biodegradable	3,729 kg/ day (Waste vegetables and foods etc.)	Non-biodegradable	5,593 kg/ day (Papers, cartons, thermocol, plastics etc.)	Total:	9,322 kg/ day
Biodegradable	3,729 kg/ day (Waste vegetables and foods etc.)								
Non-biodegradable	5,593 kg/ day (Papers, cartons, thermocol, plastics etc.)								
Total:	9,322 kg/ day								
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	<p>The only hazardous wastes in the project will be used /spent oil from backup DG sets, which is classified as Hazardous Waste Category 5.1 as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.</p> <p>Spent Oil from backup DG sets will be carefully stored in HDPE drums in isolated covered facility. This spent oil will be sold to authorized recyclers. Suitable care will be taken so that spills/ leaks of spent oil from storage could be avoided.</p>						
4.4	Other industrial process wastes	No	Not applicable						
4.5	Surplus product	No	Not applicable						
4.6	Sewage sludge or other sludge from effluent treatment	Yes	The sludge generated from STP will be dewatered/ dried and used as manure.						
4.7	Construction or demolition wastes	Yes	The construction waste will consist of excess earth and construction debris along with cement bags, steel in bits and pieces, insulating and packaging materials etc.						

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S. No.	Information / Checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
			Recyclable waste construction materials will be sold to recyclers. Unusable and excess construction debris will be disposed at designated places in tune with the local norms.
4.8	Redundant machinery or equipment	No	Not applicable
4.9	Contaminated soils or other materials	No	Not applicable
4.10	Agricultural wastes	No	Not applicable
4.11	Other solid wastes	No	-

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/ hr)

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	The proposed project does not envisage any major air pollution sources except operation of back-up DG sets during power failure and vehicular traffic. The only source of emission from combustion of fuel will be DG sets of capacity 20 x 2000 KVA. Detailed Impact of emissions on air from stationary or mobile sources is considered in chapter 4 section 4.3 of EIA Report.
5.2	Emissions from production processes	No	Not applicable
5.3	Emissions from materials handling including storage or transport	Yes	Dust may arise due to the materials handling during the construction phase which will be restricted to the construction phase and construction site only. Dust shall be generated during construction, from the movement of transport vehicles & other construction, Material of construction will be stored under Tarpaulin cover.

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S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
5.4	Emissions from construction activities including plant and equipment	Yes	This will be restricted to the construction phase and to the construction site only. Dust & emissions are likely to be generated during construction activities which shall be reduced by sprinkling of water in a specific time interval & timely maintenance schedule for machinery. Also, the machines shall be shut down during idle period.
5.5	Dust or odors from handling of materials including construction materials, sewage and waste	Yes	Dust, which will be generated during construction, will be water sprinkled. Tarpaulin cover will be provided on stored raw material to reduce the dust emission. Mobile Toilets during construction phase shall be provided
5.6	Emissions from incineration of waste	No	Not applicable
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	Open burning of biomass/ other material will be avoided.
5.8	Emissions from any other sources	No	Not applicable

6. Generation of Noise and Vibration, and Emissions of Light and Heat

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Source of noise in the operational phase will be from backup DG sets (which will be in operation only during power failure) and pumps & motors. All the machinery will be of highest standard of reputed make and will comply with national/ international standards that take care of air and noise pollution control/ vibration control. Therefore, no significant impact due to operation of machinery is anticipated.

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S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
6.2	From industrial or similar processes	No	Not applicable
6.3	From construction or demolition	Yes	Due to various construction activities, there will be short-term noise impacts in the immediate vicinity of the project site. The construction activities will include the following noise generating activities: <ul style="list-style-type: none"> • Concreting, mixing & operation of DG sets • Movement of heavy machines & vehicles
6.4	From blasting or piling	No	No blasting or mechanized piling will be used in the construction phase.
6.5	From construction or operational traffic	Yes	Some noise will be generated from vehicular movement in the construction and operational phase.
6.6	From lighting or cooling systems	Yes	Cooling towers will be noise efficient & of latest technology.
6.7	From any other sources	No	Not applicable.

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S. No.	Information/ Checklist confirmation	Yes / No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	The only hazardous wastes in the project will be used/ spent oil from backup DG sets. The spent oil will be carefully stored in HDPE drums under isolated storage and periodically sold to authorized recyclers. All precautions will be taken to avoid spillage from storage.

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S. No.	Information/ Checklist confirmation	Yes / No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	During operational phase STP of capacity 2200 KLD will be installed for treating the waste water. There will be no discharge of untreated sewage on water or land, as entire wastewater after treatment will be reused for cooling, toilet flushing and horticulture. Hence no adverse effect is envisaged.
7.3	By deposition of pollutants emitted to air into the land or into water	No	There will be no deposition of pollutants in to air and water
7.4	From any other sources	No	Not applicable.
7.5	Is there a risk of long term built up of pollutants in the environment from these sources?	No	Not applicable.

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment

S. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc. from storage, handling, use or production of hazardous substances	No	This is a construction project and does not involve major hazardous construction activity. No industrial or process activity is involved in this project. Hence, chances of explosions, spillages, fires are minimal. During construction, all construction workers will be provided with personal protective equipment (PPE) by the contractors as required under the health & safety norms. Training and awareness

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			about the safety norms will be provided to all involved in construction activities. Suitable fire-fighting measures will be provided.
8.2	From any other causes	No	Not applicable.
8.3	Could the project be affected by natural disasters causing environmental damage (e.g floods, earthquakes landslides, cloudburst etc)?	Yes	The study area falls in Zone-IV, as per the Indian Standard Seismic Zoning Map. Suitable seismic consideration will be adopted while designing the structures to mitigate the seismic impacts as per NBC/IS Code. There are no chances of floods and landslide.

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S. No.	Information / Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
9.1	Lead to development of supporting, facilities, ancillary development stimulated by the project which could have impact on the environment e.g.:	Yes	The proposed project will lead to development of the area by providing employment of the local people during construction and operation phase.
	• Supporting infrastructure (roads, power supply, waste or waste water treatment etc.)		The project will have positive impact on the ancillary infrastructure like roads, markets, public health, amenities, and communication facilities in the area. STP of capacity 2200 KLD will be installed.
	• Housing development	No	Not applicable
	• Extractive industries	No	Not applicable
	• Supply industries	No	Not applicable
	• Other	No	Not applicable
9.2	Lead to after-use of the site, which could have an impact on the environment	No	Not applicable
9.3	Set a precedent for late developments	No	Not applicable

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S. No.	Information / Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	Not applicable

(III) Environmental Sensitivity

S. No.	Areas	Name/ Identity	Aerial distance (within 15 km) from proposed project location boundary
1.	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	Not located within 15 km of the proposed project location.
2	Areas which are important or sensitive for ecological reasons- Wetlands, water courses or other water bodies, coastal zone, biospheres, mountains, forests.	No	Not located within 15 km of the proposed project location.

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S. No.	Areas	Name/ Identity	Aerial distance (within 15 km) from proposed project location boundary
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	Not located within 15 km of the proposed project location.
4	Inland, coastal, marine or underground waters	No	Not located within 15 km of the proposed project location.
5	State, National boundaries	Delhi State boundary	Approx.600 m North of project site.
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	NH-8	NH8 is adjacent on west side of project.
7	Defence installations	Yes	Arjangarh Air Force Station: 3.6 km SE Ammunition Depot: 4.8 km SW
8	Densely populated or built-up area	Yes	The project site is located in Gurgaon city. The site is surrounded by moderately populated built-up area comprising of office, residential and shopping mall.
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	St. Stephen's Hospital, Shri Ram School	There are number of major hospitals, schools and numerous places of worship and community facilities within 15 km. The nearest places are: St.Stephen's Hospital: 2.1 km in SE Shri Ram School: 0.9 km in E Ambience Mall: 0.05 km N
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Yes	Groundwater resources in Gurgaon are depleting at very fast rate and are declared as scare resource.

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S. No.	Areas	Name/ Identity	Aerial distance (within 15 km) from proposed project location boundary
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	No	Not located within 15 km of the proposed project location.
12	Areas susceptible to natural hazard which could cause the project to present environmental problems earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	Yes	The area under study falls in Zone-IV, according to the Indian Standard Seismic Zoning Map. Suitable seismic coefficients will be adopted as per NBC/ IS Code while designing the structures to mitigate the seismic impacts.

(IV) Proposed Terms of Reference for EIA studies

Proposed Terms of Reference (TOR) for EIA study is enclosed.

I hereby given undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any to the project will be revoked at our risk and cost.

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Date: 28.02.2018

Signature

:

Place: Gurgaon

Name: Giri Raj Shah

(Authorized Signatory)

Address: Gateway Tower (2nd Floor), DLF City,
Phase-III, Gurgaon-122002

Signature of the Applicant with Name and Full Address

(Project Proponent/Authorized Signatory)

Project Proponent:

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Environment Consultant:

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APPENDIX II

(See paragraph 6)

FORM-1 A

(Only for construction projects listed under item 8 of the Schedule)

CHECK LIST OF ENVIRONMENTAL IMPACTS

(Project proponents are required to provide full information and wherever necessary attach explanatory notes with the Form and submit along with proposed Environmental Management Plan & Monitoring Programme).

S. No.	Item	Details
1.	LAND ENVIRONMENT (Attach panoramic view of the project site and the vicinity)	
	Will the existing land use get significantly altered from the project that is not consistent with the surroundings? (Proposed land use must confirm to the approved Master Plan/ Development Plan of the area. Change of land use if any and the statutory approval from the competent authority are submitted). Attach Maps of	<p><u>Location of the Project Site</u></p> <p>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.</p> <p>The licenses of the project are enclosed as additional documents. 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).</p> <p><u>Proposed Landuse:</u></p> <p>The project site is earmarked for commercial development as per the master plan of Gurgaon-Manesar (Shown in Figure3 in EIA report) and as per the approved local development plan/ zoning plan.</p>
	(i) site location,	Map showing the project location and the project vicinity is shown in Figure 1 in EIA report.

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S. No.	Item	Details																												
	(ii) surrounding features of the proposed site (within 500 meters) and	<p>The project site & 10 km surrounding area is covered by Survey of India toposheet no. H43X2 and H43X3. Key plan showing location of the project site is given in Figure 2 in EIA report.</p> <p><u>Features of the Project Site:</u></p> <p>The project site is vacant land. The terrain of the project site and its surrounding area is plain. The site is devoid of any rocky outcrops and is not covered by any notified forests.</p> <p><u>Surrounding Features:</u></p> <p>Distances of nearest environmental sensitive areas are given in the Table below:</p> <table border="1"> <thead> <tr> <th>S.N</th> <th>Type of Area</th> <th>Name of Nearest Environmental Sensitive Area</th> <th>Distance & Direction from Project Site</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>National Park</td> <td>Sultanpur National Park</td> <td>20.4 km in W direction</td> </tr> <tr> <td>2.</td> <td>Wildlife Sanctuary</td> <td>Asola Wildlife Sanctuary</td> <td>15.6 km in E direction</td> </tr> <tr> <td>3.</td> <td>Eco-Sensitive Areas</td> <td>a) Rajokri Protected Forest b) Sanjay Van</td> <td>4.3 km in NE direction 9.0 km in NE direction</td> </tr> <tr> <td>4.</td> <td>Hospital</td> <td>a) St. Stephen's Hospital b) Neel kanth Hospital</td> <td>2.1 km in SE direction 2.4 km in SE direction</td> </tr> <tr> <td>5.</td> <td>School</td> <td>a) Tagore International School b) Shri Ram School</td> <td>0.9 km in SE direction 0.9 km in E direction</td> </tr> <tr> <td>6.</td> <td>Community Facilities</td> <td>a) Ambience Mall b) Club at DLF Phase-III</td> <td>0.05 km in N direction 1.0 km in E direction</td> </tr> </tbody> </table> <p>The map and Google image showing location of the project site and the area surrounding 500 m of the project site are is shown in Figure 4 of EIA Report.</p> <p><u>Adjacent Features w.r.t the Project Site</u></p>	S.N	Type of Area	Name of Nearest Environmental Sensitive Area	Distance & Direction from Project Site	1.	National Park	Sultanpur National Park	20.4 km in W direction	2.	Wildlife Sanctuary	Asola Wildlife Sanctuary	15.6 km in E direction	3.	Eco-Sensitive Areas	a) Rajokri Protected Forest b) Sanjay Van	4.3 km in NE direction 9.0 km in NE direction	4.	Hospital	a) St. Stephen's Hospital b) Neel kanth Hospital	2.1 km in SE direction 2.4 km in SE direction	5.	School	a) Tagore International School b) Shri Ram School	0.9 km in SE direction 0.9 km in E direction	6.	Community Facilities	a) Ambience Mall b) Club at DLF Phase-III	0.05 km in N direction 1.0 km in E direction
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S. No.	Item	Details											
		S.N	Feature	Distance from Project Site	Direction w.r.t. Project Site								
		1.	DLF City Phase III Others plots & buildings	Adjacent	East								
		2.	National Highway (NH8)	Adjacent	West								
		3.	Ambience Mall	Adjacent	North								
		4.	Moulsari Avenue and metro Station	Adjacent	South								
		<p><u>Connectivity to the Project Site:</u></p> <p>The project has access through the service road of NH8 and Moulsari Avenue. The project site is well connected to network of roads leading to various parts of NCR.</p>											
	(iii) the site (indicating levels & contours) to appropriate scales. If not available attach only conceptual plans.	<p>The project area possesses flat terrain.</p> <p>Project Conceptual Plan is enclosed along with Form1, Form1A and EIA report.</p>											
1.2	<p>List out all the major project requirements in terms of the land area, built up area, water consumption, power requirement, connectivity, community facilities, parking needs etc.</p>	<p>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. We now wish to develop the said project and accordingly submitting our application for the Environmental Clearance with revised plan and built-up area.</p> <p>Salient Features of the Project</p> <table border="1"> <thead> <tr> <th>Items</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Project name</td> <td>Shopping/ Commercial Building on 32.36 acres Site (Mall of India) in Block-V, DLF City Phase-III, Sector-25A, Gurgaon</td> </tr> <tr> <td>Location</td> <td>Block-V, DLF City Phase-III, Sector-25A, Gurgaon (Haryana)</td> </tr> <tr> <td>Type of project</td> <td>Shopping/ Commercial Building</td> </tr> </tbody> </table>				Items	Details	Project name	Shopping/ Commercial Building on 32.36 acres Site (Mall of India) in Block-V, DLF City Phase-III, Sector-25A, Gurgaon	Location	Block-V, DLF City Phase-III, Sector-25A, Gurgaon (Haryana)	Type of project	Shopping/ Commercial Building
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Type of project	Shopping/ Commercial Building												

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S. No.	Item	Details	
		Plot area	130,956.066 m ² (32.36 acres)
		Built up area	1057,114.09 m ² (including basements & other built up area)
		Ground coverage	62,262.72 m ² (47.54%). Permissible: 65,478.03 m ² (50%)
		Floor area	458,200.53 m ² (349.88%). Permissible: 458,346.23 m ² (350%)
		Basement & other built-up area	Area of basement: 511,505.27 m ² , Other built-up area: 87,408.29 m ²
		Number of floors & basements	Max: LG+UG +8 Floors + 5 level basements
		Maximum Building height	43.1 m (terrace of topmost livable floor)
		Area utilization	Lower & upper ground floor and 1 st to 5 th floors: Retail 6 th floor to 8 floor: Office; Basements: parking & services
		Parking facilities	Total 10,522 ECS (Surface Nil + Basement: 10,522)
		Power requirement & source	28,310 kW from grid supply (demand load)
		Power backup	100% Back-up DG sets of total capacity 40,000 kVA (20 x 2000 kVA) which is equivalent to 28,800 kW with 90% loading
		Water requirement & source	Fresh water requirement : 1510.3 KLD (from Municipal supply) Recycled treated effluent : 1773.5 KLD (from on-site STP) Total water requirement : 3283.8 KLD

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S. No.	Item	Details																
		Sewage generation, treatment & disposal	Sewage generation: 1866.8 kld Sewage treatment facility : STP of 2200 KLD capacity Sewage Discharge : Zero discharge, 100% recycle of treated sewage															
		Solid wastes generation	Total 9,322 kg/day (Biodegradable: 3,729 + Non-biodegradable: 5,593)															
		Rain water harvesting pits	28 nos. RWH pits with single bore well															
		Green area	Total green area = 32,754.438 m ² (25.01% of available plot area)															
		Estimated population	Total: 93,675 persons (Worker/staff : 14,832, Visiting : 78,843)															
		Estimated project cost	Rs. 4,551 Crores															
		<p>Details of Floor Area and Ground Coverage</p> <p>Plot area for FAR and ground coverage calculation = 130,956.066 m² (32.36 acres)</p> <table border="1"> <thead> <tr> <th>Particulars</th> <th>Permissible</th> <th>Proposed</th> </tr> </thead> <tbody> <tr> <td>a) Floor area (sq. m)</td> <td>458,346.23</td> <td>458,200.53</td> </tr> <tr> <td>b) FAR (Ratio)</td> <td>3.5</td> <td>3.498</td> </tr> <tr> <td>c) Ground coverage (sq.m)</td> <td>65,478.03</td> <td>62,262.72</td> </tr> <tr> <td>d) Ground coverage (%)</td> <td>50%</td> <td>47.54%</td> </tr> </tbody> </table> <p>The master site layout plan of the project showing plot boundary, location of various building blocks, internal & external roads and other features is provided in Conceptual Plan.</p>		Particulars	Permissible	Proposed	a) Floor area (sq. m)	458,346.23	458,200.53	b) FAR (Ratio)	3.5	3.498	c) Ground coverage (sq.m)	65,478.03	62,262.72	d) Ground coverage (%)	50%	47.54%
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1.3	What are the likely impacts of the proposed activity on the existing facilities adjacent to the proposed site? (Such as	The proposed site is a vacant land with negligible vegetation in the form of scanty bushes; but been excavated after obtaining EC. The building will be constructed as per Gurgaon Master Plan and as per the																

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S. No.	Item	Details
	open spaces, community facilities details of the existing land-use, disturbance to the local ecology)	defined building by-laws. The area adjacent to the project is already developed as evident from the Google image. The project activities will be confined in the site only and the likely impacts on surrounding land-use will be negligible. Instead, the development of proposed commercial project in this area will increase office space, employment opportunities and development activities. The project being a well-planned activity will result in organized open spaces and green areas. The biodiversity in the area will increase due to the proposed green areas. The project will have an overall positive impact on the existing land use and will not cause any disturbance to the local ecology. Proposed activity shall have no impact on surroundings.
1.4	Will there be any significant land disturbance resulting in erosion, subsidence & instability?(Details of soil type, slope analysis, vulnerability to subsidence, seismicity etc may be given).	<p>The proposed activity will not affect any significant land disturbance resulting in soil erosion, subsidence and instability. The area is not susceptible to erosion.</p> <p><u>Soil Type:</u></p> <p>In order to get the physico-chemical characteristics of soil of the project area, soil analysis will be carried out and the detailed environmental monitoring report containing analysis results of soil, water, air and noise will be submitted along with the EIA report.</p> <p>Gurgaon region is occupied by quaternary alluvium and precambrian meta-sediments of Delhi System. Delhi super group is represented by Alwar quartzite, and pegmatite intrusive of the Alwar series and slates of phyllites and quartzite of the sub-recent alluvium and sand dunes. The soils in the region are sand to loamy sand in sandy plain areas; sandy loam to clay loam/ silty clay loam in alluvial plains; loam sand to loam, calcareous in salt affected plains; silty loam to loam in low lands and loamy sand to loam, calcareous in hills. Taxonomically these soils may be classified as Typic Ustipsamments, Typic Ustorthents, Typic/ Udic/Aquic Ustochrepts, Typic Haplaquepts and skeletal/ Lithic Ustorthents</p> <p><u>Slope Analysis:</u></p>

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S. No.	Item	Details
		<p>The project area possesses flat terrain.</p> <p><u>Erosion/ Subsidence:</u></p> <p>The proposed activity will not result in any significant land disturbance causing soil erosion, subsidence and instability. The area is not susceptible to erosion. There was no existing buildings or structures at the site, so no demolition work was required. Land/soil environment may be temporarily affected due to activities like site preparation, excavation, material handling & storage etc. during construction phase. Proper drainage system will be provided to deal with the storm water in case of rain. Proper greening & paving at completion of the project will resist soil erosion.</p> <p><u>Seismicity:</u></p> <p>The area under study falls in Zone-IV (according to the Indian Standard Seismic Zoning Map), which is of high seismic risk. Therefore, suitable design will be made to mitigate the seismic impacts.</p> <div style="text-align: center;"> <p>Project site at Gurugram lies</p> </div> <p style="text-align: right;">Source: BIS 2002</p>
1.5	<p>Will the proposal involve alteration of natural drainage systems? (Give details on a contour map showing the</p>	<p>There is no natural watercourse passing through the project site. Hence the proposal does not involve alteration of natural drainage systems. The surroundings comprise an urbanized stretch and well-planned storm water drainage has been designed for internal storm water drainage. In operation phase, proper rain water</p>

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S. No.	Item	Details																								
	natural drainage near the proposed project site)	drainage facility will be provided and the run-off generated will be used for recharging the groundwater level. Thus, no impact on the natural drainage system is anticipated.																								
1.6	What are the quantities of earth work involved in the construction activity-cutting, filling, reclamation etc. (Give details of the quantities of earth work involved, transport of fill materials from outside the site etc?)	The top soil is stored at DLF off site with adequate protection and will be reused for horticulture purpose at site. The excavated soil was used for backfilling and leveling of DLF other project sites and development of road embankments. The topsoil is preserved separately with adequate protection and will be reused for landscaping purpose. Waste construction materials and debris will be recycled and excess will be disposed at MCG designated dumping site through authorized vendor.																								
1.7	Give details regarding water supply, waste handling etc during the construction period.	<p>During construction stage, the requirement and source of various types of water at construction site is given below. No ground water at the site will be used for the construction.</p> <p><u>Details Regarding Water Supply in Construction Period</u></p> <table border="1"> <thead> <tr> <th>SN</th> <th>Water Use</th> <th>Quantity (kld)</th> <th>Water Source and Mode of Supply</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Drinking at construction site for 2000 workers</td> <td>50</td> <td>HUDA water through authorised tanker</td> </tr> <tr> <td>2</td> <td>Construction (Mixing concrete) and sanitation of workers</td> <td>110</td> <td>HUDA canal water from Water Treatment Plant through authorised tanker</td> </tr> <tr> <td>3</td> <td>Sprinkling for dust suppression at construction site</td> <td>20</td> <td>Treated water from HUDA STP through authorised tanker</td> </tr> </tbody> </table> <p>The details of collection, recycle and disposal of solid wastes during construction stage will be as per the following:</p> <p><u>Details Regarding Waste Disposal in Construction Period</u></p> <table border="1"> <thead> <tr> <th>SN</th> <th>Nature & Source of Waste</th> <th>Disposal Site</th> <th>Mode of Disposal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Municipal solid wastes (waste foods, papers, packets, plastics at construction site)</td> <td>HUDA designated site/ Treatment Plant in Gurgaon</td> <td>Through vendor authorised by MCG</td> </tr> </tbody> </table>	SN	Water Use	Quantity (kld)	Water Source and Mode of Supply	1	Drinking at construction site for 2000 workers	50	HUDA water through authorised tanker	2	Construction (Mixing concrete) and sanitation of workers	110	HUDA canal water from Water Treatment Plant through authorised tanker	3	Sprinkling for dust suppression at construction site	20	Treated water from HUDA STP through authorised tanker	SN	Nature & Source of Waste	Disposal Site	Mode of Disposal	1	Municipal solid wastes (waste foods, papers, packets, plastics at construction site)	HUDA designated site/ Treatment Plant in Gurgaon	Through vendor authorised by MCG
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S. No.	Item	Details			
		2	Construction and demolition wastes at construction site	Municipal Corporation of Gurgaon (MCG) designated site	Through authorised vendor by covered trucks
		3	Sewage from mobile toilets at construction site	HUDA STP at Gurgaon	Through authorized tanker
		<p>During construction phase, about 200 kg of municipal solid waste will be generated which will be disposed to MCG designated site through authorized vendor. During construction phase, about 40 kld sewage will be generated which will be collected in a sump and finally disposed regularly to HUDA STP through vendors.</p> <p>Conclusively, it can be stated that impacts may be confined to small area (mainly to project site) and for short duration. Proposed mitigation plan suggests maximum reuse of construction waste on site, removal of non-reusable waste from the site and its proper disposal, which would reduce the impact significantly.</p>			
1.8	Will the low lying areas & wetlands get altered? (Provide details of how low lying and wetlands are getting modified from the proposed activity).	There are no wetlands or low-lying area present in and around the project site. So, there will be no impact.			
1.9	Whether construction debris & waste during construction cause health hazard? (Give quantities of various types of wastes generated during construction including the construction labour and the means of disposal).	<p>During the construction phase, there will be no waste generated which can cause health hazard. Construction debris will be collected and stored at earmarked place for reuse and disposal at MCG designated dumping site through authorized vendors. Municipal solid wastes generated at the construction site will be disposed into HUDA designated site at Bandwari through authorized vendors.</p> <p>No labour camp will be built at the site; however on-site toilets and other sanitation facilities will be provided for construction workers. Sewage from the construction site will be disposed into HUDA STP through tankers.</p>			
2.	WATER ENVIRONMENT				

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S. No.	Item	Details						
2.1	Give the total quantity of water requirement for the proposed project with the breakup of requirements for various uses. How will the water requirement met? State the sources & quantities and furnish a water balance statement.	<p>In operation stage, total water requirement for the project will be 3283.8 kld. The details of water requirement and its breakup, source of water and water balance are given in Table below. Out of the total water requirement, 1510.3 kld (45.9%) will be fresh water met from the Municipal/HUDA Supply, and the balance 1773.5 kld (55.5%) will be met from recycle of treated sewage from the on-site STP. No groundwater will be used.</p> <p>The sewage generated during the operation phase (1866.8 kld) will be treated up to the tertiary level in the proposed on-site Sewage Treatment Plant (STP) of 2200 kld capacity. The entire (100%) treated sewage will be recycled/ reused for cooling, toilet flushing and horticulture in the project site. Therefore, during normal operations, there will be zero discharge. The water balance diagram is depicted below.</p>						
Water Requirement during Operation								
S.N	Purpose	Population	Unit Demand (lpcd)			Domestic Water Demand (KLD)		Total Water Demand (kld)
			Dom	Flu	Total	Domestic	Flushing	
1	Domestic demand							
	a) Mall Staff	8,658	25	20	45	216.5	173.2	389.7
	b) Office occupants	6,174	25	20	45	154.4	123.5	277.9
	c) Mall Visitors	77,917	5	10	15	389.6	779.2	1168.8
	d) Office Visitors	926	5	10	15	4.6	9.3	13.9
	e) Subtotal (domestic)	93,675				765.1	1085.2	1850.3
2	Filter backwash	-			L.S.			93.0
3	HVAC & cooling				L.S.			1144.0
4	Horticulture	-			L.S.			196.5
	Total water requirement	-			-			3283.8
Note: Population projection has been done as per criteria given in NBC 2016								

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S. No.	Item	Details																
		<p>Water Source</p> <table border="1"> <thead> <tr> <th>S.N</th> <th>Source</th> <th>Quantity (kld)</th> <th>% of Total Requirement</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Fresh water from municipal supply</td> <td>1510.3</td> <td>45.9%</td> </tr> <tr> <td>2</td> <td>Recycle of treated effluent from STP</td> <td>1773.5</td> <td>44.1%</td> </tr> <tr> <td></td> <td>Total water source</td> <td>3283.8</td> <td>100.0%</td> </tr> </tbody> </table>	S.N	Source	Quantity (kld)	% of Total Requirement	1	Fresh water from municipal supply	1510.3	45.9%	2	Recycle of treated effluent from STP	1773.5	44.1%		Total water source	3283.8	100.0%
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		<p>Water balance</p> <pre> graph TD TRQ[Total Water Requirement 3193.2 KLD] --> FW[Fresh Water 1419.7 KLD] TRQ --> TRU[Treated Water Re Used 1773.5 KLD] FW --> F1[Flushing 561.6 KLD] FW --> F2[Filter Backwash 93 KLD] FW --> F3[Domestic 765.1 KLD] TRU --> TRU1[Flushing 523.6 KLD] TRU --> TRU2[Gardening 105.9 KLD] TRU --> TRU3[Cooling Tower 1144.0 KLD] F1 --> W1[Waste water 561.6] F2 --> W2[Waste Water 93 KLD] F3 --> W3[Waste water 688.6 KLD] TRU1 --> W4[Waste Water 523.6 KLD] TRU2 --> W5[Waste Water NIL] TRU3 --> W6[Waste Water NIL] W1 --> TWWT[Total Waste Water 1866.8 KLD] W2 --> TWWT W3 --> TWWT W4 --> TWWT TWWT --> STP[STP 2200 KLD Proposed] STP --> TRU TRU --> R[Reuse 1773.5 KLD] R --> TRU </pre>																
2.2	What is the capacity (dependable flow or yield) of the proposed source of water?	The main source of fresh water will be municipal water supply (from HUDA) and it is dependable. The total water requirement of the project will be 3283.8 kld. The fresh water requirement will be 1510.3 kld and recycled treated effluent requirement will be 1773.5 kld which will be available from the on-site STP.																
2.3	What is the quality of water required, in case; the supply is not from a municipal source? (Provide physical, chemical, biological characteristics with class of water quality)	The source of water is municipal/ HUDA supply and the quality will be potable water. Necessary filtration and other treatments will be made in the on-site Water Treatment Plant (WTP) to make it fit for drinking water as per drinking water quality requirements.																

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S. No.	Item	Details																				
2.4	How much of the water requirement can be met from the recycling of treated wastewater? (Give the details of quantities, sources and usage).	Out of 3283.8 kld of total water requirement, 1773.5 kld (about 49.1%) will be met from the recycling of treated sewage. The entire (100%) treated sewage generated from the project will be recycled/ reused. Out of the total 1773.5 kld reuse of treated sewage, 491.8 kld will be used for HVAC & cooling system, 1085.2 kld for toilet flushing and 196.5 kld for horticulture in the project site. During normal operations, there will be zero discharge, as the entire (100%) treated sewage will be reused and recycled for cooling, horticulture and toilet flushing.																				
2.5	Will there be diversion of water from other users? (Please assess the impacts of the project on other existing uses and quantities of consumption).	No, there will not be any diversion of water from other users. Rise in water demand is a local phenomenon but the project would have limited regional impact on water reserves.																				
2.6	What is the incremental pollution load from wastewater generated from the proposed activity? (Give details of the quantities and composition of wastewater generated from the proposed activity).	The sewage generated from the project during the operation phase is 1866.8 kld, which will be treated up to the tertiary level in the on-site Sewage Treatment Plant (STP). The treated sewage generated from the project will be recycled/ reused for HVAC& cooling, toilet flushing and horticulture in the project site. During normal operations, there will be zero discharge, as the entire (100%) treated sewage will be recycled. The sewage will be domestic sewage.																				
2.7	Give details of the water requirements met from water harvesting? Furnish details of the facilities created.	<p>Storm water will be conserved. The rainwater collected from the rooftop and other paved areas within the project area will be conveyed into the rainwater harvesting system consisting of Oil & grease separator, Desilting-cum-filter chamber and Recharge pit with bore well for recharge into the groundwater. Rainwater harvesting plan will be as per the manual issued by the GOI. Details of rainwater harvesting calculation are given below:</p> <p>Rain Water Harvesting Calculation</p> <table border="1"> <thead> <tr> <th>Type of Catchment Area</th> <th>Area (m²)</th> <th>Runoff Coefficient t (C)</th> <th>Rainfall Intensity (I) (mm/h)</th> <th>Runoff (Q=CIA) (m³/h)</th> </tr> </thead> <tbody> <tr> <td>Roof/Terrace area</td> <td>62262.72</td> <td>0.9</td> <td>45</td> <td>2521.6</td> </tr> <tr> <td>Other Paved Area</td> <td>35938.912</td> <td>0.8</td> <td>45</td> <td>1293.8</td> </tr> <tr> <td>Unpaved area</td> <td>32754.438</td> <td>0.15</td> <td>45</td> <td>294.8</td> </tr> </tbody> </table>	Type of Catchment Area	Area (m ²)	Runoff Coefficient t (C)	Rainfall Intensity (I) (mm/h)	Runoff (Q=CIA) (m ³ /h)	Roof/Terrace area	62262.72	0.9	45	2521.6	Other Paved Area	35938.912	0.8	45	1293.8	Unpaved area	32754.438	0.15	45	294.8
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S. No.	Item	Details											
		Total Area under development	130956.07		4110.2								
		<table border="1"> <tr> <td>Volume of rainwater to be retained (m³) in 15 min</td> <td>1370.07</td> </tr> <tr> <td>Required volume of one pit (m³)</td> <td>49.14</td> </tr> <tr> <td>No. of pits – proposed</td> <td>28</td> </tr> <tr> <td>No. of recharge wells- proposed</td> <td>28</td> </tr> </table>				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	No. of recharge wells- proposed	28
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		<p>No. of recharge bores required = $130,956.066 \text{ m}^2$ built-up plot area/ $5,000 \text{ m}^2$ per bore = 26.2 No. of recharge bores proposed = 28 Therefore, 28 number of single-well rainwater harvest pits with total 28 number of recharge wells will be provided for recharge of groundwater. Depth of bore will be kept min 5 m above groundwater table.</p> <p><u>Pervious area:</u> Required pervious area as per MOEF norms = 20% of open area = $68,693.346 \text{ m}^2$ (open area) x 20%=$13,738.67 \text{ m}^2$ Pervious area provided = 32754.438 m^2</p> <p>The rainwater will be collected through piped drains and conveyed into rainwater harvesting system. All storm water drains have been designed for adequate size and slope such that there shall not be any flooding in the site. It shall be ensured that no wastewater shall enter into storm water drainage system</p>											
2.8	<p>What would be the impact of the land use changes occurring due to the proposed project on the runoff characteristics (quantitative as well as qualitative) of the area in the post construction phase on a long-term basis? Would it aggravate the problems of flooding or water logging in any way?</p>	<p>No adverse impacts are envisaged due to proposed project on the runoff characteristics of the area as adequate arrangements will be made to trap the rainwater and suitable storm water drainage system will be provided. During the post-construction phase, runoff from the project shall not be allowed to stand or enter into the roadside or nearby drain. Adequate measures will be taken to collect such run off and either will be reused or recharged through pits. Suitable garlanding drain as per the existing contours of the plot will be developed. No problem of flooding and water logging is envisaged as excess run-off will be drained to groundwater.</p>											

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S. No.	Item	Details
2.9	What are the impacts of the proposal on the ground water? (Will there be tapping of ground water; give the details of ground water table, recharging capacity, and approvals obtained from competent	Water demand will be met from public water supply. Water requirement will be reduced by recycling of treated sewage. Moreover, rainwater harvesting for recharge of groundwater aquifer will be done in the project. This will have beneficial impact on groundwater.
2.10	What precautions/measures are taken to prevent the run-off from construction activities polluting land & aquifers? (Give details of quantities and the measures taken to avoid the adverse impacts).	To prevent degradation and maintain the quality of the water source, adequate control measure has been proposed to check the surface run-off. Following management measures are suggested to protect the water quality during the construction phase: <ul style="list-style-type: none"> • Avoid excavation during monsoon season. • Care would be taken to avoid soil erosion. • Toilets will be constructed at site during construction phase for site office staff and the wastewater will be channelized to the collection sump in order to prevent wastewater from entering the water bodies. Besides, arrangements will be made for mobile toilets for construction workers. The sewage from the toilets of construction site will be collected in a sump and finally disposed regularly to HUDA STP through vendors. • To prevent surface and ground water contamination by oil/grease, leak proof containers would be used for storage and transportation of oil/grease. The floors of oil/ grease handling area will have dyke walls and would be kept effectively impervious. • Collection and settling of storm water, prohibition of equipment wash downs, and prevention of soil loss and toxic release from the construction site will be adhered to minimize water pollution.
2.1 1	How is the storm water from within the site managed? (State the provisions made to avoid flooding of the area, details of the drainage facilities provided along with a site layout indication contour levels).	Most of the storm water produced on site will be harvested for groundwater recharge. Thus proper management of this resource is a must to ensure that it is free of contamination. A detailed Storm Water Management Plan will be developed which will consider the sources of storm water. The plan will incorporate best management practices which will include the following: <ul style="list-style-type: none"> • Regular inspection and cleaning of storm drains.

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		<ul style="list-style-type: none"> • Installation of oil/water separators system of adequate capacity in RWH pits. • Cover waste storage areas. • Avoid application of pesticides and herbicides before wet season. • Conducting routine inspections to ensure cleanliness. • Preparation of spill response plans, particularly for fuel and oil storage areas. • Provision of silt traps in rain water harvesting system. • Good housekeeping in the above areas. • Rain water outlets will be provided in terrace for taking out rainwater. • The rainwater collected through pipes, channels and catch basins will be disposed off into rain water harvesting pits.
2.1 2	<p>Will the deployment of construction laborers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation).</p>	<p>There will be no labour camp at project site for construction labours. The labours will be housed at the labour camp to be provided by the contractor and are will be transported to construction site and back by vehicle to be arranged by the contractor. Rest shelters, toilets and drinking water will be provided to labourers at the project site. The sewage from the toilets of construction site will be collected in a sump and finally disposed regularly to HUDA STP through vendors.</p>

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S. No.	Item	Details										
2.1 3	What on-site facilities are provided for the collection, treatment & safe disposal of sewage? (Give details of the quantities of wastewater generation, treatment capacities with technology & facilities for recycling and disposal).	<p>The details of quantity of sewage and sewage collection, treatment, reuse and disposal in operation stage are given in the Table below.</p> <p>Sewage Quantity, Treatment, Reuse & Disposal</p> <table border="1"> <tr> <td>Quantity of sewage</td> <td>1866.8 kld</td> </tr> <tr> <td>Collection of sewage</td> <td>Sewage generated during the operation phase will be collected through underground sewerage system (pipe drain) for treatment in STP. Separate storm water drainage system will be provided for rain water.</td> </tr> <tr> <td>Treatment of sewage</td> <td>Sewage will be treated up to the tertiary level in the on-site Sewage Treatment Plant (2200 kld capacity) based on modern & efficient technology. All parameters of the STP treated effluent shall be maintained as per latest EP Rules, 1986/ CPCB standards.</td> </tr> <tr> <td>Reuse/recycle and Disposal of treated sewage</td> <td>During normal operations, there will be zero discharge, as the entire (100%) treated sewage will be reused and recycled for cooling, horticulture and toilet flushing</td> </tr> <tr> <td>Location of the STP</td> <td>Basement/ Underground within project site</td> </tr> </table>	Quantity of sewage	1866.8 kld	Collection of sewage	Sewage generated during the operation phase will be collected through underground sewerage system (pipe drain) for treatment in STP. Separate storm water drainage system will be provided for rain water.	Treatment of sewage	Sewage will be treated up to the tertiary level in the on-site Sewage Treatment Plant (2200 kld capacity) based on modern & efficient technology. All parameters of the STP treated effluent shall be maintained as per latest EP Rules, 1986/ CPCB standards.	Reuse/recycle and Disposal of treated sewage	During normal operations, there will be zero discharge, as the entire (100%) treated sewage will be reused and recycled for cooling, horticulture and toilet flushing	Location of the STP	Basement/ Underground within project site
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Location of the STP	Basement/ Underground within project site											
2.1 4	Give details of dual plumbing system if treated waste used is used for flushing of toilets or any other use.	<p>The entire (100%) treated effluent from STP will be reused for flushing, HVAC& cooling and for horticultural purposes.</p> <p><u>Dual pipe plumbing to save water:</u></p> <p>There will be a dual pipe plumbing system for using recycled treated sewage, which will save the consumption of fresh water. There will be two pipe lines, one supplying freshwater for drinking, wash basins & pantries and other for supply of recycled treated sewage for flushing, landscape irrigation and cooling.</p> <p><u>Water savings fixtures:</u></p> <p>a) Low flow flushing systems working on 3 & 6 litres/ flush instead of conventional 12.5 litres.</p> <p>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</p>										

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S. No.	Item	Details
		c) Sensor based fixtures will be used for urinals and taps in wash basins
3.	VEGETATION	
3.1	Is there any threat of the project to the biodiversity? (Give a description of the local ecosystem with its unique features, if any).	No threatened, rare, endangered or endemic species were observed during the survey in project site. No other reserve forest/ wildlife sanctuary is located within 15 km radius of the project boundary (as evident for the Key plan). The project site is part of the Gurgaon Development Area. There will not be any threat to biodiversity of the area due to proposed project. All the project activities during construction will be confined within the project site. Nearest eco-sensitive areas are Sultanpur National Park (approx 19.5 km south west) & Asola Wildlife Sanctuary (approx 15.6 km east) from the project site.
3.2	Will the construction involve extensive clearing or modification of vegetation? (Provide a detailed account of the trees & vegetation affected by the project).	The land for proposed project is a private land & will be used for the development of commercial project. There is no major vegetation within the project site; so, there will be no modification or clearing due to proposed project.
3.3	What are the measures proposed to be taken to minimize the likely impacts on important site features (Give details of proposal for tree plantation, landscaping, creation of water bodies etc. along with a layout plan to an appropriate scale?).	A combination of evergreen and ornamental flowering trees, palms, shrubs and ground covers, mostly indigenous/ local plants, will be planted along the sides of the roads and in open spaces & along the boundary wall within the complex under the landscape plan. Total green area will be 32,754.438 sq m (25.01% of plot area available within project boundary).
4.	FAUNA	
4.1	Is there likely to be any displacement of fauna- both terrestrial and aquatic or creation of barriers for their movement? Provide the details.	No threatened, rare, endangered or endemic faunal species were observed during the survey in core zone. No displacement of fauna is envisaged due to this project. The proposed site and its surrounding urban set up do not support any habitat for any group of wild animals except

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		a few small animals which are well adapted to urban areas.
4.2	Any direct or indirect impacts on the avifauna of the area? Provide details.	No direct or indirect impact on avifauna is envisaged. However, after commissioning of the project, better environmental conditions may provide a better habitat to the avifauna of the area.
4.3	Prescribe measures such as corridors, fish ladders etc. to mitigate adverse impacts on fauna.	Measures such as corridors, fish ladders are not applicable for this project.
5.	AIR ENVIRONMENT	
5.1	Will the project increase atmospheric concentration of gases & result in heat islands? (Give details of background air quality levels with predicted values based on dispersion models taking into account the increased traffic generation as a result of the proposed constructions).	<p><u>Background Air Quality</u></p> <p>For drawing up the baseline status of ambient air quality in the study area, ambient air quality monitoring in respect of PM₁₀, PM_{2.5}, SO₂, NO_x and CO has been conducted in the study area adopting a 24-hours schedule. The detailed environmental monitoring report containing analysis results of air is given in chapter 3 section 3.5 of EIA report</p> <p><u>Air Quality Modeling:</u></p> <p>The main source of emissions from the project is the operation of the backup generators during grid power failure. Detailed air quality modeling will be carried out for predicting the concentration of different pollutants contributed by the project during operation of the backup generators.</p> <p>There will be the provision of adequate stack height above ground level (30 m) as per the CPCB guidelines to dilute the effect of DG emissions.</p> <p>The marginal increase in traffic due to project is not going to cause any significant increase in atmospheric concentration of gases.</p> <p>Since the DG sets power backup and will be operated during power failure, vehicles will comply with latest emission norms and there will be large green area, effect</p>

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		of heat island will be negligible. The background air quality levels with predicted values based on dispersion models is given as Enclosure 5 of EIA Report.																	
5.2	What are the impacts on generation of dust, smoke, odorous fumes or other hazardous gases? Give details in relation to all the meteorological parameters.	<p>There will be burning of fuel through generator sets, traffic movements and operation of construction machines/equipment at site. Construction activities will lead to dust generation, emission of NO_x & SO_x.</p> <p>The impacts on the ambient air quality during construction phase will be temporarily and reversible in nature (for short duration) and will be restricted to only a small area. During operation phase, generator set will be having adequate stack height, there will be development of green area and maintenance of vehicles, all these efforts will reduce the impact.</p>																	
5.3	Will the proposal create shortage of parking space for vehicles? Furnish details of the present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry & exit to the project site.	<p><u>Proposed Parking Facilities:</u></p> <p>The project is proposed to have parking space of 10,522 ECS as against the mandatory requirement of 8,248 ECS. The details of parking facilities proposed within the complex are given in the Table below.</p> <p>Details of Parking Facilities</p> <table border="1"> <thead> <tr> <th rowspan="2">Level of Parking</th> <th colspan="2">No. of Car Parking (ECS)</th> <th rowspan="2">Parking Area (m²)</th> <th rowspan="2">Space Standard (m²/ECS)</th> </tr> <tr> <th>Proposed</th> <th>Required</th> </tr> </thead> <tbody> <tr> <td>Basements</td> <td>10,522</td> <td></td> <td>336,704</td> <td>32</td> </tr> <tr> <td>Total parking</td> <td>10,522</td> <td>8,248 (1 ECS/50 m² of carpet area)</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p>Additional parking provided = 10,522 ECS (proposed) – 8,248 ECS (required) = 2,274 ECS.</p> <p><u>Transport Infrastructure:</u></p> <p>The project has access through the Mousari Avenue. It is also accessible through the service road parallel to NH8. Project site is well connected to network of roads leading to various parts of NCR.</p> <p>Internal roads of optimum width will be provided for smooth and one-way movement of traffic. Separate entries and exits will be provided for segregation of the</p>	Level of Parking	No. of Car Parking (ECS)		Parking Area (m ²)	Space Standard (m ² /ECS)	Proposed	Required	Basements	10,522		336,704	32	Total parking	10,522	8,248 (1 ECS/50 m² of carpet area)	-	-
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		incoming and outgoing traffic. Adequate measures have been proposed to manage the traffic within and outside the site.
5.4	Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc., with areas under each category.	In the traffic circulation plan of the project, there will be proper entry and exit points for systematic control of the vehicular movement within the project. Wide internal road will be provided for the smooth traffic movement. The project has roads running on the periphery that will facilitate the movement of traffic. Internal roads, footpaths, ramps for basement with suitable width have also been provided. Adequate lighting arrangement will be provided covering all corners.
5.5	Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above.	<p>There will be a marginal increase in the ambient noise due to traffic movement within the project area. The traffic movement will be only in daytime during the construction phase. In operational phase, only workers and mall visitors to the proposed project will come and vehicular movement due to them only will be occurring. The pollution will be in very small quantity and it will be further minimized by plantation on the road sides and around the periphery of whole project.</p> <p>Proper internal road network has been designed as per the prevailing guidelines for smooth operation of traffic; impact on noise level due to the operational traffic will be negligible.</p>
5.6	What will be the impact of DG sets & other equipment on noise levels & vibration in & ambient air quality around the project site? Provide details.	<p>DG sets will be used for power back-up. So, DG sets will be the main source of air and noise pollution. Gaseous pollutants like NO₂, SO₂, CO, Particulates shall be generated from activities like burning of fuel through DG sets. HSD with low sulphur will be used. The DG sets will not be operational continuously and moreover these will be placed in suitable enclosures, hence no or minimal impact will be anticipated. Detailed impact on ai from DG sets is given in Air dispersion report given as Enclosure 5 of EIA Report</p> <p>During operation, vehicular movement and operation of DG sets are the major sources of noise pollution. But both these activities- DG sets and vehicular movement will not</p>

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		<p>have any significant impact on the people residing in the area.</p> <p><u>Mitigation Measures for Impacts of DG Sets on Noise Quality:</u></p> <ul style="list-style-type: none"> • All the DG sets will be as per the E(P) Rule and noise level from the DG sets will be as per the prevailing standards. • DG sets will be installed in the DG room to minimize the impact on ambient noise. • DG room will be provided with acoustic lining/ treatment to insure 25 dB (A) insertion loss as per the regulations. • Adequate exhaust mufflers will be provided as per norms to limit the noise. • The DG sets will be installed on anti-vibration pads. • The DG sets will be used during event of power failure only. <p><u>Impacts on Air Quality</u></p> <p>Impacts on ambient air quality during operation due to emissions from the stacks attached to standby DG sets would be very less. However suitable mitigation measures will be adopted.</p> <p><u>Mitigation Measures for Impacts of DG Sets on Ambient Air Quality:</u></p> <ul style="list-style-type: none"> • DG sets will be used only during power failure • DG sets will comply with the applicable emission norms. • Adequate stack height for DG sets will be provided as per CPCB norms. • During operation stage, monitoring of emissions from DG sets and ambient air quality will be carried out as per norms.
6.	AESTHETICS	

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6.1	Will the proposed constructions in any way result in the obstruction of a view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?	<p>As the proposed site is vacant land and does not have any scenic amenity or landscaping in its surroundings so there is no possibility of obstruction of above-mentioned conditions. Moreover, the approval of the architectural plan of the building has been taken from local development authority.</p> <p>The proposed project itself is planned with provisions of landscaping and green area development. This will surely enhance the aesthetic beauty of the area.</p>
6.2	Will there be any adverse impacts from new constructions on the existing structures? What are the considerations taken into account?	<p>In the project site, there will be entirely new construction and will not have any adverse impact on the existing structures. There is adequate space to provide landscaping; the view from the Sector road will be very attractive and pleasing with the form and appearance of the project.</p> <p>The development of the project area is as per the approved Master plan (2021 AD) of Gurgaon city. Hence, no adverse impacts are anticipated from new constructions on existing structures in this area.</p>
6.3	Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.	<p>There are no local considerations of urban forms & urban design influencing the design criteria. The proposed site falls under the area of approved final development plan of Gurgaon City (2021 AD). The proposed commercial project will be constructed within the designed site as per the defined building bye-laws of Haryana Urban Development Authority (HUDA).</p>
6.4	Are there any anthropological or archaeological sites or artifacts nearby? State if any other significant features in the vicinity of the proposed site have been considered	<p>There is not any anthropological or archaeological site or artifacts or any other significant features in the vicinity of the proposed site.</p>
7.	SOCIO-ECONOMIC ASPECTS	

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7.1	Will the proposal result in any changes to the demographic structure of local population? Provide the details.	<p>The proposed project will provide value addition to the existing infrastructure, as due to development of this project facility such as public transport, water supply, telex-communications, power lines, road maintenance etc. shall be upgraded in and around the project premises.</p> <p>The project is situated in the commercial zone and hence there will be no change in demographic structure. The details regarding the demographic structure of Gurgaon city is given in the table below:</p> <p>Demographic Details of District – Gurgaon (Haryana)</p> <table border="1"> <thead> <tr> <th>S.N.</th> <th>Particulars</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>State</td> <td>Haryana</td> </tr> <tr> <td>2</td> <td>District</td> <td>Gurgaon</td> </tr> <tr> <td rowspan="3">3</td> <td rowspan="3">Total population:</td> <td>Persons: 894900</td> </tr> <tr> <td>Male: 626430</td> </tr> <tr> <td>Female: 268470</td> </tr> <tr> <td>4</td> <td>Growth Rate (Total Pop) 2001-2011</td> <td>73.9</td> </tr> <tr> <td>5</td> <td>Sex Ratio</td> <td>847</td> </tr> <tr> <td>6</td> <td>Percent 0-6 pop</td> <td>13.1</td> </tr> <tr> <td>7</td> <td>Sex Ratio 0-6 pop</td> <td>826</td> </tr> <tr> <td>8</td> <td>Literacy Rate (Persons)</td> <td>87.49</td> </tr> <tr> <td>9</td> <td>Literacy Rate (Males)</td> <td>90.94</td> </tr> <tr> <td>10</td> <td>Literacy Rate (Females)</td> <td>83.40</td> </tr> </tbody> </table> <p>Source: Census Data of India, 2011.</p>	S.N.	Particulars	Details	1	State	Haryana	2	District	Gurgaon	3	Total population:	Persons: 894900	Male: 626430	Female: 268470	4	Growth Rate (Total Pop) 2001-2011	73.9	5	Sex Ratio	847	6	Percent 0-6 pop	13.1	7	Sex Ratio 0-6 pop	826	8	Literacy Rate (Persons)	87.49	9	Literacy Rate (Males)	90.94	10	Literacy Rate (Females)	83.40
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7.2	Give details of the existing social infrastructure around the proposed project.	The project site is located in the development area under the Master Plan of Gurgaon. The ancillary infrastructure like roads, markets, public health, amenities, conveyance facilities already exist in the project influenced area.																																			
7.3	Will the project cause adverse effects on local communities,	The proposed project will be constructed within the designated site as per the defined building bye-laws of																																			

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	disturbance to sacred sites or other cultural values? What are the safeguards proposed?	Haryana Urban Development Authority (HUDA), and Department of Town & Country Planning, Chandigarh, Haryana. There is no sacred site or cultural heritage site in nearby vicinity of proposed project. Hence no adverse impacts are envisaged. So, the proposed project will not cause any adverse effects on local communities or disturbance to sacred sites or other cultural values.
8.	BUILDING MATERIALS	
8.1	May involve the use of building materials with high-embodied energy. Are the construction materials produced with energy efficient processes? (Give details of energy conservation measures in the selection of building materials and their energy efficiency)	<p>Though most of the construction materials to be used are conventional, energy efficient building materials, if available locally, will be used as specified in the Energy Conservation Building Code. The major materials required for construction of the proposed project will be steel, cement, bricks, metal, flooring tiles/ stones, sanitary and hardware items, electrical fittings, water, etc.</p> <p>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.</p> <ul style="list-style-type: none"> • 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

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		<ul style="list-style-type: none"> Finished concrete flooring, ceiling tiles, ceramic tiles etc. which are made from low embodied energy products & recycled materials or from resource efficient finishes 								
8.2	Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?	<p>During the construction phase the air quality will have adverse impact. Construction activities especially related to handling of loose material likely to cause generation of fugitive dust that adversely impacts the air quality of the surrounding area of the project site. To minimize the impact, loose material will be either stacked or transported with proper covering.</p> <p>During construction phase the expected noise levels will be as per specified limits. Administrative as well as engineering control of noise will be implemented.</p>								
8.3	Are recycled materials used in roads and structures? State the extent of savings achieved?	<p>Waste from construction like excavated earth, iron rods etc. will be recycled and reused as far as possible.</p>								
8.4	Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.	<p>The details of collection recycle and disposal of solid wastes during operation stage are given in the Table below.</p> <p>Solid Wastes Collection, Recycle & Disposal</p> <table border="1"> <tbody> <tr> <td>Quantity</td> <td>Total 9,322 kg/day (Biodegradable: 3,729 + Non-biodegradable: 5,593)</td> </tr> <tr> <td>Nature</td> <td>Biodegradable: Waste vegetables and foods Non-biodegradable: Papers, cartons, thermocol, plastics, glass etc.</td> </tr> <tr> <td>Collection and disposal</td> <td>Solid wastes generated will be segregated into biodegradable and non-biodegradable components and collected in separate bins. The biodegradable wastes will be composted in an on-site composting unit and the manure will be used for landscaping. The non-biodegradable/ recyclable wastes will be disposed at MCG designated site through authorized vendors. Dewatered/ dried sludge from STP will be used as manure in horticulture.</td> </tr> <tr> <td>Recycling</td> <td>Recyclable wastes comprising paper, plastic, glass etc., will be disposed at HUDA designated site through to authorized vendors.</td> </tr> </tbody> </table>	Quantity	Total 9,322 kg/day (Biodegradable: 3,729 + Non-biodegradable: 5,593)	Nature	Biodegradable: Waste vegetables and foods Non-biodegradable: Papers, cartons, thermocol, plastics, glass etc.	Collection and disposal	Solid wastes generated will be segregated into biodegradable and non-biodegradable components and collected in separate bins. The biodegradable wastes will be composted in an on-site composting unit and the manure will be used for landscaping. The non-biodegradable/ recyclable wastes will be disposed at MCG designated site through authorized vendors. Dewatered/ dried sludge from STP will be used as manure in horticulture.	Recycling	Recyclable wastes comprising paper, plastic, glass etc., will be disposed at HUDA designated site through to authorized vendors.
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S. No.	Item	Details											
Municipal Solid Waste Generation													
S. No.	Source	Population	gram/capita/ day	% of Bio-degradable Waste	Bio-degradable Waste (kg/day)	Recyclable Waste (kg/day)	Total Waste (kg/day)						
1	Mall Staff	8,658	100	40%	346.3	519.5	865.8						
2	Office occupants	6,174	100	40%	247.0	370.4	617.4						
3	Mall Visitors	77,917	100	40%	3116.7	4675.0	7791.7						
4	Office Visitors	926	50	40%	18.5	27.8	46.3						
	Total	93,675			3728.5 kg/day	5592.7 kg/day	9321.2 kg/day						
9.	ENERGY CONSERVATION												
9.1	<p>Give details of the power requirements, source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up area? How have you tried to minimize energy consumption?</p>		<p>In construction phase DG set of 1x180 kVA and 1x750 kVA will be operated and ultra-low sulphur diesel will be used as fuel for DG sets.</p> <p>The details of power requirement, source, backup power arrangement (i.e. generators) during operation phase are given in the Table below.</p> <p>The energy consumption consumed per square foot of the of built up area will be 0.00248 KW/ square foot.</p> <p>Energy conservation measures will be followed as given.</p> <p>HAREDA norms shall be followed.</p> <p>Additional reduction in Energy consumption has been considered in individual heads for the following measures:</p> <p>a. Timer to switch ON / OFF external and landscape lighting and switch off 50% lights automatically at mid night or at pre-set time.</p> <p>b. Use of VFD on motors/ fans.</p> <p>Power Requirement, Source and Backup Arrangement</p> <table border="1"> <tr> <td>Power requirement</td> <td>28,310 KW</td> </tr> <tr> <td>Sources of power</td> <td>Grid supply of Dakshin Haryana Bijli Vitaran Nigam Limited (DHBVNL)</td> </tr> <tr> <td>Back-up power supply</td> <td>Back-up DG sets of total capacity 40,000 kVA (20x2000 kVA) which is equivalent to 28,800 kW kW with 90% loading will be provided for 100% power</td> </tr> </table>					Power requirement	28,310 KW	Sources of power	Grid supply of Dakshin Haryana Bijli Vitaran Nigam Limited (DHBVNL)	Back-up power supply	Back-up DG sets of total capacity 40,000 kVA (20x2000 kVA) which is equivalent to 28,800 kW kW with 90% loading will be provided for 100% power
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		arrangement	backup in case of power failure. Ultra-low sulphur diesel (ULSD) will be used as fuel.
		Stack Height	6 m above the terrace level of the building i.e building height 43.1 m =6 m =49.1 m
9.2	What type of and capacity of power back-up to you plan to provide?	During non-availability of grid supply, power supply will be provided by backup DG sets. Details are given in Table	
9.3	What are the characteristics of the glass you plan to use? Provide specifications of its characteristics related to both short wave and long wave radiation?	Back-up power supply arrangement	Back-up DG sets of total capacity 40,000 kVA (20x2000 kVA) which is equivalent to 28,800 kW kW with 90% loading will be provided for 100% power backup in case of power failure. Ultra-low sulphur diesel (ULSD) will be used as fuel.
9.4	What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project?	Efforts will be taken for energy conservation using passive solar architecture wherever it is possible.	
9.5	Does the layout of streets & buildings maximize the potential for solar energy devices? Have you considered the use of street lighting, emergency lighting and solar hot water systems for use in	Yes, the layout of streets & buildings has been designed to maximize the potential for solar energy devices. This is an shopping/ commercial building and there will be some requirement of hot water for restaurent and food courts. Therefore, solar hot water systems will be provided to meet the 20% of the total hot water requirement as per norms.	

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	the building complex? Substantiate with details.	
9.6	Is shading effectively used to reduce cooling/ heating loads? What principles have been used to maximize the shading of Walls on the East and the West and the Roof? How much energy saving has been effected?	Shading options wherever feasible will be used for energy saving.
9.7	Do the structures use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details. Provide details of the transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions? Are you using CFC and HCFC free chillers? Provide specifications.	<p>The project will be built ensuring energy conservation through energy efficient building envelope, lighting and HVAC system, use of renewable energy (Solar Energy), conservation of water through rain water harvesting system, and recycling of 100% wastewater treated up to tertiary level and other prescribed energy conservation initiatives required for certification.</p> <p>The design of the building will be such that maximum use of natural lighting can be achieved. The walls, roofs and opening will be designed to achieve minimum influx of heat.</p> <p><u>Energy Efficient Features:</u></p> <ul style="list-style-type: none"> • 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

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S. No.	Item	Details
		<ul style="list-style-type: none"> • 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.
9.8	<p>What are the likely effects of the building activity in altering the micro-climates? Provide a self- assessment on the likely impacts of the proposed construction on creation of heat island & inversion effects?</p>	<p>The building will use energy efficient and environmental friendly designs that will control formulation of heat island effect. There will be also green cover at the site to reduce formation of heat island. Passive design concepts have been used to minimize energy consumption and maximize the energy efficiency.</p> <p>Heat emission from the proposed project and associated operations can be from the sources like: Heat absorbed and radiated from the paved and concrete structures, heat generated from equipments/ appliances. However, the heat generated will not be significant and will be dissipated by the lush green provided within the project. Hence, it can be concluded that the heat island effect shall not be a concern for the proposed project and will have an overall positive effect on the microclimate of the area.</p> <p>Due to the proposed project there would be insignificant emission of air pollutants by vehicular movements and occasional use of DG sets, hence no heat island effect is envisaged.</p>

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

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S. No.	Item	Details
		To reduce the heat load reflective insulated glass shall be used in fenestrations to cut on heat loads and subsequently capital & operating cost of air conditioning.
9.9	What are the thermal characteristics of the building envelope? (a) roof; (b) external walls; and (c) fenestration? Give details of the material used and the U-values or the R-values of the individual components.	The U-values of the roof, external wall and glazing of the building will meet the requirements as specified in the Energy Conservation Building Code (ECBC).
9.10	What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans.	<p>Adequate fire protection facilities will be installed including fire detectors, fire alarm and fire-fighting system to guard the building against fires. All fire protection facilities are designed as per the latest National Building Code and local fire norms. The approvals in this regard will be obtained prior to installation of the fire protection equipment's.</p> <p>Fire extinguishing system will include the following:</p> <ul style="list-style-type: none"> • Fire detectors and fire alarm system • Fire extinguishers • Hose reel and Wet riser • Yard hydrants • Automatic sprinkler system in the building • Automatic detection and alarm system • Underground and terrace level fire water storage tanks • Electric and diesel driven fire pumps
9.11	If you are using glass as wall material provides details and specifications including emissivity and thermal characteristics.	Glass will not be used as a wall material.
9.12	What is the rate of air infiltration into the building? Provide details of how you are	Reduced air infiltration combined with proper ventilation can not only reduce energy consumption but it can also improve the quality of indoor air. The ventilation system will be designed as per NBC

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

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S. No.	Item	Details
	mitigating the effects of infiltration.	
9.13	To what extent the non-conventional energy technologies are utilized in the overall energy consumption? Provide details of the renewable energy technologies used.	Solar energy will be used; no other technologies are viable in this case. Solar energy will be used to meet various energy requirements of the project such as: <ul style="list-style-type: none"> • Solar lights for streets, landscape area and common areas • Solar photovoltaic power panels of minimum 887 kW (i.e.3% of sanctioned load) will be provided as per HAREDA norms • Solar water heating system will be provided to meet 20% of the hot water demand of the building as per norms.
10.	ENVIRONMENT MANAGEMENT PLAN	
	The Environment Management Plan would consist of all mitigation measures for each item wise activity to be undertaken during the construction, operation and the entire life cycle to minimize adverse environmental impacts as a result of the activities of the project. It would also delineate the environmental monitoring plan for compliance of various environmental regulations. It will state the steps to be taken in case of emergency such as accidents at the site including fire.	Proposed environmental mitigation measures both during construction and operation phase of the project are given in Prefeasibility report. Detailed Environmental Management Plan will be prepared and submitted in the EIA report.

Project Proponent:
M/s DLF City Centre limited.
Environment Consultant:
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Enclosure 2: Copy of ToR

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

**M/s PERFECT ENVIRO SOLUTIONS
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State Environment Impact Assessment Authority, Haryana,
Bays No.55-58, Prayatan Bhawan, Sector-2 Panchkula.

Telephone No. 0172-2565232

Memo No: SEIAA/HR/2018/ 630

Date: 15-06-2018

To

M/s DLF City Centre Ltd,
Gateway Tower, (2nd Floor), DLF City,
Phase-III, Gurgaon-122002, Haryana

Subject: Environment Clearance for shopping/commercial Building on 32.36 acres site (Mall of India) in Block-V, DLF City Phase-III, Sector-25 A, Gurgaon, Haryana.

Reference your application on the subject noted above.

In this connection, it is intimated that project proposal for approval of Terms of Reference was placed before the State Environment Impact Assessment Authority (SEIAA) in its 113th Meeting held on 28.05.2018.

The Authority approved the "Terms of Reference" and it was decided that the project proponent will prepare the EIA by using Model Terms of Reference of MoEF& CC along with the following additional terms of reference:

Specific condition:

1. The project proponent should submit traffic study and impact on the air ambient quality along with mitigation measures.
2. The PP should submit joint study report conducted with HUDA.
3. The PP should submit traffic circulation plan including traffic of nearby projects and overall impact of the national highway along with mitigation measurement.
4. The PP should submit fire fighting plan with hydraulic ladder.
5. The PP should submit green belt plan for 25%.
6. The PP should submit the drainage plan of 5 KM surrounding area.
7. The PP should submit aravali NOC.

The project proponent will submit Environment Impact Assessment Report by incorporating the Terms of References (ToR) as approved by the Authority within a time schedule in compliance of EIA Notification dated 14.09.2006. It was also decided that their project will be considered as received only after receipt of complete information.

for 
Member Secretary,
SEIAA, Haryana


STANDARD TERMS OF REFERENCE (TOR) FOR EIA/EMP REPORT FOR
PROJECTS/ACTIVITIES REQUIRING ENVIRONMENT CLEARANCE

8(b):STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR TOWNSHIP/ AREA DEVELOPMENT PROJECTS AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT

- 1) Examine details of land use as per Master Plan and land use around 10 km radius of the project site. Analysis should be made based on latest satellite imagery for land use with raw images. Check on flood plain of any river.
- 2) Submit details of environmentally sensitive places, land acquisition status, rehabilitation of communities/ villages and present status of such activities.
- 3) Examine baseline environmental quality along with projected incremental load due to the project.
- 4) Environmental data to be considered in relation to the project development would be (a) land, (b) groundwater, (c) surface water, (d) air, (e) bio-diversity, (f) noise and vibrations, (g) socio economic and health.
- 5) Submit a copy of the contour plan with slopes, drainage pattern of the site and surrounding area. Any obstruction of the same by the project
- 6) Submit the details of the trees to be felled for the project.
- 7) Submit the present land use and permission required for any conversion such as forest, agriculture etc.
- 8) Submit Roles and responsibility of the developer etc for compliance of environmental regulations under the provisions of EP Act.
- 9) Ground water classification as per the Central Ground Water Authority.
- 10) Examine the details of Source of water, water requirement, use of treated waste water and prepare a water balance chart.
- 11) Rain water harvesting proposals should be made with due safeguards for ground water quality. Maximize recycling of water and utilization of rain water. Examine details.
- 12) Examine soil characteristics and depth of ground water table for rainwater harvesting.
- 13) Examine details of solid waste generation treatment and its disposal.
- 14) Examine and submit details of use of solar energy and alternative source of energy to reduce the fossil energy consumption. Energy conservation and energy efficiency.
- 15) DG sets are likely to be used during construction and operational phase of the project. Emissions from DG sets must be taken into consideration while estimating the impacts on air environment. Examine and submit details.
- 16) Examine road/rail connectivity to the project site and impact on the traffic due to the proposed project. Present and future traffic and transport facilities for the region should be analysed with measures for preventing traffic congestion and providing faster trouble free system to reach different destinations in the city.

STANDARD TERMS OF REFERENCE (TOR) FOR EIA/EMP REPORT FOR PROJECTS/ ACTIVITIES REQUIRING ENVIRONMENT CLEARANCE

- 17) A detailed traffic and transportation study should be made for existing and projected passenger and cargo traffic.
- 18) Examine the details of transport of materials for construction which should include source and availability.
- 19) Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan with cost and parameters.
- 20) Submit details of a comprehensive Disaster Management Plan including emergency evacuation during natural and man-made disaster.
- 21) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 22) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 23) Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website "<http://moef.nic.in/Manual/Townships>".

Enclosure 3: TOR Compliance

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

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COMPLIANCE OF TERMS OF REFERENCE

S. No.	Terms of Reference	Reply
1.	Examine details of land use as per Master Plan and land use around 10 km radius of the project site. Analysis should be made based on latest satellite imagery for land use with raw images.	Landuse as per Master plan has been examined and land use map around 10 Km based on satellite imagery is given in Chapter 3, Section 3.11 of EIA Report.
2.	Submit details of environmentally sensitive places, land acquisition status, rehabilitation of communities/ villages and present status of such activities.	Environmentally sensitive places are given in chapter 2, section 2.3 of EIA Report. It is Shopping/commercial building project; License was granted by DTCP vide license 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 13.09.185, 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, 36 of 2004 dated 31.03.2004, 69 of 2013 dated 25.07.2013 for the development of Residential Plotted Colony. to Apollo Land & Housing Co. Ltd., Delhi Land & Finance Ltd., Vee Dee Investment & Agencies Ltd. and DLF Housing & Construction Ltd. Now all the companies have collaborated with DLF Limited. The proposed project will be developed by M/s DLF City Centre Limited which is subsidiary of DLF Limited. The site has been earmarked for the for commercial use as a part of Residential colony as per layout plan. No habitation exists at the site. Hence, rehabilitation not required.
3.	Examine baseline environmental quality along with projected incremental load due to the project.	Baseline environmental quality along with incremental load is discussed in Chapter 3 and 4 of EIA Report.
4.	Environmental data to be considered in relation to the project development would be (a) land, (b) groundwater, (c) surface	Environmental data is given in chapter 3 of EIA Report.

Project Proponent:**M/s DLF City Centre limited.**

Environment Consultant:

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	water, (d) air, (e) bio-diversity, (f) noise and vibrations, (g) socio economic and health	
5.	Submit a copy of the contour plan with slopes, drainage pattern of the site and surrounding area. Any obstruction of the same by the project	As the site is already excavated hence Contour plan is not available.
6.	Submit the details of the trees to be felled for the project	At present No tree exists at the site. Hence, no trees will be felled for the project.
7.	Submit the present land use and permission required for any conversion such as forest, agriculture etc.	The License was granted by DTCP vide license 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 13.09.185, 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, 36 of 2004 dated 31.03.2004, 69 of 2013 dated 25.07.2013 for the development of Residential Plotted Colony. to Apollo Land & Housing Co. Ltd., Delhi Land & Finance Ltd., Vee Dee Investment & Agencies Ltd. and DLF Housing & Construction Ltd. Now all the companies have collaborated with DLF Limited. The proposed project will be developed by M/s DLF City Centre Limited which is subsidiary of DLF Limited. The site has been earmarked for the for commercial use as a part of Residential colony as per layout plan. No conversion is required.
8.	Submit Roles and responsibility of the developer etc for compliance of environmental regulations under the provisions of EP Act.	Roles and responsibility of developer is discussed in chapter 1.
9.	Ground water classification as per the Central Ground Water Authority	The Ground water classification as per the Central Ground Water Authority is discussed in chapter 3, section 3.7 of EIA Report.
10.	Examine the details of Source of water, water requirement, use of treated waste water and prepare a water balance chart.	Source of water, water requirement, use of treated water and water balance is discussed in chapter 9, Section 9.2 of EIA Report.

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

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11.	Rain water harvesting proposals should be made with due safeguards for ground water quality. Maximize recycling of water and utilization of rain water. Examine details.	The rain water from the proposed project will be collected in the 28 no of Rain Water Harvesting Pits.
12.	Examine soil characteristics and depth of ground water table for rainwater harvesting.	Soil characteristics is given in chapter 3, section 3.9 of EIA Report and depth of ground water table for rain water harvesting is discussed in chapter 9, section 9.3 of EIA Report.
13.	Examine details of solid waste generation treatment and its disposal.	Solid waste management is discussed in chapter 9, section 9.6.2 of the EIA report.
14.	Examine and submit details of use of solar energy and alternative source of energy to reduce the fossil energy consumption. Energy conservation and energy efficiency.	Energy conservation and use of solar energy is discussed in chapter 5.
15.	DG sets are likely to be used during construction and operational phase of the project. Emissions from DG sets must be taken into consideration while estimating the impacts on air environment. Examine and submit details.	GLC due to emission is calculated by AERMOD and impact is given in chapter 4. Air dispersion report is enclosed as Enclosure 5.
16.	Examine road/rail connectivity to the project site and impact on the traffic due to the proposed project. Present and future traffic and transport facilities for the region should be analysed with measures for preventing traffic congestion and providing faster trouble-free system to reach different destinations in the city.	Road/rail connectivity are discussed in chapter 2, section 2.3 of EIA Report. Impact on traffic due to proposed project is given chapter 4, section 4.7 of EIA Report. Traffic survey is given in chapter 3, Section 3.14 of EIA Report.
17.	A detailed traffic and transportation study should be made for existing and projected passenger and cargo traffic.	Detailed traffic Report is enclosed as Enclosure 8.
18.	Examine the details of transport of materials for construction which should include source and availability.	Details of material for construction is given chapter 2, section 2.16 of EIA Report.
19.	Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan with cost and parameters.	Environmental Management Plan during construction and operation phase are given in chapter 9. Environment Monitoring Plan is given in chapter 6.
20.	Submit details of a comprehensive Disaster Management Plan including emergency evacuation during natural and man-made disaster.	Comprehensive Disaster Management Plan is given in chapter 7.

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

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21.	Details of litigation pending against the project, if any, with direction/order passed by any Court of Law against the project should be given.	There is no litigation pending against the project.
22.	The cost of the project (capital cost and Recurring cost) as well as the cost towards implementation of EMP should be clearly spelled out.	The cost of the project (capital cost and Recurring cost) is given in chapter of 9, section 9.8 of EIA Report.
23.	Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website “ http://moef.nic.in/Manual/Townships ”	Noted.

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

**M/s PERFECT ENVIRO SOLUTIONS
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Additional Terms of Reference- Project specific additional conditions:

Sr. No.	TOR POINT	Compliance
1	The PP should submit traffic study and impact on the air ambient quality along with mitigation measures.	The traffic study and impact on the air ambient quality along with mitigation measures is given in chapter 4, section 4.3 of EIA Report. The traffic study report is attached as Enclosure 8.
2	The PP should submit joint study report conducted with HUDA.	The joint study report conducted with HUDA is attached as Enclosure 8.
3	The PP should submit traffic circulation plan including traffic of nearby projects and overall impact of the national highway along-with mitigation measurement.	The traffic circulation is attached as Enclosure 10.
4	The PP should submit fire-fighting plan with hydraulic ladder.	DLF has already a full-fledged fire station including 80 m hydraulic fire ladder, fire engines, fire extinguishers and fire-fighting crew within 300 m of this project site. It will also be used for this project in case of fire.
5	The PP should submit green belt plan for 25%.	The green plan is enclosed as Enclosure 9.
6	The PP should submit the drainage plan of 5 KM surrounding area.	The drainage plan of 5 KM surrounding area is enclosed Enclosure-11.
7	The PP should submit Aravalli NOC.	The Aravalli NOC is enclosed as Enclosure-12.

Project Proponent:**M/s DLF City Centre limited.****Environment Consultant:****M/s PERFECT ENVIRO SOLUTIONS
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Enclosure 4: Environment Impact Assessment Report

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

**M/s PERFECT ENVIRO SOLUTIONS
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Chapter 1: INTRODUCTION

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 built up area of 3,77,830 sq. m after obtaining the EC, site preparation and part excavation was 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 Terms of Reference 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 as per OM dated 03.04.2018 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 project comprises of activities like offices, retail, shopping & commercial

1.1 PROFILE OF THE PROJECT PROPONENT:

The project shall be developed by M/s DLF City Centre Limited. which is a Private Limited Company duly incorporated under the Companies Act 1956 & is involved in Real estate activities with own or leased property.

1.2 Name and contact of the Project Proponent

Project proponent: M/s DLF City Centre Limited

Registered Office: 1E, Jhandewalan Extension, Naaz Cinema Complex, New Delhi

1.3 IMPLEMENTING ORGANIZATION

The land now belongs to M/s DLF Limited & the project will be developed under the banner M/s DLF City Centre Limited which is subsidiary of M/s DLF Limited. The license agreement is attached at Enclosure-14.

1.4 ENVIRONMENTAL CONSULTANT INVOLVED IN THE PROJECT:

M/s Perfect 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 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.

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

M/s PERFECT ENVIRO SOLUTIONS
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M/s Perfect Enviro Solutions Pvt. Ltd. is NABET Registered vide list of accredited consultant organizations/ Rev 67/ 9th July 2018 at S.No.-114) & an ISO 9001:2015 & ISO 14001:2015 Certified Company.

The Environmental Monitoring for air, water, soil & noise has been conducted by in-house NABL accredited laboratory namely M/s Perfect Researchers Pvt. Ltd.

Team involved in preparation of EIA is given below:

- ❖ **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	***

1.5 METHODOLOGY

This EIA/EMP report has been prepared based on the following:

1. EIA Guidance Manual for Township/ Area Development Projects, Ministry of Environment & forests.
2. Additional Terms of Reference issued by SEIAA Haryana vide letter no SEIAA/HR/2018/630 dated 15.06.2018.
3. Observations made by M/s Perfect Enviro Solutions Pvt. Ltd. during visits to the study area and collection of primary and secondary environmental data.

The main components of the method are:

- Impact Identification
- Impact Assessment
- Impact Evaluation
- Mitigation Measures

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

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1.6 LAND DESCRIPTION

The Latitude & Longitude of the site are 28°30'10.14"N & 77° 5'44.25"E respectively. The proposed project is Shopping/Commercial building on 32.36 Acre Site (Mall of India) at Block-V, DLF City Phase-III, Sector-25A, Gurgaon, Haryana being developed by M/s DLF City Centre Limited.

The License was granted by DTCP vide license 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 13.09.185, 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, 36 of 2004 dated 31.03.2004, 69 of 2013 dated 25.07.2013 for the development of Residential Plotted Colony. to Apollo Land & Housing Co. Ltd., Delhi Land & Finance Ltd., Vee Dee Investment & Agencies Ltd. and DLF Housing & Construction Ltd. Now all the companies have collaborated with DLF Limited. The proposed project will be developed by M/s DLF City Centre Limited which is subsidiary of DLF Limited. The license is attached as Enclosure -14.

The site has been earmarked for the for commercial use as a part of Residential colony as per layout plan. No conversion is required.

Sector : 25 A
 Tehsil : Gurugram
 District : Gurugram
 State : Haryana

1.7 ENVIRONMENTAL LEGISLATIONS APPLICABLE TO THE PROJECT

Following legislations are applicable to the project. Therefore, it is the responsibility of the developer to comply with these legislations.

➤ THE WATER (PREVENTION AND CONTROL OF POLLUTION) ACT 1974

Under Section 25. Restrictions on New Outlets and New Discharges

- Applicable due to discharge of waste water from the commercial building.
- Under the above-mentioned act, we shall take consent "consent to establish" & "consent to operate" of the State Pollution Control Board.

➤ THE AIR (PREVENTION AND CONTROL OF POLLUTION) ACT, 1981

Under section 21. Restrictions on use of certain industrial plants.

- Applicable due to provision of DG Sets which will be source of air emission to atmosphere. Stack shall be installed.
- Under the above- mentioned act, we shall take consent "consent to establish" & "consent to operate" from the State Pollution Control Board.

➤ THE WATER (PREVENTION AND CONTROL OF POLLUTION) CESS ACT, 1977

Under Section 3: Levy and Collection of Cess

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

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- There shall be levied and collected a cess for the purpose of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) and utilization there under.
- The cess under sub-section (1) shall be payable by—
- Every person extracting water from ground.
- Everyone using supply water.

➤ **C&D WASTE MANAGEMENT RULES, 2016**

As per this rule C&D waste is to be disposed to the designated C&D waste site.

➤ **DUST MITIGATION RULES, 2018**

- It is Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance

➤ **S.O.908 (E), [25/9/2000] - THE MUNICIPAL SOLID WASTES (MANAGEMENT AND HANDLING) RULES, 2016**

As per this rule solid waste is to be segregated and disposed as per defined procedure at MSW approved site or within its own shopping/commercial building by using different solid waste disposed technologies.

➤ **HAZARDOUS & OTHER WASTE (MANAGEMENT & TRANSBOUNDARY MOVEMENT) RULES, 2016**

- Hazardous wastes shall be collected, treated, stored at isolated locations.
- It will be given to authorized recyclers/ service providers only.
- Authorization under this rule shall be taken from SPCB.

➤ **E-WASTE (MANAGEMENT & HANDLING) RULES, 2016**

- E-waste shall be collected and stored at isolated location in the Shopping/commercial building
- It shall be disposed through approved recycler only.

➤ **PLASTIC WASTE (MANAGEMENT & HANDLING) RULES, 2016**

- Plastic waste shall be collected and stored at isolated location in the Shopping/commercial building
- It shall be disposed through approved recycler only.

THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000

- The noise levels in any area shall not exceed the ambient noise quality standards in respect of noise as specified in the schedule.
- The authority shall be responsible for the enforcement of noise pollution control measures and the due compliance of the ambient noise quality standards in respect of noise.

Project Proponent:

M/s DLF City Centre limited.

Environment Consultant:

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➤ EIA NOTIFICATION, 2006 & its Amendments

EIA Notification, 2006 falls under EPA, 1986 under this act any project which has probable impact on the environment is listed under 34 categories, then unit are required to take prior environmental clearance after occupying/identifying the land for particular use.

The project comes under category "A" & listed in 8(b) schedule as per EIA notification, 2006. All projects or activities in the schedule, whether expansion and modernization of existing projects or activities and change in product mix shall require prior environmental clearance from the MoEF&CC/State Environmental Impact Assessment Authority (SEIAA) or in absence of SEIAA, Central Government in the ministry of Environment and Forests on the recommendation of Expert Appraisal Committee to be constituted by the Central Government.

The case was transferred to SEAC/SEIAA, Haryana, as per amendment in notification vide **OM vide F.No . 3-150/2017-IA-III dated 03.04.2018**, the project falls under category 'B', of Schedule 8(b) & is exempted from Public Hearing and shall be appraised by SEAC Haryana. The baseline data was collected for one month i.e. May 2018. We are submitting the EIA Report along with TOR Compliance under

1.8 NORMS & CODES APPLICABLE TO THE PROJECT

❖ Aravali Notification

Under Section 3(1) and 3(2)(v) of Environment (Protection) Act, 1986 and rule 5(3)(d) of the Environment (Protection) Rules, 1986 restricting certain activities in specified area of Aravali Range which are causing Environmental Degradation in the Region.

S.O. 319(E) Whereas a Notification under section 3(1) and section 3(2) (v) of the Environment (Protection) Act, 1986 (29 of 1986) inviting objections against restricting certain activities in specified area of Aravali Range which are causing Environmental Degradation in the Region was published in the Gazette of India, Part II-Section 3 Sub-section (ii) vide S.O. 25(E) dated 9th January, 1992.

❖ Fire Fighting and High-rise building Norms

For Buildings more than 15 m height- All necessary fire-fighting equipment shall be in place before the occupancy of the building.

Mandatory Mock-up drills- Regular and periodic mock-up drills shall be undertaken by the Fire Department at least once in a year.

NOC from the Fire Department- NOC shall be obtained from the local Fire Station at 2 stages

- a) Before the construction
- b) Before the occupation of the Building

Applicable guidelines of Fire Department National/State Disaster Management Authority shall be strictly followed by the developer and occupiers/Cooperative Societies.

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❖ Energy Conservation Building Code (ECBC Codes) 2016:

The norms shall be applicable to all the buildings constructed on plot having land area > 500 sq m.

The provisions of the code apply to:

- Building envelopes, except for unconditioned storage spaces or warehouses
- Mechanical systems
- and equipment, including heating, ventilating, and air conditioning (HVAC)
- Service hot water heating
- Interior and exterior lightning
- Electrical power and motors

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Chapter 2: DESCRIPTION OF THE PROJECT

2.1 GOAL & OBJECTIVE OF THE PROJECT:

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 Terms of Reference 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 project comprises of activities like offices, retail, shopping & commercial.

2.2 SIGNIFICANCE OF THE PROJECT:

It will increase Infrastructure of the area & will provide better employment opportunities. It will provide healthy, green & safe place. It will provide a better environment with amenities like offices, retail, shopping & commercial etc.

2.3 CRITERIA FOR SELECTION OF SITE:

As per Gurgaon master plan this land is in Residential plotted colony. However, the site has been earmarked for the commercial use as a part of Residential colony as per layout plan.

(a) Location: The project Shopping/ Commercial Building on 32.36 acres Site (Mall of India) in Block-V, DLF City Phase-III, Sector-25A, Gurgaon.

(b) Infrastructure around the Site

- Physical
- The surrounding area to the project site is a developing area with no. of commercial projects being developed. Area is well connected by road network and has all necessary amenities.

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- Social Facilities: The area is a commercial area. The area is catered by many social facilities.

Infrastructure	Distance
<u>Hospital</u>	
Narayana Super Speciality Hospital, Gurugram	0.47 km SE
Columbia Asia Hospital- Palam Vihar	5.17 km W
Fortis Hospital	5.08 km NNW
Fortis Ft. Lt. Rajan Dhall Hospital, Vasant Kunj	6.46 km NE
Artemis Hospital	7.88 km S
<u>Post Office</u>	
Post Office Sector 18 Gurugram	0.94 km SW
Dlf Phase- II Post Office	1.61 km S
<u>Places of worship</u>	
Sri Siddhi Ganesh Mandir	3.62 km S
Shree Adya Katyayani Shaktipeeth Mandir	8.12 km E
Shahi Masjid Vasant Vihar	8.21 km E
Gurudwara Sadh Sangat Sector 41 Gurugram	5.77 km S
DLF Gurudwara SECTOR 26 Gurugram	2.37 km S
<u>School / Colleges</u>	
Vasant Valley School	5.62 km NE
Ram Lal Anand College	10.23 km NE
Jawahar Lal Nehru University, New Delhi	7.85 km NE
University Of Delhi	11.05 km NE
<u>Bank</u>	
Canara Bank	0.76 km NW
Syndicate ATM Sector 24 Gurugram	0.67 km S
HDFC Bank/ATM Kapashera	2.51 km NW
Bank Of Baroda ATM	3.85 km W
<u>Police station</u>	

Table 2-1; Social Infrastructure Available near the project

(c) Connectivity:

The project Shopping/ Commercial Building on 32.36 acres Site (Mall of India) in Block-V, DLF City Phase-III, Sector-25A, Gurgaon. The connectivity with the site is given below:

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Name	Distance and Direction
National Highway NH-8	Adjacent to the site in West Direction
Nearest Metro Station Indusland Bank Cyber City Rapid Metro Station DLF Phase III Rapid Metro Station	0.61 Km WWS 0.72 Km S
Railway Station Gurugram Railway Station	7.8 km WNW
Airport Indira Gandhi International Airport	6.8 km NNE

(d) Seismicity: Project Site is located in seismic zone IV.

(e) Physiographic and topography of the area: There are no significant physiographic features seen in the city area or the surroundings. The entire area is monotonously flat. The latitude & longitude of the site is 28°30'10.14"N & 77° 5'44.25"E respectively. Topographical map is given below & also attached as Enclosure-6.

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(f) **Ecological Sensitivity:** There is no ecological sensitive area in core zone. The ecological sensitivity of buffer zone is as follows:

Bird Sanctuary/ Biodiversity Park	Distance & Direction
Sultanpur National park	20.4 km in West direction
Asola Bhatti wildlife sanctuary	15.6 km SE
Water Bodies	
Najafgarh Drain	9.20 Km NW
Ganda Nala	9.91 Km NW

(g) **Land Form & Land Ownership**

The land is owned by **M/s DLF Ltd.** in collaboration with others. The land is almost of plain terrain and no construction has been done yet, only partly excavation has been

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done. The site has been earmarked for the for commercial use as a part of Residential colony as per layout plan. No conversion is required.

Location of Land

Google Map showing location is given in the figure 2-1.



Figure 2-1; Satellite image of the project using Google Earth

2.4 RESOURCE AND MANPOWER REQUIREMENT:

The work will be executed through a renowned contractor through a tender process selection. Manpower, which is approx. 2000 no. of local labours arranged from nearby areas.

2.5 TIME FRAME OF THE PROJECT:

After all the statutory approvals from Govt. Authorities and the grant of Environment Clearance, the construction work will start and it will take approx. 3-4 years to complete the project.

2.5.1 CONSTRUCTION STATUS

Construction has not started yet. Only part excavation has been done.

2.6 PROJECT DETAILS

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

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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 total plot area will be 130956.07 sq. m out of which 65478.03 sq. m shall be utilized as Ground Coverage. Total FAR area is 458200.53 sq. m. and other built up area is 87408.29 Sq. m. There will be 5 level of basement with basement area of 511505.26 Sq. m. and green area is 32754.438 (25.01%). The maximum height of the building will be 43.1 m, 5 Basement + LG + UG +8 no of Floor.

The area detail breakup is given in table-

AREA DETAILS: -

Description	Unit	Proposed Details
Plot Area (In sqm)	m ²	130956.07 (32.36 acre)
Ground Coverage (Permissible)	m ²	65478.03 (50.00%)
Ground Coverage (Proposed)	m ²	62262.72 (47.54%)
FAR (Permissible)	m ²	458346.23 (350%)
FAR (Proposed)	m ²	458200.53 (349.88%)
Other built-up area	m ²	87408.29
Total Basement area	m ²	511505.26
Built-up Area (FAR + Basement area +other built-up area)	m ²	1057114.09
Total Green Area	m ²	32754.438 (25.01%).
Total Open & Road Area	m ²	35938.912 (27.45%)
Maximum No. of Floors	No.	5 Basement + LG + UG +8 Floor
Height of Building	m	43.1

Table 2-2 Area detail

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Service Details: -

DETAILS	Unit	Proposed Details
No of Rain Water Harvesting Pits	No.	28
Total Power Load	kW	28310
D.G. sets	KVA	20 x 2000 (100 % backup of total capacity 40000 KVA which is equivalent to 28,800 KW with 90% loading)
Total Population	No.	93675
Total Solid Waste Generation	kg/day	9322
Total water Requirement	KLD	3283.8
Fresh water Requirement	KLD	1510.3
Treated water reuse	KLD	1773.5
Total Waste water Generation	KLD	1866.8
STP Capacity	KLD	2200
Parking Requirement	ECS	8248
Total Parking Provided	ECS	10522

Table 2-3 Service detail

2.7 POPULATION

During Construction phase, Approx. 2000 Nos. of local labour will be employed for the construction of the Shopping/ Commercial Building.

During Operation phase, the total population of the project has been estimated to be 93675 persons. The population estimation is given in table-

Particulars	Population
Staff (Retail)	8658
Staff (Office)	6174
Visitors (Retail)	77917
Visitors (Office)	926
Total Population	93675

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2.8 WATER SUPPLY SOURCE AND CONSUMPTIONS:

During Construction phase

Water shall be arranged on temporary basis through treated water from HUDA STP which will be provided by tanker supplier from nearby STP. The total water requirement for labours, construction activities & sprinkling is 180 KLD out of which approx. 40 KLD of waste water will be generated. The waste water from mobile toilets will be collected in a sump and finally disposed regularly to HUDA STP through vendors.

During Operation Phase

Total quantity of water requirement of the project will be 3283.8 KLD out of which fresh water requirement will be 1510.3 KLD which will be met by HUDA. Total quantity of wastewater generation will be 1866.8 KLD. The treated water 1773.5 KLD shall be generated from STP which will be utilized for flushing, gardening & cooling tower. It will be a zero-discharge unit. In the colony, the waste water generated will be treated in in-house Sewage Treatment Plant of capacity 2200 KLD. The STPs shall be based on Membrane Bioreactor (MBR) process.

2.9 SOLID WASTE MANAGEMENT

During construction phase

Part excavation was done, excavated soil has already been reused for construction of road in the Gurgaon area. Top soil will be stacked properly and will be covered with tarpaulin cover

Approx. 200 Kg/day of Municipal Solid Waste generated from temporary labours shall be disposed to Municipal Corporation of Gurgaon (MCG) designated site through authorized vendor. Used oil whenever generated from the DG sets will be kept in an isolated area and in leak proof container and sent to the approved recycler.

During operation phase

MUNICIPAL SOLID WASTES

Total 9322 Kg/day of municipal solid waste will be generated from the proposed project. Out of which total 3729 Kg/day of Bio-Degradable waste shall be treated in organic waste converter and converted to manure. The compost shall be used as manure in green area within the project premises & unused manure shall be given to nursery. 5593 Kg/day of Non-Biodegradable Waste shall be given to Authorized Recycler.

HAZARDOUS WASTES

The only hazardous waste to be generated within the project will be 1800 ltr/ month of used oil due to operation of DG sets of the project during power failure. The hazardous wastes will be stored and given to approved recycler as per The Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.

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ELECTRONIC WASTES

As per E-waste (Management & Handling) Rules, 2016 all the unused electronic items are called electronic waste which include electronic items like computers, refrigerators, LCDs, dry batteries etc. Approx. 5-10 Kg/day E-wastes shall be generated & will be given to approved E-waste recycler for proper disposal as per E-waste management & Handling Rules 2016.

BATTERIES WASTE

Battery waste shall be generated from the invertors, UPS, etc. The batteries waste shall be given to battery recycler as per the batteries waste (management & handling) Rules, 2001.

2.10 POWER SUPPLY SOURCE AND REQUIREMENT:

The power shall be supplied from the Dakshin Haryana Bijli Vitran Nigam Limited (DHBVNL). Total Power requirement of the proposed project will be 28310 KW.

2.10.1 POWER BACK-UP

In case of power failure, power backup will be provided by DG sets of capacities 20 x 2000 KVA will be installed in the basement of complex. Stack height of 6.0 m above roof level will be maintained as per CPCB guidelines.

2.11 AIR POLLUTION

The major air pollutants released from the proposed project are gases like NOX, SO2 and PM from DG Sets & vehicular emission. For mitigation of impacts, adequate stack height 6 m above roof level as per CPCB norms will be provided to D.G. Sets.

For mitigation of impacts of vehicular emission, a green belt & plantation around the periphery will be provided and entry will only be permitted for the vehicle which will have pollution Under Control Certificate.

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2.12 NOISE POLLUTION

The DG sets shall be properly & timely maintained & fitted with Anti-Vibration pads and shall be kept in acoustically enclosed room in basement. Green belt development all around the project shall help in reducing outside traffic noise.

2.13 PARKING MANAGEMENT

Parking requirement for proposed project will be 8248 ECS & parking provision will be 10522 ECS which shall be provided on basement.

2.14 ENVIRONMENTAL LIABILITY OF THE SITE:

The project site during construction & operation phase will have some impact on water resources, ambient noise and ambient air. The details of which are explained in further chapters along-with their mitigation measures so as to limit the environmental liability to the least.

2.15 MAPS/ TOPOSHEETS ATTACHED:

- a) 10 km radius Topographical map: Attached as Enclosure 6.
- b) Site layout plan: Attached as Enclosure 7.
- c) Landuse has been discussed in Chapter -3

2.16 Building material used:

Table 2-3 Building materials used

S. No.	Material
1.	Steel
2.	Cement
3.	Stone Aggregate
4.	Sand
5.	Bricks
6.	Glass
7.	Flyash based products

Chapter 3: DESCRIPTION OF THE ENVIRONMENT

3.1 INTRODUCTION

EIA report contains a detailed description of existing environment that would be or might be affected directly or indirectly by the proposed project. Environmental baseline monitoring is a very important stage of EIA. Environmental baseline monitoring, during the operational phase, helps in judging the success of mitigation measures in protecting the environment.

Environmental facets that are considered in relation to “Shopping/Commercial Building on 32.36 Acre Site (Mall of India) can be categorized into following groups:

- a) Ambient air quality
- b) Noise quality
- c) Water quality
- d) Soil quality
- e) Topography
- f) Land use
- g) Biological Environment
- h) Socio-economic status
- i) Traffic density

The intention of environmental baseline monitoring is not just to describe all baseline conditions but to focus the collection and description of baseline data on those environmental conditions that are important and are likely to be affected by the proposed project activities and is included in impact assessments.

3.2 METHODOLOGY

For the present study, all the sampling locations are marked with the help of topographical maps. The land use/ land cover map has been generated on 1:50,000 scale using Satellite imagery, topographical maps, Survey of India and ground truth information. The baseline environmental quality has been assessed during Summer Season (March 2018 to May 2018). Meteorological data of IMD station at Palam, Delhi has been used for the study. Samples of air, water and soil from the site and nearby areas has been collected and analysed for the study of existing condition. Primary and secondary data collection has been done by the Ecology and Biodiversity team for the study of flora and fauna in the core and Buffer Zone.

The baseline data is generated through field study within the impact zone (Core Zone and Buffer Zone) for various components of the environment viz. Air, Noise, Water, Land, Ecology and Socioeconomic. The baseline environmental quality has been assessed during Summer Season (March 2018 to May 2018) in a study area of 10 Km radius distance from the project site. While generating the baseline status of physical and biological environment of the study area, the concept of impact zone has been considered. The impact zone selection is based on preliminary screening and modelling studies. The methodology for various environmental facets are as follows:

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- I. **Ambient Air Quality:** The ambient air quality monitoring was done to assess the ambient air quality in one season. Monitoring was carried out in the Summer Season from the month of March 2018 to May 2018. The guidelines for selections of ambient air monitoring stations given in IS – 5182 part 14, 2000 were followed.
- II. **Water Quality:** To assess the water quality of the proposed area, sampling was done as per the standard practice. Grab & Composite sampling was done for ground and surface water. Water samples were taken as per the Standard Methods (IS & APHA, 23rd Edition 2017). Necessary precautions were taken for preservation of samples. The physical parameters viz. pH, temperature and conductivity were measured at site using portable water analyzer.
- III. **Ambient Noise Quality:** At each station noise level was monitored for 24-hours simultaneously. For each measurement, dB (A) readings was taken for every 15 minutes for 24 hrs ones in a season to get Leq values.
- IV. **Soil Quality:** For soil, augur method was used and samples were collected at 15 cm depth after removing the upper crust.
- V. **Land Use:** The land use/ land cover map has been generated on 1:50,000 scale using Satellite imagery, topographical maps, Survey of India and ground truth information.
- VI. **Biological Environment:** Primary and secondary data collection has been done by the Ecology and Biodiversity team for the study of flora and fauna in the core and Buffer Zone.
- VII. **Socio Economic Environment:** For demography and socioeconomics, block wise data has been collected and used for the assessment of impacts.
- VIII. **Micro-Meteorological Data:** Site specific Micro Meteorological data has been used for the study. The important parameters considered are temperature, humidity & wind speed.

3.3 METEOROLOGY**3.3.1 Climatic Conditions (As Indian Meteorological Data, Palam)**

The proposed Shopping/ Commercial Building on 32.36 acres Site (Mall of India) in Block-V, DLF City Phase-III, Sector-25A, Gurgaon. The meteorological data from Indian Meteorological Station was processed for the nearest IMD station at Palam which has been utilized for the study. The important parameters considered are temperature, humidity, wind speed, wind direction and rainfall. The meteorological data of last Eleven years (2002-2013) as recorded at Palam are given below:

3.3.2 Temperature:

The maximum temperature of the area was recorded as 47.2 in May (2013) whereas the minimum temperature of the area was recorded 0.3 in January 2006. Data of the maximum and minimum temperature are given below.

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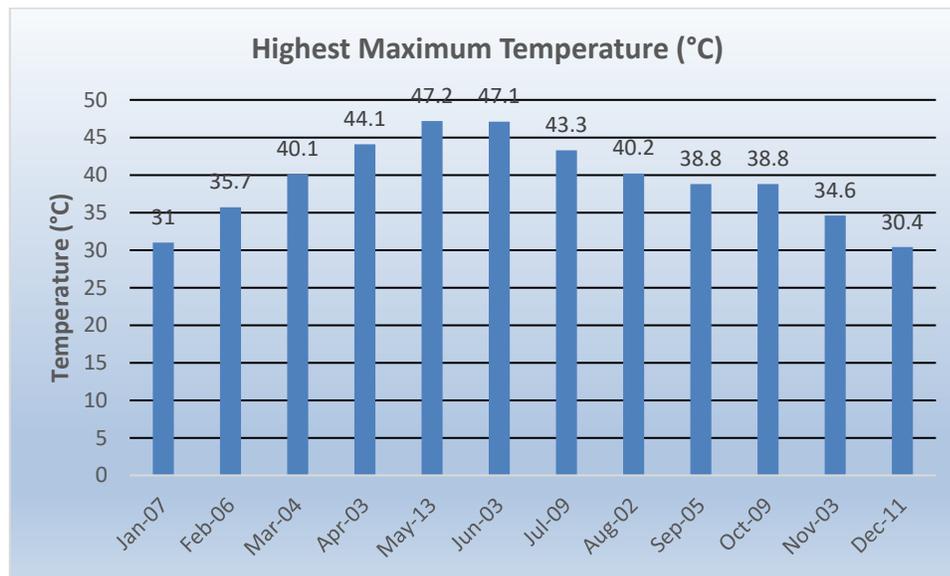
Table 3.1;Temperature Record

Temperature (°C)								
Month	Year	H Max.	Year	L Min.	Year	MMax.	Year	MMin.
January	2007	31.0	2006	0.3	2006	21.8	2008	6.9
February	2006	35.7	2004	3.2	2006	29.6	2002	9.6
March	2004	40.1	2003	6.7	2004	33.7	2003	15.1
April	2003	44.1	2013	12	2002	39.5	2005	20.6
May	2013	47.2	2004	16.8	2013	42.8	2008	25
June	2003	47.1	2011	21.4	2009	42.6	2008	26.2
July	2009	43.3	2003	23	2002	40.5	2003	26.3
August	2002	40.2	2013	20.8	2009	36.1	2004	26.2
September	2005	38.8	2002	20.4	2004	35.5	2002	23.5
October	2009	38.8	2004	13.7	2008	34.1	2007	17.7
November	2003	34.6	2003	5.9	2011	29.6	2003	11.8
December	2011	30.4	2013	3.1	2002	24.7	2005	5.9

(Source: IMD, Station- Palam from 2002 - 2013)

H max- Highest max, **L min-** Lowest min, **M max-** Mean max., **M min-** Mean min.

Figure 3-1;Highest Maximum Temperature (°C)



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Figure 3-2; Lowest Minimum Temperature (°C)

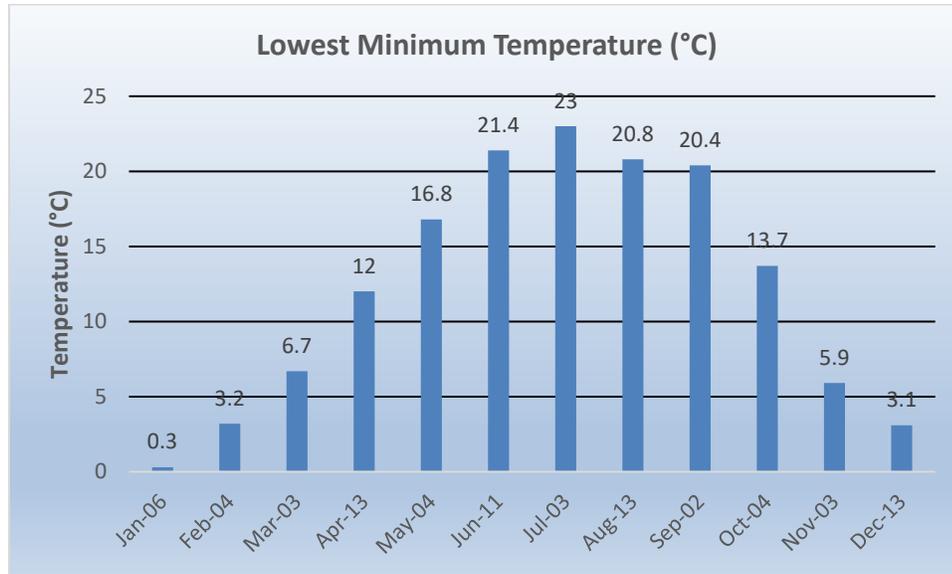


Figure 3-3; Mean Maximum Temperature (°C)

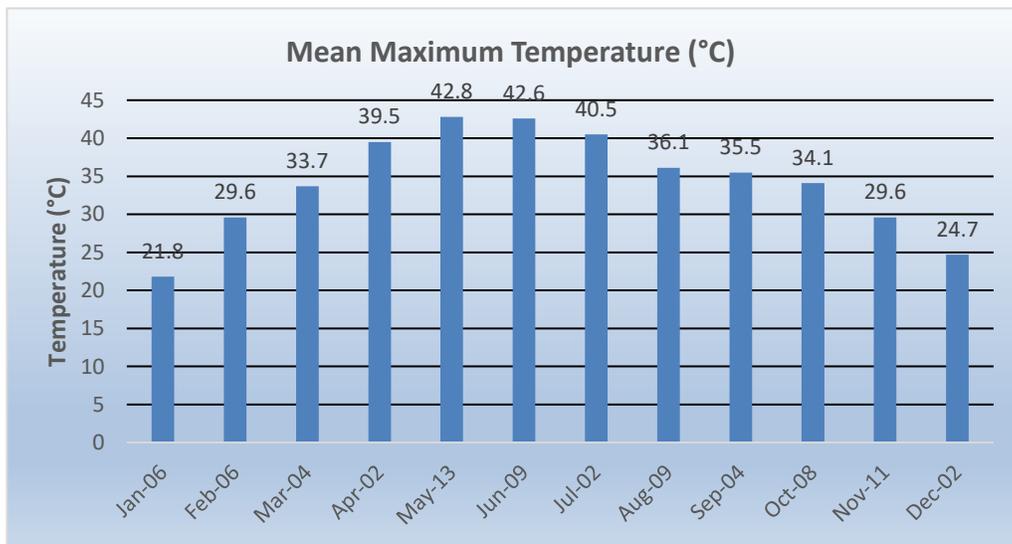


Figure 3-4; Mean Minimum Temperature (°C)



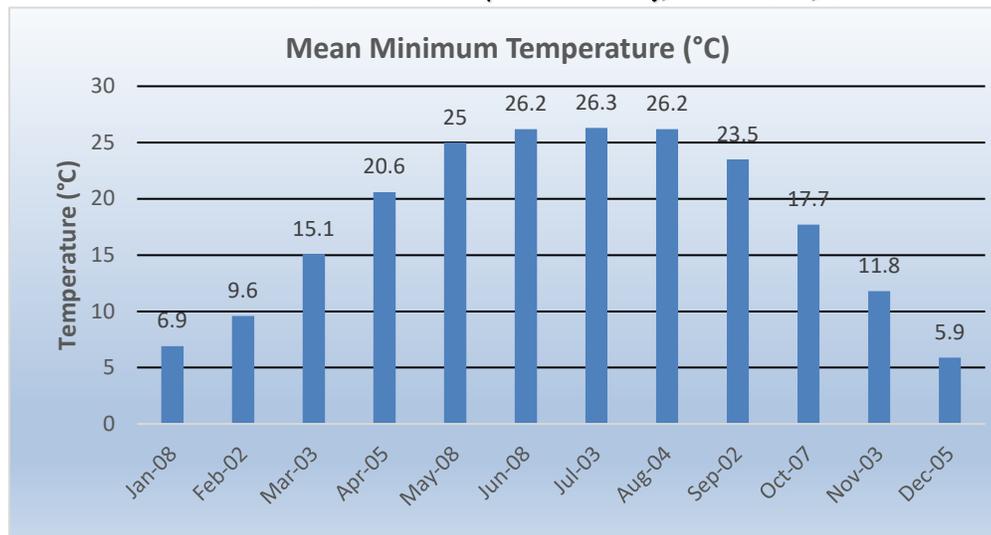
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**3.3.3 Relative Humidity:**

The Maximum relative humidity was recorded as 84.5% in January 2003. Minimum relative humidity was recorded as 25.5 % in April & May 2005. The humidity figures show that area is semi-arid.

Table 3.2;Relative humidity record

Humidity (%)				
Month	Year	Max	Year	Min
January	2003	84.5	2008	60.5
February	2013	79.5	2008	53
March	2013	63	2004	44
April	2013	46	2005	25.5
May	2006	45	2005	25.5
June	2008	70	2009	32.5
July	2013	78	2002	47
August	2013	83	2005	61
September	2003	74.5	2008	64.5
October	2013	69	2007	45.5
November	2011	63	2005	56.5
December	2003	78	2005	63.5

(Source: IMD, Station- Palam from 2002 - 2013)

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Figure 3-5;Maximum Humidity (%)

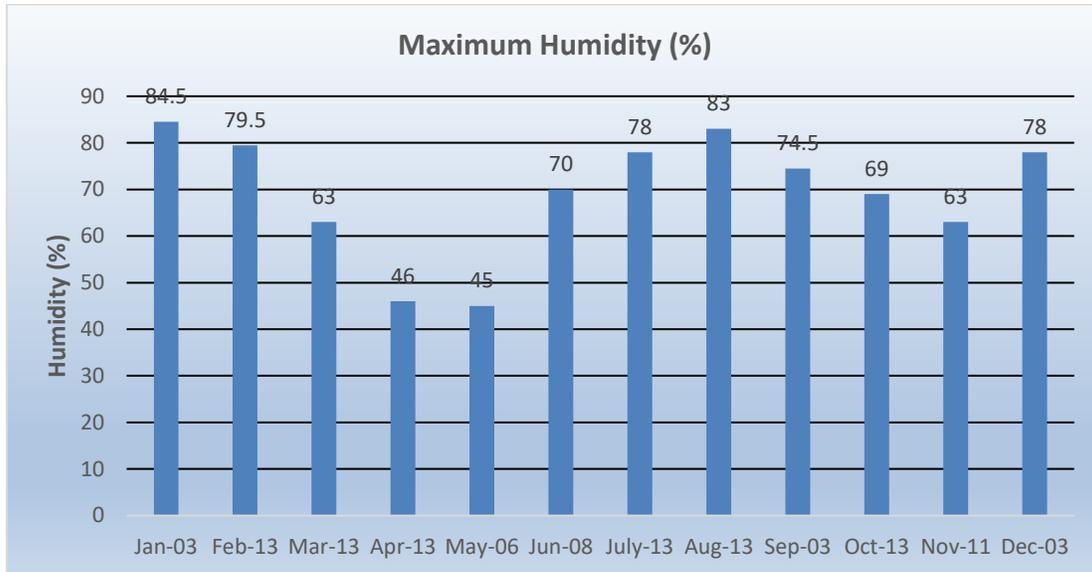
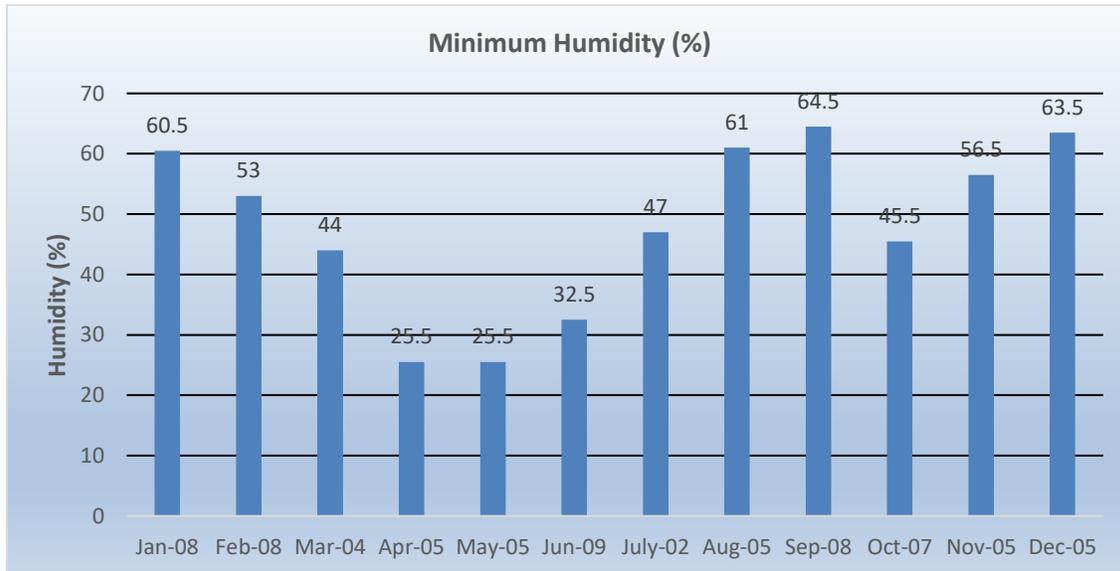


Figure 3-6;Minimum Humidity (%)

**3.3.4 Rainfall:**

The maximum rainfall was recorded in July (upto 495.6 mm) in 2003. From data it is clear that maximum time of year remain dry, the dry months exceed wet months. July is the wettest months. The Average Annual Rainfall is 657.97 mm.

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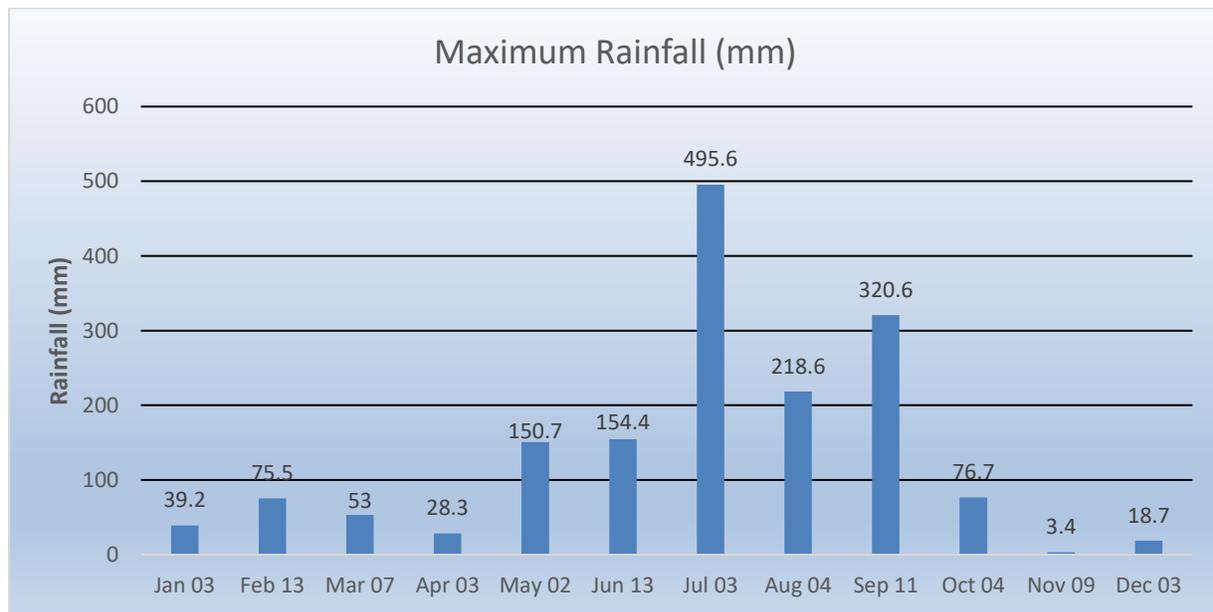
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Table 3.3; Rainfall Record (mm)

Rainfall (mm)					
Month	Year	Max	Year	Min	Average
January	2003	39.2	2011	0.2	12.73
February	2013	75.5	2,009	5.8	28.71
March	2007	53	2003	2.1	13.1
April	2,003	28.3	2006	1	9.93
May	2002	150.7	2013	1.1	51.96
June	2013	154.4	2002	13.1	85.45
July	2003	495.6	2002	1.7	161.1
August	2004	218.6	2006	103.2	153
September	2011	320.6	2004	2.9	124.7
October	2004	76.7	2009	2.8	13.52
November	2009	3.4	2006	0.2	0.52
December	2003	18.7	2007	0.3	3.25

(Source: IMD, Station- Palam from 2002 - 2013)

Figure 3-7; Maximum Rainfall (mm)

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Figure 3-8; Minimum Rainfall (mm)

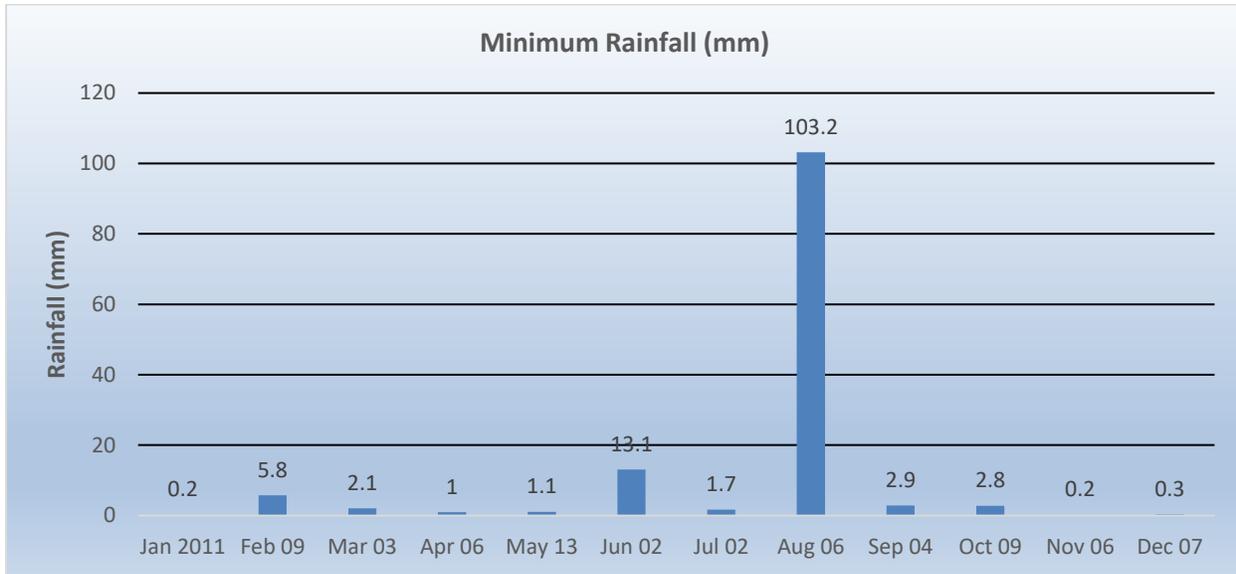
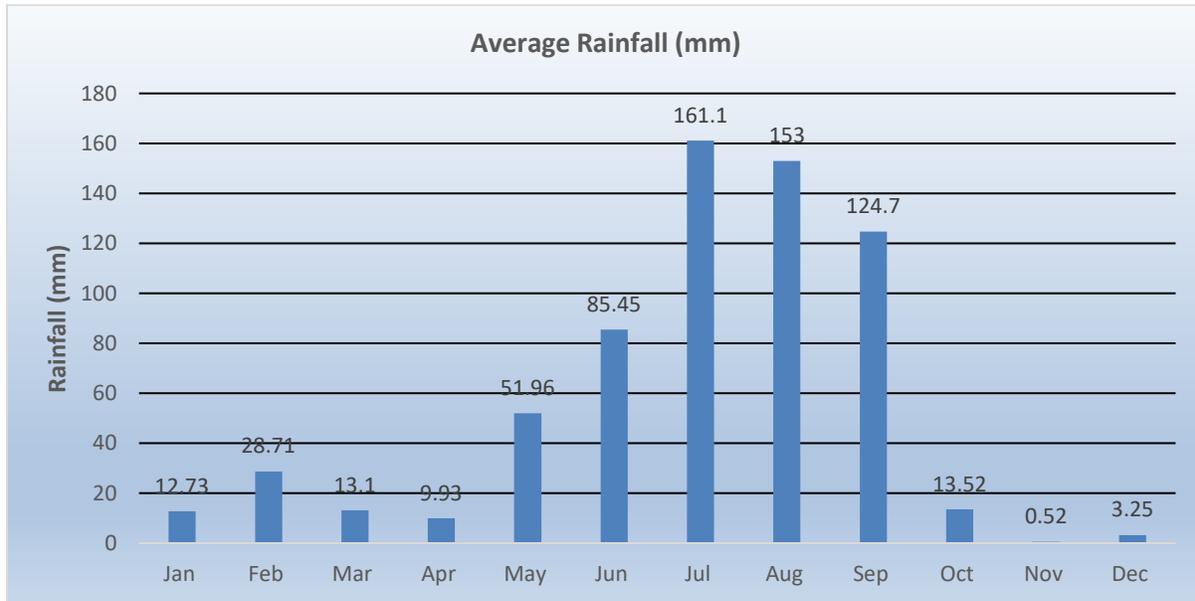


Figure 3-9; Average Rainfall (mm)



3.3.5 Wind Speed:

The maximum wind speed was recorded is (14.7 Km/hr.) in July 2002 and minimum wind speed was recorded is (2.3 Km/hr.) in 2004.

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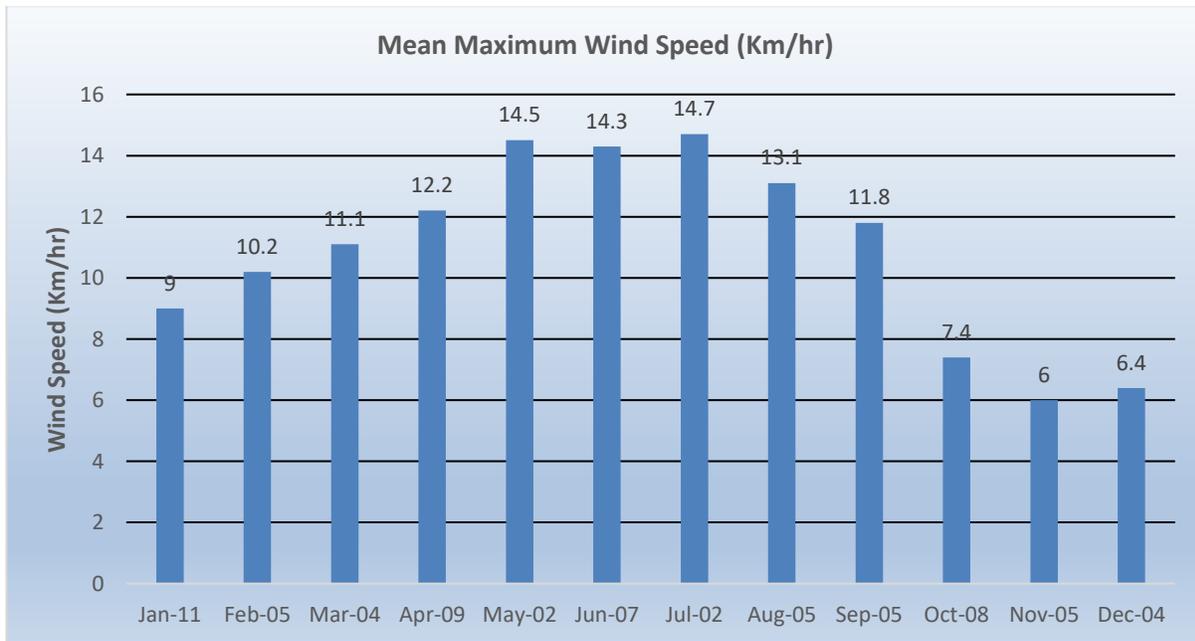
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Table 3.4; Wind Speed Record

Month	Year	Max Wind speed (Km/hr)	Year	Min Wind speed (Km/hr)
January	2011	9	2003	4.2
February	2005	10.2	2006	6.8
March	2004	11.1	2006	8.4
April	2009	12.2	2006	9.5
May	2002	14.5	2011	10.9
June	2007	14.3	2008	7.6
July	2002	14.7	2013	8
August	2005	13.1	2003	6
September	2005	11.8	2003	5.9
October	2008	7.4	2004	4.9
November	2005	6	2002	2.3
December	2004	6.4	2002	2.4

Source: IMD, Station- Palam from 2002 - 2013)

Figure 3-10; Mean Maximum Wind Speed (Km/hr)



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Figure 3-11; Mean Minimum Wind Speed (Km/hr)

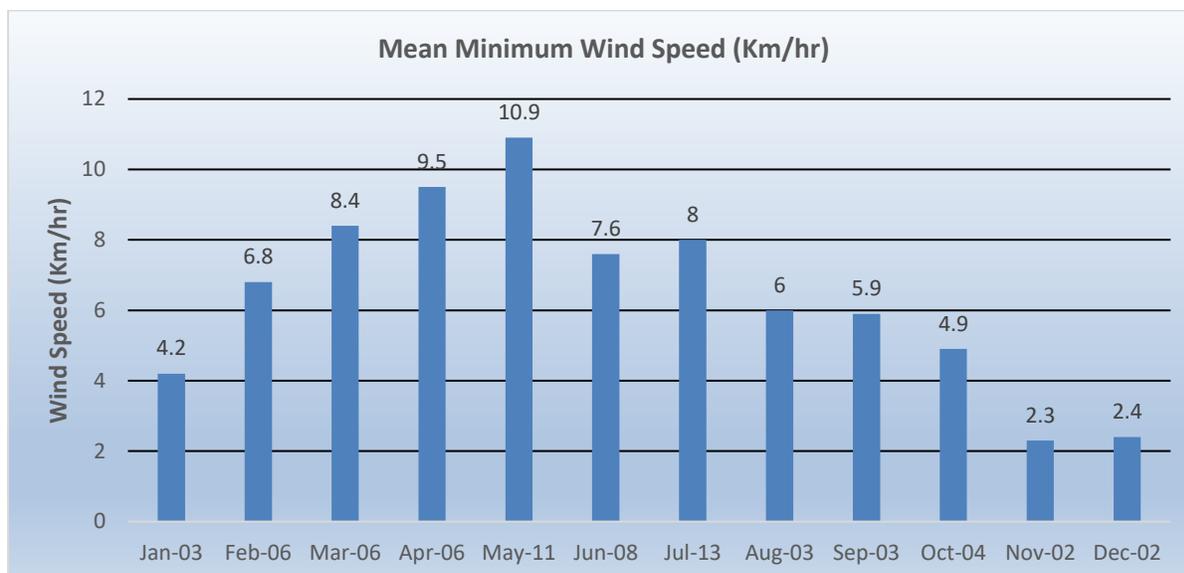
**3.3.6 Wind Direction:**

Table 3.5; Wind direction record

Month	Direction	Calm
January	NW	24.6%
February	W	18.2%
March	W	9.0%
April	NW	6.3%
May	W	5.0%
June	W	7.2%
July	E	7.4%
August	E	12.6%
September	NW	14.7%
October	NW	28.5%
November	W	46.3%
December	W	39.7%

(Source: IMD, Station- Palam from 2002 - 2013)

The predominant wind direction is towards **West to East**. The season wise pre dominant wind directions are given below:-

Winter Season	West
Summer Season	West

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Post Monsoon season	West
---------------------	------

Seasonal Wind Rose Diagram:

WIND ROSE DIAGRAM ANNUAL (2002-2013)

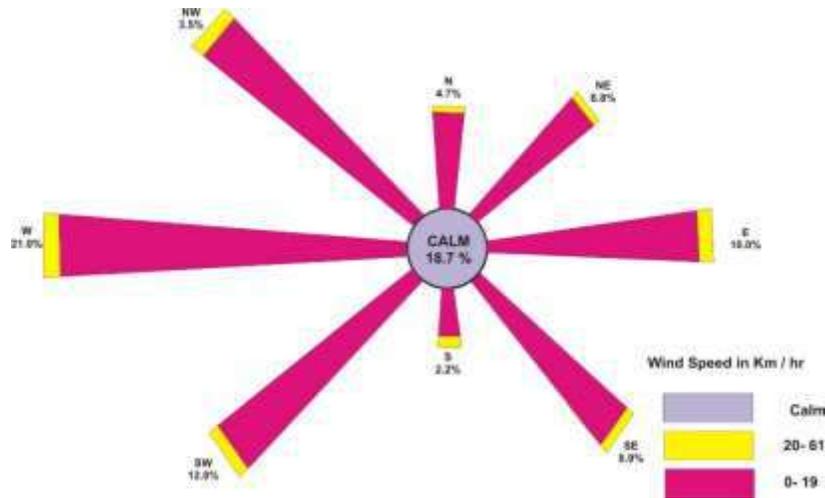


Figure 3-12 Windrose diagram (annual average)

WIND ROSE DIAGRAM WINTER SEASON (2002-2013)

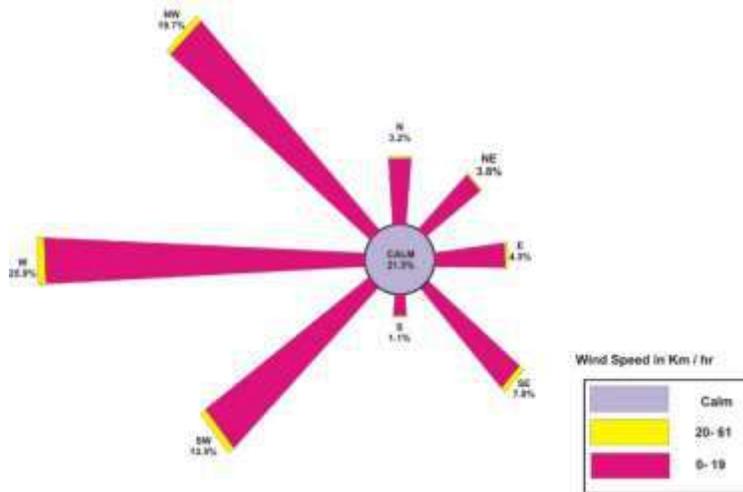


Figure 3-13 Wind Rose Diagram winter Season

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WIND ROSE DIAGRAM SUMMER SEASON (2002-2013)



Figure 3-14 Wind Rose Diagram of summer Season

WIND ROSE DIAGRAM POST MONSOON SEASON (2002-2013)

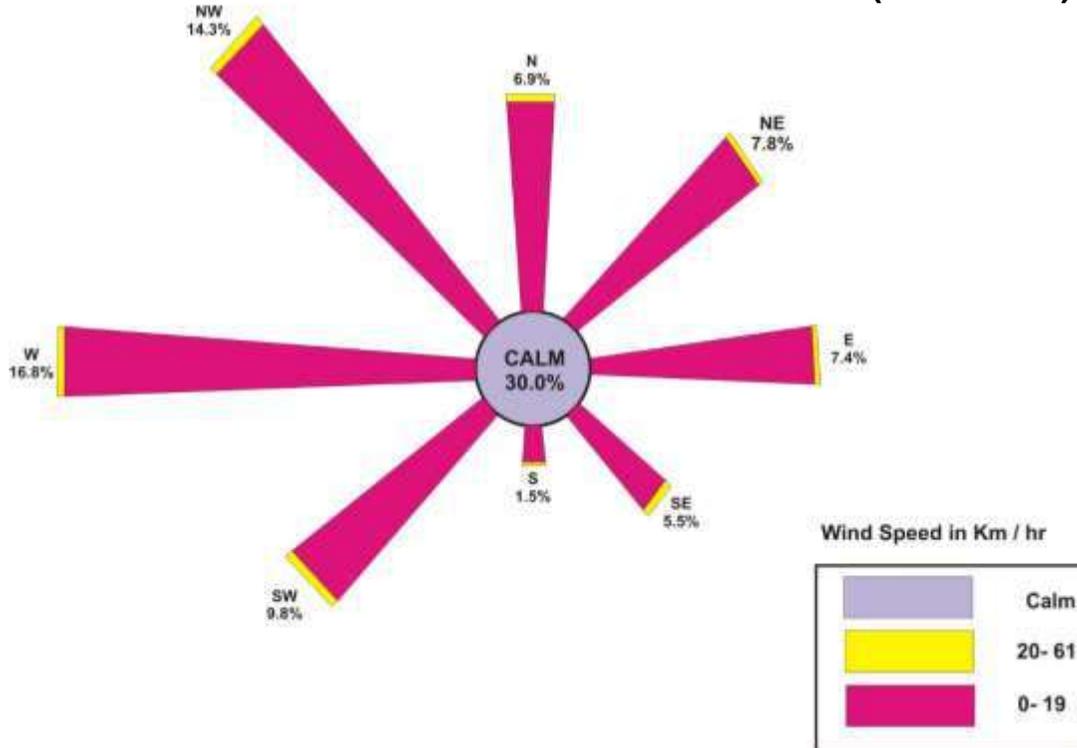


Figure 3-15; Wind Rose Diagram of Post Monsoon Season

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3.4 Micro-Meteorological data

A weather station was installed near the site for hourly monitoring of temperature, humidity, wind speed, wind direction and rainfall data for the month of March 2018 to May 2018. Average data is given below:

Table 3-6; Micro Meteorological Data

Month	Temperature (°C)			Humidity (%)			Wind speed (m/s)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1 st March-31 st March 2018	36.1	15.1	25.5	89.2	17.9	55.6	4.6	0.1	1.3
1 st April-30 th April 2018	43.4	20.3	30.7	93.2	5.2	31.1	4.4	0.1	1.3
1 st May- 31 st May 2018	44.3	21.4	34.1	91.1	5.2	29.7	4.1	0.03	1.3

i) Temperature: Temperature of the area varied from 15.1⁰C to 44.3⁰C. Mean temperature varied from 25.5⁰C to 34.1⁰C.

ii) Relative Humidity: Humidity of the area varied from 5.2% to 93.2%. The mean humidity varied from 29.7 % to 55.6 %.

iii) Wind Speed: Wind speed was in the range of 0.03 m/s to 4.6 m/s. The wind speed was almost close to each other during the whole study period. The average wind speed is 4.1 m/s.

Wind rose Diagram for March to May 2018:

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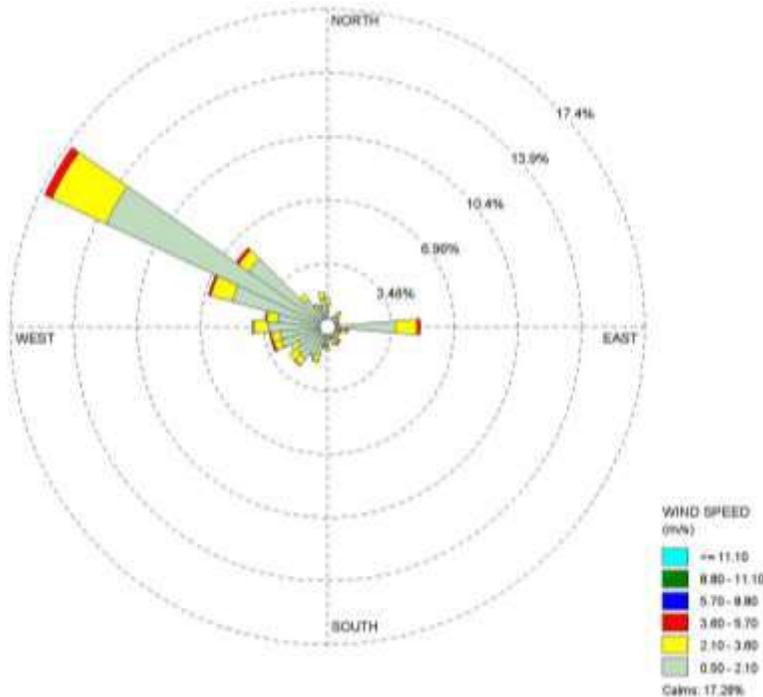


Figure 3-16: Summer Season (March 2018-May 2018) Seasonal Wind rose diagram

3.5 AMBIENT AIR QUALITY

The ambient air quality monitoring was done to assess the ambient air quality. Monitoring was carried out at Six stations for the Summer Season (March 2018 - May 2018).

The guidelines for selections of ambient air monitoring stations given in IS – 5182 part 14, 2000 were followed. These guidelines state that, “when the objective of air sampling is to identify the contribution from specific sources of pollution, the sampling locations should be in upwind and the downwind of such sources”.

The location of air quality monitoring stations should satisfy the following conditions:

1. The site should be representative of the area selected;
2. The station should be set up and operated so as to yield data that can be compared with those from stations within the network; and,
3. Certain physical requirements should be satisfied at the site.

3.5.1 Sampling Stations

To select the air sampling locations, meteorological data with respect to temperature, relative humidity, wind speed and direction plays a vital role. Predominant wind direction plays an

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important role in determining location of monitoring stations. The monitoring station will be located in area that is Downwind from the source. Location of Air sampling stations is shown below:

Table 3-7; Ambient air sampling locations

Station No.	Location	Distance & Direction from project area	Project area / study area	Environmental Sitting
A1	Onsite	West direction of site	Commercial area	Existing Ambient air quality at core zone
A2	Onsite	East direction of site	Commercial area	
A3	Nathupur	1.00 Km, SE	Residential area	Existing Ambient air quality at Buffer Zone
A4	Udyog Vihar	1.23 Km, West	Industrial area	
A5	Dundahera Village	2.16 Km, S	Residential area	
A6	Rajokri Village	2.39 Km, NE	Residential area	

The predominant wind direction is from North West to South East. To study the present ambient air scenario total six locations were selected.

A1: Onsite upwind direction within the site in north direction.

A2: Onsite downwind direction within the site in south direction

A3: Nathupur village is densely populated & located in SE direction of site. The village is well connected to NH-236 is adjacent to the village in east direction.

A4: Udyog Vihar is densely populated & located in SE direction. NH-236 is near site in SE direction

A5: Dundahera village is densely populated & located in South direction of projects site. Old Delhi-Gurgaon road is adjacent to the village in West direction.

A6: Rajokri village is moderately populated & located in NE direction. Village is connected by Sector road which later on merge to NH-8.

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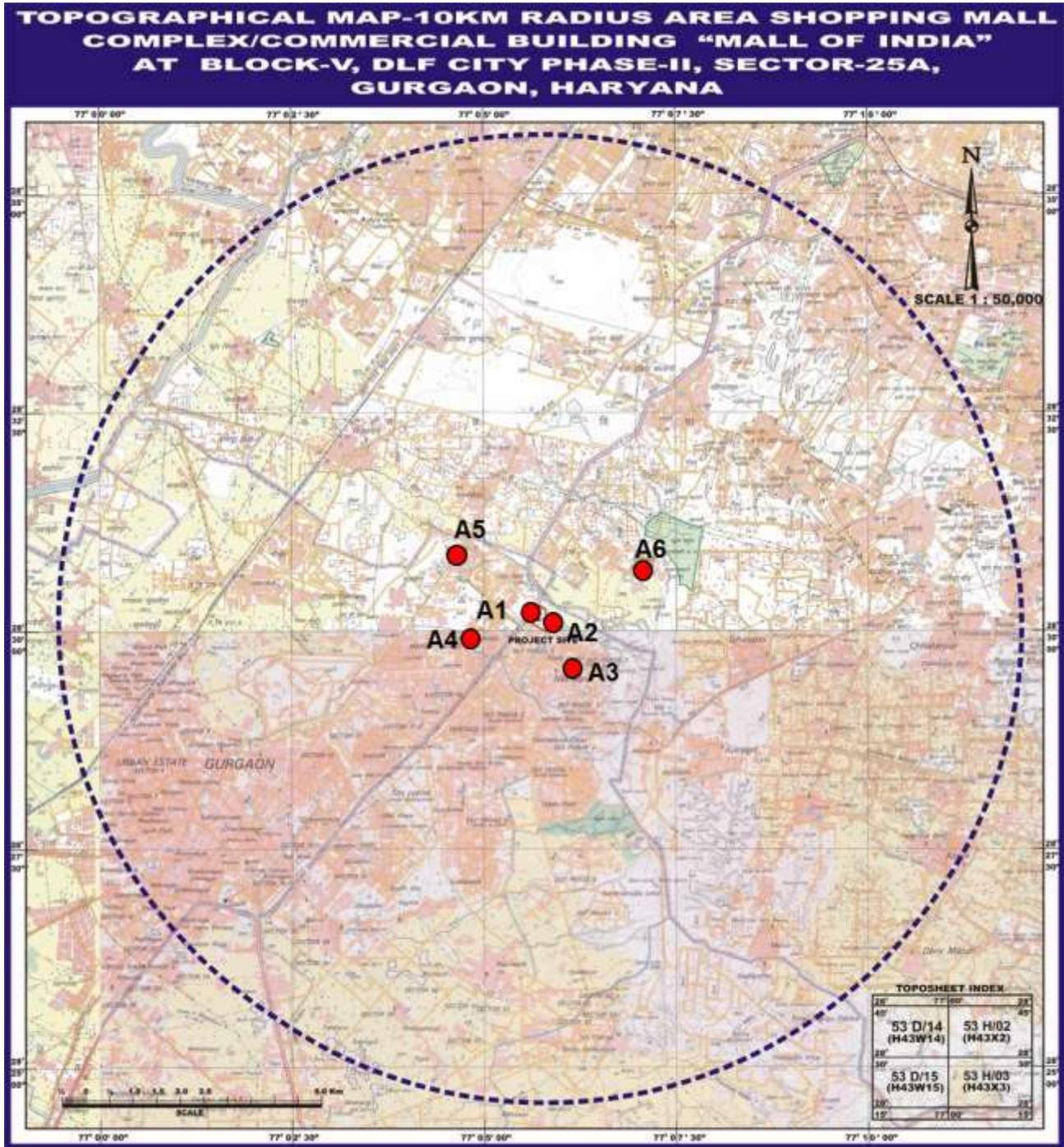


Figure 3-17; Ambient air sampling locations

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3.5.2 Sampling Procedure

Time averaged in – situ sampling was adopted by passing a known volume of air through a trap, and a collecting medium (filter paper and bubbler). Respirable Dust Sampler was used for the purpose.

This procedure was adopted because there are no short-term variations and low concentration of gaseous pollutants was expected.

3.5.3 Analytical methods followed for ambient air quality monitoring:

- I. **Particulate Matter (PM_{2.5}): (USEPA Quality Assurance Hand Book (Vol.II) Part II, Quality Assurance Guideline Document, 2.12):** Particulate Matter (PM_{2.5}): (USEPA Quality Assurance Hand Book (Vol.II) Part II, Quality Assurance Guideline Document, 2.12): Particulate Matter (PM_{2.5}) was analysed by Gravimetric Method. Particulate matter was collected on the 37 mm dia glass micro fiber Filter Paper. PM_{2.5} value is determined from the values of volume of air passes through Ambient Fine Dust Sampler.
- II. **Particulate Matter (PM₁₀) (IS: 5182 Part 23:2006):** Particulate Matter (PM₁₀) was carried out by Respirable Dust sampler as per IS: 5182(Part 23):2006. Particulate matter was collected on the GF/A Filter Paper. Particles with aerodynamics diameter less than the cut-point of the inlet are collected by the filter. The mass of these particles is determined by the difference in filter weight prior to and after sampling.
- III. **Sulphur dioxide (SO₂) (IS: 5182; Part – II – 2001):** Sulphur dioxide is absorbed by aspirating a measured air sample through a solution of Potassium or sodium tetrachloromercurate, TCM. This procedure results in the formation of a dichloro sulphite mercurate complex. The Sulphite Ion produced during sampling is reacted with sulphamic acid, formaldehyde and pararosaniline to form an azo dye and then determined colorimetrically.
- IV. **Nitrogen Oxides (IS: 5182; Part – VI – 2006):** Nitrogen dioxide is collected by `6+- bubbling air through a sodium hydroxide- sodium arsenite solution to form a stable solution of sodium Nitrite. The Nitrite Ion Produced during sampling is reacted with

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hydrogen peroxide, Sulphanilamide and NEDA to form an azodye and then determined calorimetrically.

3.5.4 Ambient Air Quality Results

At each station ambient air quality parameters i.e. PM₁₀, PM_{2.5}, SO₂, NO_x & CO was monitored twice a week for 3 months (March 2018 to May-2018) 24 hourly at uniform intervals.

Table 3-6; Ambient air quality results of PM 2.5& PM 10

Location	Min.	Max.	98 Percentile	Mean	Min.	Max.	98 Percentile	Mean
	PM2.5 - (Standard – 60 µg/m3)				PM10 - (Standard – 100 µg/m3)			
A1	74.8	126.4	125.2	102.8	190.9	331.5	306.8	250.9
A2	71.8	121.3	120.2	98.7	183.3	318.2	294.5	240.9
A3	86.0	145.3	144.0	118.3	219.6	381.2	352.8	288.5
A4	97.2	164.3	162.8	133.7	248.2	430.9	398.8	326.2
A5	93.5	158.0	156.6	128.5	238.7	414.3	383.5	313.6
A6	82.3	139.0	137.8	113.1	210.0	364.6	337.5	276.0

Location	Min.	Max.	98 Percentile	Mean	Min.	Max.	98 Percentile	Mean
	SO2 (Standard – 80 µg/m3)				NOx (Standard – 80 µg/m3)			
A1	6.4	11.3	9.7	8.3	18.6	28.6	27.9	23.7
A2	6.1	10.9	9.3	7.9	17.9	27.5	26.8	22.8
A3	7.3	13.0	11.1	9.5	21.4	32.9	32.1	27.3
A4	8.3	14.7	12.6	10.7	24.2	37.2	36.3	30.9
A5	8.0	14.2	12.1	10.3	23.3	35.8	34.9	29.7
A6	7.0	12.5	10.6	9.1	20.5	31.5	30.7	26.1

Table 3-7; Ambient air quality results of SO2 & NOX

(Source of Standards: G.S.R 826(E) dated 16th November 2009 of MoEF, Laboratory engaged: M/s Perfact Researchers Pvt. Ltd. (NABL Accredited))

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3.5.5 Data Interpretation

The ambient air quality results are summarized in above tables. The results are discussed below:

DATA INTERPRETATION AT CORE ZONE (March 2018 -May 2018):

A1: West direction of site, the mean value of SO₂(8.3 µg/m³) and NO_X (27.9 µg/m³) are within the limits of National ambient air quality standards. However, the mean value of PM₁₀ (250.9 µg/m³) and PM_{2.5} (102.8 µg/m³) are higher than the National ambient air quality standards due to vehicular activity at NH8.

A2: East direction of site, the mean value of SO₂(7.9 µg/m³) and NO_X (26.8 µg/m³) are within the limits of National ambient air quality standards. However, the mean value of PM₁₀ (240.9 µg/m³) and PM_{2.5} (98.7 µg/m³) are higher than the National ambient air quality standards due to vehicular activity at NH8.

Buffer zone air quality:

A3: Nathupur, the mean value of SO₂(11.1 µg/m³) and NO_X (27.3 µg/m³) are within the limits of National ambient air quality standards. However, the mean value of PM₁₀ (288.5 µg/m³) and PM_{2.5} (118.3 µg/m³) are higher than the National ambient air quality standards due to vehicular moment at Nathupur road.

A4: Udyog Vihar, the mean value of SO₂(10.7 µg/m³) and NO_X (30.9 µg/m³) are within the limits of National ambient air quality standards. However, the mean value of PM₁₀ (326.2 µg/m³) and PM_{2.5} (133.7 µg/m³) are higher than the National ambient air quality standards due to vehicular moment at NH-8 and Emissions from surrounding Industries.

A5: Dundahera Village, the mean value of SO₂(10.3 µg/m³) and NO_X (29.7 µg/m³) are within the limits of National ambient air quality standards. However, the mean value of PM₁₀ (313.6 µg/m³) and PM_{2.5} (128.5 µg/m³) are higher than the National ambient air quality standards due to vehicular moment at Dundahera road & Shankar Chowk road.

A6: Rajokri, the mean value of SO₂(8.3 µg/m³) and NO_X (26.1 µg/m³) are within the limits of National ambient air quality standards. However, the mean value of PM₁₀ (276.0 µg/m³) and

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PM2.5 (113.1 µg/m³) are higher than the National ambient air quality standards due to local village activities.

3.6 NOISE QUALITY

Noise Measurement Locations: To assess the noise level of the proposed area, following stations were selected. **Location of Noise sampling stations** are described below, and location are given below.

3.6.1 LOCATIONS OF AMBIENT NOISE SAMPLING STATION

Table 3 19; Ambient Noise sampling stations

Station No.	Location	Distance & Direction from project area	Project area/ study area	Environmental Sitting
N1	Onsite	West Direction	Commercial Area	Existing Ambient Noise quality at core zone
N2	Onsite	East Direction	Commercial Area	
N3	Nathupur	1.00 Km, SE	Residential Area	Existing Ambient Noise quality at Buffer zone
N4	Udyog Vihar	1.23 Km, West	Industrial Area	
N5	Dundahera village	2.16 Km, NW	Residential Area	
N6	Rajokri	2.39 Km, NE	Residential Area	
N7	NH-8	Adjacent to the site in West Direction	Commercial Area	

To study the present ambient Noise scenario total six locations were selected.

N1: Onsite upwind direction within the site in north direction.

N2: Onsite downwind direction within the site in south direction

N3: Nathupur village is densely populated & located in SE direction of site. The village is well connected to NH-236 is adjacent to the village in east direction.

N4: Udyog Vihar is densely populated & located in SE direction. NH-236 is near site in SE direction

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N5: Dundahera village is densely populated & located in South direction of projects site. Old Delhi-Gurgaon road is adjacent to the village in West direction.

N6: Rajokri village is moderately populated & located in NE direction. Village is connected by Sector road which later on merge to NH-8

N7: NH-8 is adjacent to the project site in West direction.

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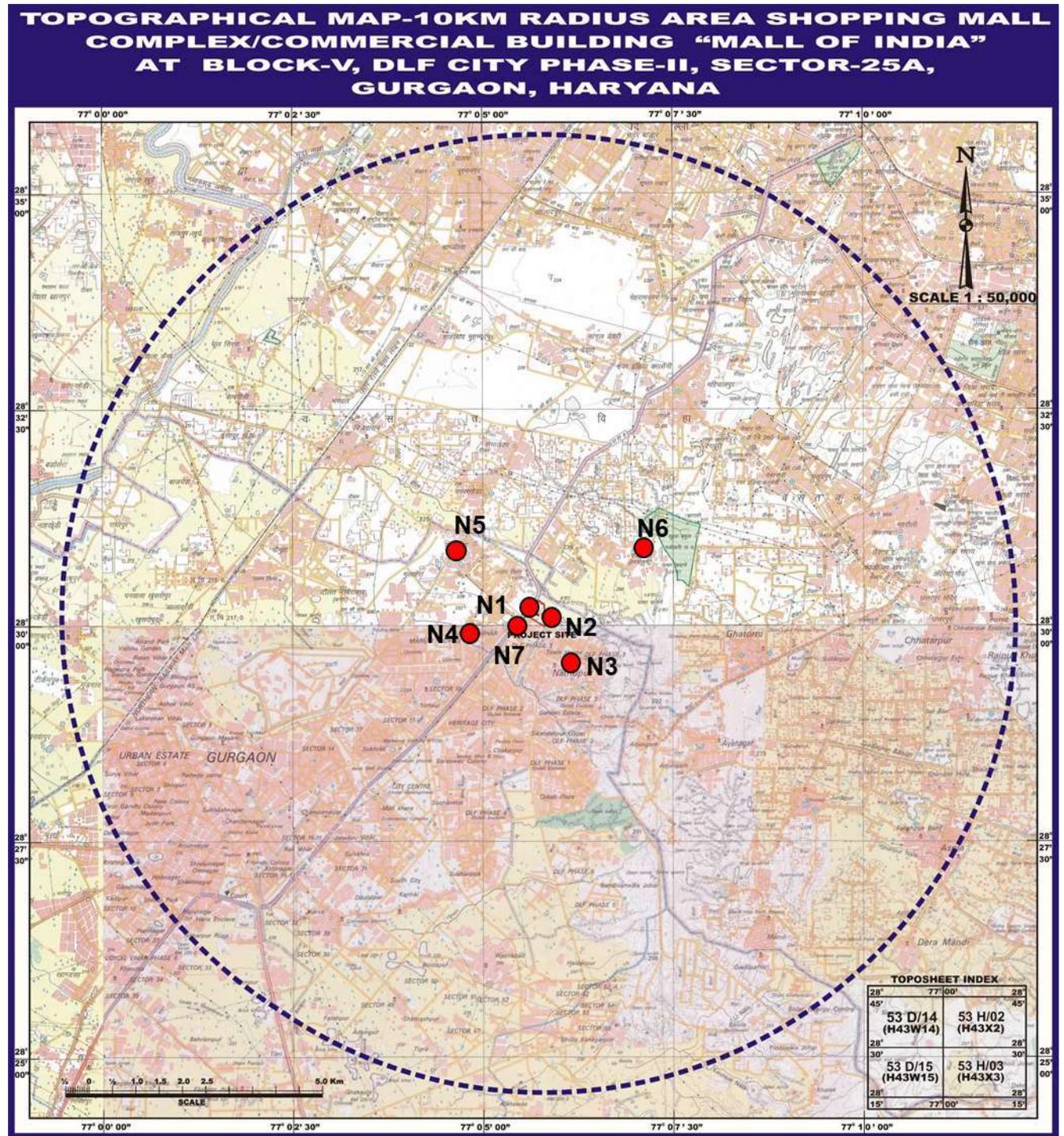
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3.6.2 Noise Sampling Locations



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3.6.3 Methodology

At each station noise level was monitored for 24-hours simultaneously. For each measurement, dB (A) readings was taken for every 15 minutes for 24 hrs once in a season to get Leq values. The results are presented ahead —

Table 3-20; Ambient Noise quality results (March 2018-May 2018)

S. No.	Locations	Project area / study area	Noise Values (Leq in dB(A))		Noise Standard (Leq in dB(A))	
			Day level	Night level	Day time (6am to 10 pm)	Night time (10 pm to 6 am)
Core zone noise quality						
N1	Onsite (NW direction)	Commercial area	60.9	56.2	65	55
N2	Onsite (SE direction)	Commercial area	59.3	56	65	55
Buffer zone noise quality						
N3	Nathupur	Residential Area	55.1	48.1	55	45
N4	Udyog Vihar	Industrial Area	62.7	57.6	75	70
N5	Dundahera village	Residential Area	54.8	48.2	55	45
N6	Rajokri	Residential Area	52.8	46.7	55	45
N7	NH-8	Commercial Area	68.8	60.7	65	55

(Source of Data: CPCB standards for Noise Pollution (Regulation & control) Rules, Laboratory: M/s Perfact Researchers Pvt. Ltd (NABL Accredited)

3.6.4 Data Interpretation:

The Ambient Noise Quality results **March 2018 to May 2018** are summarized above. The results are discussed below:

Core Zone:

N1 & N2: The ambient noise level during day time at the proposed project site varies from 59.3 dB (A) to 60.9 dB (A) which are within the standard limit of Commercial area ~ 65 dB (A). During night, the noise level at the project site ranges from 56 dB (A) to 56.2 dB (A) which is slightly

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higher than the night-time noise standard limit of Commercial area 55.0 dB (A) which is due to vehicular movement at NH-8.

Buffer Zone:

N3: The noise level at Nathupur is 55.1 dB (A) which is within the standard limit of residential area are 55 dB (A). During night, the noise level was recorded 48.1 dB (A) which is slightly above the standard limit of residential area are ~ 45 dB (A). The increased noise level is due to vehicular movement at Nathupur road & NH-236.

N4: The noise level at Udyog Vihar is 62.7 dB (A) which is within the standard limit of Industrial area 75 dB (A). During night, the noise level was recorded 57.6 dB (A) within the standard limit of Industrial area 70 dB (A).

N5: The noise level at Dundahera Village is 54.8 dB (A) which is within the standard limit of residential area 55 dB (A). During night, the noise level was recorded 48.2 dB (A) which is slightly higher than the standard limit of residential area 45 dB (A). The increased noise level is due to the vehicular movement at Dundahera road & Shankar Chowk road.

N6: The noise level at Rajokri is 52.8 dB (A) which is within the standard limit of residential area are ~ 55 dB (A). During night, the noise level was recorded 46.7 dB (A) which is slightly higher than the standard limit of residential area are ~ 45 dB (A). The increased noise level is due to the vehicular movement at Sector road.

N7: The noise level of NH-8 is 68.8 dB (A) which is higher than the standard limit of commercial areas of 65 dB (A). During night, the noise level is 60.7 dB (A) which is also higher than the standard limits of commercial area 55 dB (A) due to vehicular movement.

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3.7 WATER REGIME

3.7.1 Geological Formation

The Gurgaon district is occupied by Quaternary alluvium and Pre-Cambrian meta- sediments of Delhi Super Group. The alluvium comprises of thick beds of fine to coarse-grained sand with alternating layers of thin clays. Delhi super group is represented by Alwar quartzites, mica schists and pegmatite intrusives of the Alwar series and slates of phyllites and quartzites of the sub-recent alluvium and sand dunes.

3.7.2 Hydrogeology

The major part of Gurgaon district is underlain by Quaternary alluvium consisting of sand, clay and silt. The quartzite ridge trending NE-SW is located on the southeast corner, ground water occurs in fractures, joints and crevices. Sandy layers at various depth form major water bearing horizons above the crystalline basement. Ground water in the block occurs in unconfined and semi-confined condition. As per CGWB report, the upper zone of saturation consists of fine sand with silt varying from place to place. The thickness of sandy layer is limited. The draw-down are generally high indicating absence of highly potential ground water bearing aquifers. Tube wells in the depth range of 45 to 90 m bgl have been installed by different agencies in the area. The yield of these tube-wells varies in different areas ranging within 129 to 606 lpm.

The water level ranges between 20 and 30 m in major parts. Deeper water level has been observed in Gurgaon and northern parts of Sohana area, which is due to Urbanization and industrialization in these areas. The seasonal fluctuation is between -3.0 m to +4.10 m.

3.7.3 Ground Water Development-

The water supply to the Gurgaon district is mainly based on groundwater through tube-wells. Entire (100 %) urban population is covered under drinking water supply scheme. The water supply to the villages is catered through the installation of hand pumps by the village households as spot and convenient source of water. The shallow tube-wells for irrigation purpose in the district range from 45 to 70m. deep, tapping the aquifer from 31m to 80 m. with a discharge of 400 to 1000 lpm. According to the CGWB report, the stage of ground water development for the

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Gurgaon block is 308% implying that the buffer zone falls in over-exploited categories. The details of ground water development in the relevant Gurgaon block is shown in the table given ahead –

Sl. No.	Blocks	Net ground water availability (in ham)	Existing Gross Ground Water Draft for irrigation (in ham)	Existing gross Ground Water Draft for domestic and industrial water supply (in ham)	Existing Gross Ground Water Draft for all uses (ham)	Allocation for domestic and industrial requirement supply up to next 25 years (ham)	Net Ground Water Availability for future irrigation development (ham)	Stage of ground water development
1	Gurgaon	7585	6254	17128	23382	17128	-15797	308

The above table clearly depicts that the ground water is under with declining water levels. There is hardly any scope for further ground water development. Various measures should be taken to reduce on the dependence on ground water and to enhance the ground water resources.

3.7.4 Water Conservation & Artificial Recharge-

There is an urgent need to take measures to arrest the decline of ground water level in the district, the rooftop rainwater harvesting technology should be adopted and recharge structures may also be constructed in depression areas where water gets accumulated during rainy season. This will help in enhancing the recharge to ground water reservoir. The abandoned dug wells may be cleaned and should be used for recharging the ground water by utilizing the surface monsoon runoff.

3.8 Water Quality

3.8.1 Sampling stations

To assess the water quality of the proposed area, following 6 stations were selected of these 5 samples were taken, out of which 3 samples were taken from ground & 2 samples were taken from HUDA Supply. 1 sample was taken from Distributry of Najafgarh Drain.

Location of Water sampling stations is described below and location below

Station No.	Location	Distance & Direction from Project area	Environmental Sitting
W1	DLF Cyber City (Drinking water)	0.77 Km, South (Nearby site)	Existing ground water quality at Buffer zone
W2	Nathupur (Bore well)	1.00 Km, SE	

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W3	Udyog Vihar (Bore well)	1.23 Km, West	
W4	Sikandarpur (Borewell)	2.23 Km, SE	
W5	Rajokri (Drinking Water)	2.39 Km, NE	
SW1	Distributry of Najafgarh Drain	0.31 Km, NW	Existing Surface water quality at Buffer zone

Fig 3.13 Sampling locations of water:

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3.8.2 Sampling Frequency and Sampling Techniques:

As per the standard practice grab sampling was done for 5 locations & Composite sampling for Drain near site. Water samples were taken as per the Standard Methods (IS & APHA, 23rd Edition 2017). Necessary precautions were taken for preservation of samples. The physical parameters viz. pH, temperature and conductivity were measured at site using portable water analyser.

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GROUND WATER QUALITY RESULTS (March 2018- May 2018) (Core & Buffer zone)

Table 3 16; Ground water quality results — Core & Buffer Zone								
S. No.	Water Quality Parameters	Unit	IS: 10500 Drinking Water Standards	W1 DLF Cyber City (DW)	W2 Nathupur (BW)	W3 Udyog Vihar (BW)	W4 Sikandarpur (BW)	W5 Rajokri (DW)
1	Colour	Hazen	5	<1	<1	<1	<1	<1
2	Odour	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Turbidity	NTU	5	<1	<1	<1	<1	<1
4	pH Value	--	6.5-8.5	8.14	7.2	7.95	7.7	7.85
5	Temperature	°C	-	23.2	23.1	23.6	23.2	23.8
6	Conductivity	µmhos/cm	-	781.2	2809	5010	4572	471.2
7	Total Dissolved Solids	mg/l	500	306.1	1388.4	2524	2394	230.8
8	Chloride (as Cl)	mg/l	250	45.00	67.00	611.00	731.00	55.00
9	Fluoride (as F)	mg/l	1	0.29	0.5	0.48	0.38	0.47
10	Total Hardness	mg/l	200	128	204	760	520	84
11	Calcium (as Ca)	mg/l	75	33.6	44.8	120	64	16
12	Magnesium (as Mg)	mg/l	30	10.692	22.356	111.78	87.48	10.7
13	Sulphate (as SO ₄)	mg/l	200	12.21	56.62	24.34	27.37	4.25
14	Nitrate Nitrogen	mg/l	45	4.42	34.80	1.43	4.83	2.80
15	Alkalinity	mg/l	200	162	296	116	120	80
17	Sodium (as Na)	mg/l	-	13.66	52.1	89.6	314.5	18.88
18	Potassium (as K)	mg/l	-	4.43	6.4	8.03	3.63	4.59
Total Chromium, Iron, Nitrite Nitrogen, Aluminium, Boron, Nickel, Manganese, Copper, Mercury, Cadmium, phosphate Arsenic, Lead, Selenium & Zinc are below detection level								
Source: Laboratory M/s Perfact Researchers Pvt. Ltd. (NABL Accredited)								

Surface Water Quality

As mentioned above, 1 surface water samples in buffer zone was taken for assessment of surface water quality. The results of the analysis of onsite surface water sample are depicted in the table given ahead —

The surface quality results of a surface stream Drain Near site are given ahead —

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Table 3 17; Surface water quality results — Buffer Zone - Drain Near Site				
S. No.	Parameters	Unit	SW1	EPA standards Discharge
1	Colour	Hazen	1.5	< 1
2	Odour	--	Agreeable	Agreeable
3	Turbidity	NTU	<1	< 1
4	pH Value	--	8.35	5.5-9.0
5	Temperature	0C	23.8	1-50
6	Conductivity	µmhos/cm	974.6	-
7	Total Dissolved Solids	mg/l	523.8	-
8	Chloride (as Cl)	mg/l	64	-
9	Fluoride (as F)	mg/l	0.21	2
10	Total Hardness	mg/l	120	-
11	Calcium (as Ca)	mg/l	19.2	-
12	Magnesium (as Mg)	mg/l	17.496	-
13	Sulphate (as SO4)	mg/l	28.50	-
14	Nitrate Nitrogen	mg/l	9.48	10
15	Alkalinity	mg/l	220	-
16	Phosphate	mg/l	0.476	-
17	Sodium (as Na)	mg/l	42.75	-
18	Potassium (as K)	mg/l	13.8	-
19	BOD	mg/l	<1	30
20	COD	mg/l	8	250
21	Dissolved Oxygen	mg/l	3.4	-
22	Ammonical Nitrogen	mg/l	<1	50
23	Total Suspended Solids	mg/l	3.5	100
24	Oil and Grease	mg/l	-	-
Total Chromium, Iron, Nitrite Nitrogen, Aluminium, Boron, Nickel, Manganese, Copper, Mercury, Cadmium, Arsenic, Lead, Selenium & Zinc are below detection level				
Source: Laboratory M/s Perfect Researchers Pvt. Ltd. (NABL Accredited)				

Data Interpretation:**Results interpretation: Ground water quality at Core & Buffer Zone**

Ground water quality near site shows that the pH is 8.14 which is slightly higher than the drinking water standards. Other parameters for W1 are within the limit of IS:10500 standards of drinking water which shows that water can be used for drinking purpose.

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Buffer zone is taken as the area within 10 km radius from the proposed project site. Collected samples are from ground water sources.

In Buffer zone ground water collected shows that the pH ranges from 7.2 – 7.95.

Parameters for W2, TDS (1388.4 mg/l), Total Hardness (204 mg/l) & Alkalinity (296 mg/l) are higher than the drinking water standards which shows that water can be used for drinking purpose.

Parameters for W3, TDS (2524 mg/l), Chlorine (611 mg/l), Total Hardness (760 mg/l), Calcium (120 mg/l) & Magnesium (111.78 mg/l) are higher than the drinking water standards which shows that water can be used for drinking purpose.

Parameters for W4, TDS (2394 mg/l), Chlorine (731 mg/l), Total Hardness (520 mg/l), & Magnesium (87.48 mg/l) are higher than the drinking water standards which shows that water can be used for drinking purpose.

Parameters for W5, pH is 7.85, Other parameters for W5 are within the limit of IS:10500 standards of drinking water which shows that water can be used for drinking purpose.

Surface water quality results interpretation:

Water collected from SW1 Drain near site shows that colour of the water is 1.5 rest all the parameters are within the EPA Standards.

The Results are further explained in detail:

The Total Dissolved Solids of the sampling location W2 to W4 are found above the drinking water standards (IS:10500) due to increased dissolution or evaporative enrichment. Human activities may also have affected the TDS levels in ground water i.e. application of synthetic fertilizers, manures, and wastewater percolation can all contribute salt to groundwater.

High values of TDS influence the taste, hardness, and corrosive property of the water and causes excessive scaling in water pipes, heaters, boilers, and household appliances.

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The Total Hardness of W2 to W4 is found to be higher than the drinking water standards (IS:10500). The hardness contributed due to seepage and run off from soil. Hardness is normally considered an aesthetic water quality factor because of the unpleasant taste that a high concentration of calcium and other ions give to water. It reduces the ability of soap to produce lather and cause scale formation in pipes and on plumbing fixtures.

The Calcium Concentration in the areas W4 is found to be higher than the drinking water standards (IS:10500). High calcium levels may adversely affect the absorption of essential minerals in the body.

The Magnesium Concentration in the areas, W4 & W5 is found to be higher than the drinking water standards (IS:10500). Magnesium at high concentration contributes to undesirable taste and may have laxative effect.

The Alkalinity in the areas W2 is found to be higher than the drinking water standards (IS:10500) due to Bicarbonate released through dissolution of carbonate minerals, seepage and runoff from soil. Anthropogenic sources of alkalinity include limestone applied to fields to increase soil pH. Other sources like domestic waste can contribute to high alkalinity. High levels of alkalinity lead to objectionable taste, or precipitation of scale in pipes and containers. Chronic effect being necrosis of cells.

3.9 Soil Quality

The soils are sand to loamy sand in sandy plain areas. Sandy loam to clay loam/silty clay loam in alluvial plains, loam sand to loam, calcareous in salt affected plains; silty loam to loam in low lands and loamy sand to loam, calcareous in hills.

3.9.1 Sampling Location

To assess the soil quality and soil profile of the proposed area, 5 different locations were selected.

The locations of Soil sampling stations are described below —

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Table 3 21; Sampling locations for soil quality				
Station No.	Location	Distance & Direction from Project area	Project area / Study area	Environmental Sitting
S1	Onsite	-	Land put to Non-agricultural uses- Commercial	Existing Soil quality - core zone
S2	DLF Cyber City	0.77 Km, South	Permanent Pastures & other grazing land-grass land.	Existing Soil quality at Buffer Zone
S3	Nathupur	1.00 Km, SE	Permanent Pastures & other grazing land-grass land.	
S4	Udyog Vihar	1.23 Km, West	Land put to Non-agricultural uses- Commercial	
S5	Sikandarpur	2.23 Km, SE	Permanent Pastures & other grazing land-grass land.	

Criteria for sampling location selection:

The sampling design is a fundamental part of data collection for scientifically based decision making. A well-developed sampling design plays a critical role in ensuring that data are sufficient to draw the conclusions needed. The samples are collected to determine nutrient content, composition, and other characteristics such as the acidity or pH level.

Figure 3-14; Soil sampling locations

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3.9.2 Sampling Procedure & Analysis

Augur method was used and samples were collected at 15 cm depth after removing the upper crust. Sample from each spot were well mixed with hand on a clean polythene sheet. About 1 kg

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of soil was retained after process of quartering. This sample was kept for some time for air-drying at room temperature, stored in polythene bag with label at the top.

The soil samples were separately analysed for physical and chemical parameters. The physical parameters included – colour, texture, physical composition, moisture content, conductivity, bulk density and porosity. The chemical parameters included 15 parameters, the key parameters included - pH, nitrogen, phosphorus, calcium, magnesium and organic contents. As mentioned above, in all 5 samples (1 from core zone and 4 from buffer zone) were taken.

CORE ZONE & BUFFER ZONE PHYSICAL & CHEMICAL PROPERTIES OF SOIL (MARCH 2018 to MAY 2018):

Table 3-8; CORE & BUFFER ZONE SOIL QUALITY RESULTS

S. No.	Parameter	Onsite	Buffer Zone			
		S1	S2	S3	S4	S5
Physical Properties						
1	Colour	Dark Brown (3/3)	Brown (3/4)	Brown (3/4)	Light Brown (6/6)	Brown (3/4)
2	Texture	Silt Clay	Clay	Silty Clay	Silty Clay	Silty Clay Loam
3	Composition (%)	Sand:4.9; Silt:48.2; Clay:46.9	Sand:2.4; Silt:38.9; Clay:58.7	Sand:15.7; Silt:42.5; Clay:41.7	Sand: 9.1; Silt: 42.3; Clay: 48.6	Sand: 7.9; Silt: 54.7; Clay: 37.4
4	Moisture Content (%)	1.2	1.6	1.5	1.4	1.0
5	Conductivity ($\mu\text{S}/\text{cm}$)	250.8	143.4	190.8	240.8	147.6
Chemical Properties						
1	pH	8.4	7.8	7.6	7.5	8.0
2	Available Nitrogen (mg/kg)	125.5	89.6	103.4	117.3	92.8

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3	Available Phosphorous (mg/kg)	24.9	14.9	19.0	18.1	17.2
4	Available Potassium (mg/kg)	38.1	34.6	132.3	173.6	20.4
5	Calcium (mg/kg)	86.2	96.5	108.7	114.4	59.2
6	Magnesium (mg/kg)	25.3	77.0	29.6	23.2	26.3
7	Organic matter (%)	0.3	0.1	0.03	0.1	0.1
8	Nitrate Nitrogen (mg/kg)	66.3	46.7	55.2	62.5	50.3
9	Chloride (mg/kg)	35.5	79.9	62.1	62.1	8.9
10	Available Sulphur (mg/kg)	6.8	0.2	0.5	0.7	0.4
11	Exchangeable Sodium (mg/kg)	157.2	108.0	212.5	237.4	109.0
12	Cation Exchange Capacity (meq/100gm)	186.1	66.0	87.4	70.4	93.4
13	Bicarbonate(mg/kg)	122.0	36.6	85.4	61.0	85.4
14	Orthophosphate(mg/kg)	0.5	0.5	0.1	0.2	0.3
15	Bulk Density (gm/cc)	1.3	1.3	1.3	1.2	1.2
16	Porosity (%)	26.1	27.2	29.2	28.5	22.2

soil quality results (Core & Buffer zone) (Laboratory: M/s Perfact Researchers Pvt. Ltd (NABL Accredited)

Besides presenting the analysis results, attempt was also made to assess the fertility of soil for on-site sample for the purpose of planning the afforestation/plantation in the core zone.

The results for assessment of soil fertility are depicted in Table No. 3.24 given ahead —

Parameters	Result mg/kg	Low mg/kg	Medium mg/kg	High mg/kg	Remarks
Nitrogen	125.5	<156	157-313	>314	Low
Potassium	38.1	<67	67.1-156	>156	Low
Phosphorus	24.9	<5.5	5.6-13.9	>14.0	High

Source: ICAR, SAU, Laboratory: M/s Perfact Researchers Pvt. Ltd. (NABL Accredited)

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3.9.3 Data Interpretation

Data interpretation of Soil Quality results core & buffer zone - Physical properties

Texture of soil is Silt Clay. Soil texture is one of the most important physical properties of soil that affects its fertility and productivity. The whole soil environment is regulated by soil texture. Soil texture governs most of the properties of the soil, its permeability, its capacity to retain water, its degree of aeration, its ability to make the nutrients stored in the clay-humus complex available to plants, its ability to withstand mechanical working of the top soil, and finally, its ability to support a permanent plant cover. In present case soil texture clearly indicates that the soil in core zone contains high percentage of silt which cannot hold water and nutrients and makes soil less fertile. So, the trees which can grow in these conditions can be planted. There was no significant difference in the physical quality of core and buffer zone samples.

Data interpretation of Soil Quality results core & buffer zone - Chemical Properties

Core Zone:

The result shows that colour is Dark Brown, pH is 8.4. The availability of many plant nutrients in the soil changes as a result of reactions in the soil, which are largely controlled by soil pH.

Amount of primary nutrient like Organic matter 0.3 %, the available nitrogen 125.5 mg/kg is lower in range, available potassium 38.1 mg/kg is lower in range while the available phosphorus 24.9 mg/kg is high in range. Primary nutrient profile shows that soil is average in fertility due to the availability of low amount of nitrogen and potassium. Nitrogen is the most important fertilizer element. Plants respond quickly to application of nitrogen. This element encourages above ground vegetative growth and gives a deep green colour to the leaves & Potassium is the third essential fertilizer element and it is essential for photosynthesis, for protein synthesis, for starch formation and for the translocation of sugars. So, the addition of bio fertilizers will enhance the fertility of soil.

Buffer Zone:

The result shows that texture of soil has silt Loam texture. Colour varies from light Brown to Dark Brown, pH ranges from 7.5 to 8.0. Amount of primary nutrient like Organic matter 0.03% to 0.1%, the available nitrogen 89.6 mg/kg to 117.3 mg/kg is low to high, the available phosphorus is 14.9

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mg/kg to 19.0 mg/kg is high in range while available potassium 20.4 mg/kg to 173.6 mg/kg is lower to high in range, Primary nutrient profile shows that soil is low in fertility due to the availability of low amount of nitrogen, available potassium.

Primary nutrient profile shows average fertile soil along the stretch. Nitrogen is the most important fertilizer element. Plants respond quickly to application of nitrogen. This element encourages above ground vegetative growth and gives a deep green color to the leaves & Potassium is the third essential fertilizer element and it is essential for photosynthesis, for protein synthesis, for starch formation and for the translocation of sugars. So, the addition of bio fertilizers will enhance the fertility of soil.

3.10 Topography

Physiography of the district comprises of hills on one hand and depressions on the other, forming irregular and diverse nature of topography. Two ridges i.e. Firojpur Jhirka Delhi ridge forms the western boundary and Delhi ridge forms the eastern boundary of the district. These hills are northern continuation of Aravalli hills. The highest point in this undulating land is about 298 mRL almost on the periphery of buffer zone in the South-east and the lowest point is 211 mRL situated close to periphery in the north- west. Buffer zone area is by and large flat, excepting mild ruggedness on the south-eastern part. The general slope of buffer zone is towards north. The proposed site or core zone is situated on a land having RL around 240-246 m.

Drainage

The buffer zone is highly cross-crossed by net-work of roads, consequently, disturbing the natural drainage pattern of the area. However, as aforementioned, the by and large slope is towards north. The alluvial plain is formed by the Sahibi River, which is tributary of River Yamuna.

3.11 LAND USE

3.11.1 METHODOLOGY

The land use / land cover map is prepared by adopting the interpretation techniques of the image in conjunction with collateral data such as Satellite Images and field records. Image classification can be done by using visual interpretation techniques and digital classification using any of the image processing software. For the present study–GIS software is used for pre-processing, rectification, enhancements and classifying the satellite data for preparation of land use land cover map.

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The imagery is interpreted and ground checked for corrections. The final map is prepared after field check.

The methodology applied comes under following steps:

Image Extraction:

Satellite imageries for the Area of Interest were created through Image processing software.

Geo-Rectification:

Geometric correction includes correction for geometric distortions due to sensor, earth geometry variations and conversion of the data to real world coordinates (e.g. Latitude and Longitude) on the Earth's surface. The satellite imagery was geometrically rectified with reference to the geo-referenced toposheets and vector data.

Image Enhancement:

Image enhancement is one of the important image processing functions primarily done to improve the appearance of the imagery to assist in visual interpretation and analysis. Various options of image enhancement techniques were tried out to get the best image for visual interpretation. Histogram equalized stretch enhancement techniques was applied to the imagery of the study area for better interpretation of different features in the satellite imagery.

INTERPRETATION OF SATELLITE IMAGE

Visual interpretation technique has been used for digitization of geographical feature for different land use and vegetation cover classes based on spatial pattern of geographic feature. Spectral signature represents various land use class. Image interpretation keys are developed based on image characteristics like color, tone, size, shape, texture, pattern, shadow, association etc, which enables interpretation of satellite images for ground feature. Statics of geographic feature has been developing for impact assessment due to project activity.

RESULTS AND CONCLUSIONS:

The land use/ land cover map has been generated on 1:50,000 scale using digital classification of Imagery. Based on the methodology developed for the present land use/ land cover, categories have been grouped under the following major land use/land cover categories.

Land Use Pattern of Buffer Zone (10 Km Radius)

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S No.	Category	Area in SQ Km	Area In Ha	%age
1	Agriculture Land	74.41	7441.28	22.49
2	Barren Land	2.21	221.25	0.67
3	Built-up, Rural	9.80	979.82	2.96
4	Built-up, Urban	208.88	20887.98	63.13
5	Forest, Deciduous	0.09	8.77	0.03
6	Scrub Land	34.32	3432.49	10.37
7	Water Bodies, Pond/Reservoir	0.09	8.58	0.03
8	Water Bodies, River/Canal	1.06	106.10	0.32
	Total	330.86	33086.28	100.00

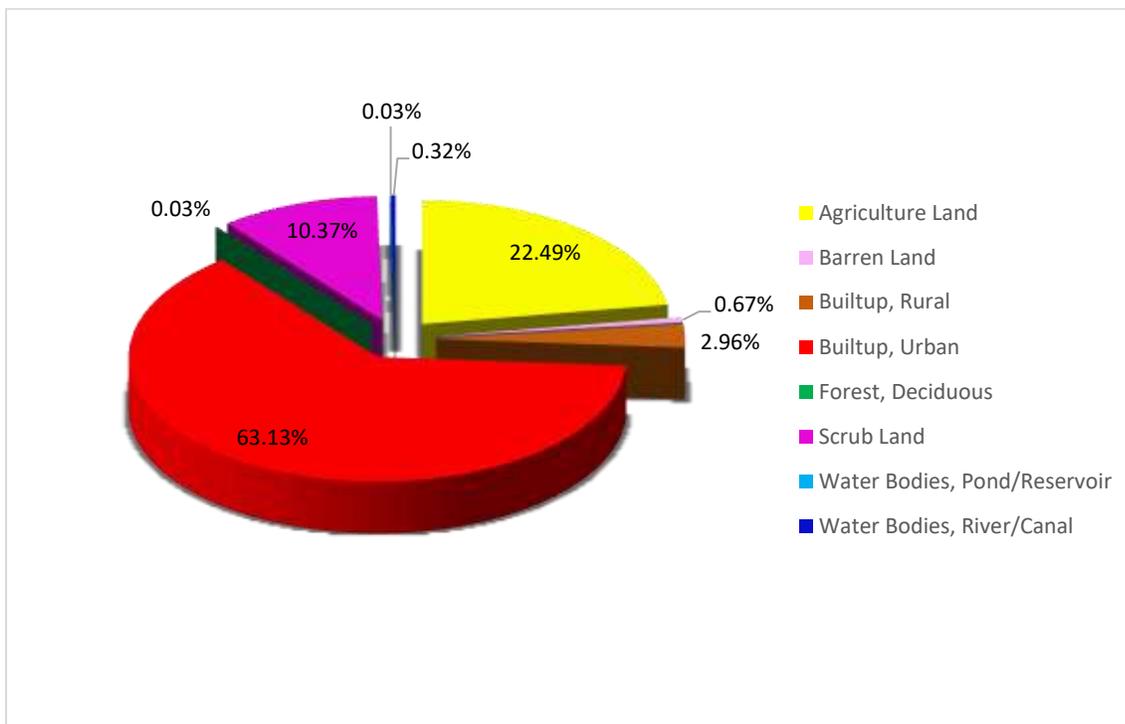


Figure 3.20: Land Use Pattern of the Project Site within 10 km

Conclusion:

- **Built-up:**

Built-up land includes the urban or rural settlements. The built-up locations and their area extent have been extracted from the existing satellite imagery. The major built-up area is about 12821.53 hectares which is 39.19 percent of the total 10 km radius study area.

- **Agricultural land:**

Based on satellite imagery, topographical maps and ground truth the total agricultural area is about 19136.02 hectares which is 58.50 percent of the total study area.

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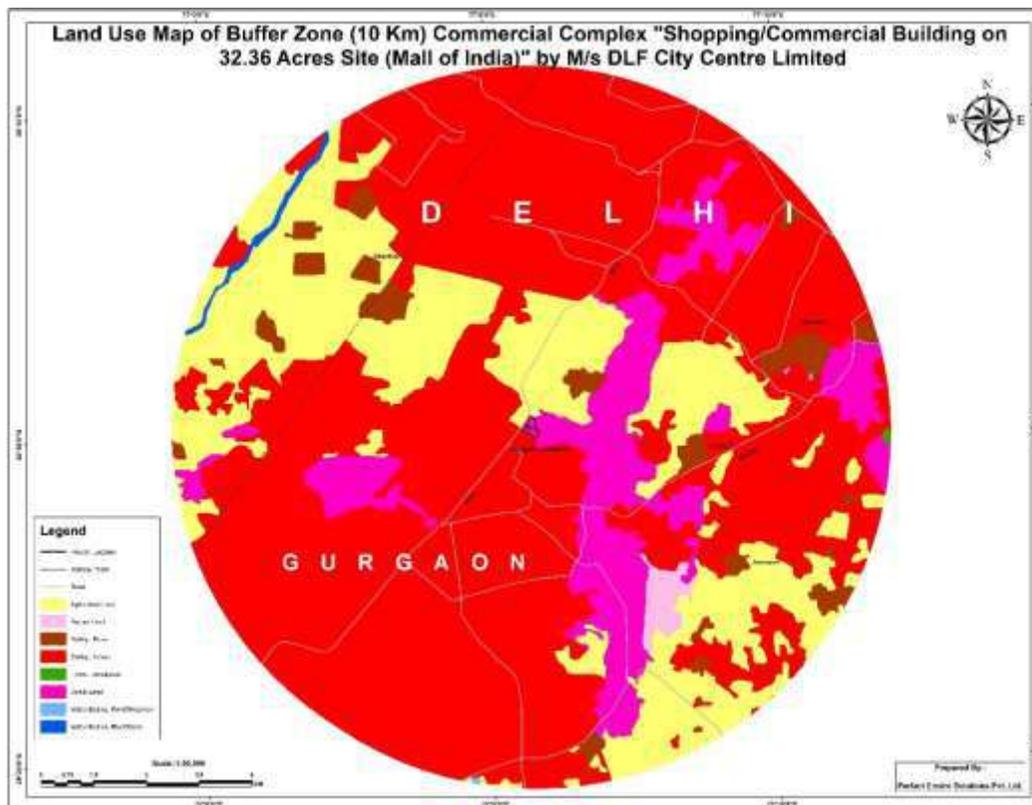
- **Barren land:**

Based on satellite imagery, topographical maps and ground truth waste/ barren land area extent have been extracted. The Barren land area is about 388.78 hectares which is 1.19 percent of the total 10 km radius study area.

- **Water Bodies:**

Based on satellite imagery, topographical maps and ground truth water bodies area extent have been extracted. This area is about 366.95 hectares which is 1.12 percent of the total 10 km radius study area.

Land Use / Land Cover map of the study area



3.12 FLORA AND FAUNA

A natural ecosystem is a structural and functional unit of nature. It has different components, which are interrelated to each other survive by interdependence. An ecosystem has self-sustaining ability and controls the number of organisms at any level by cybernetic rules. The basic purpose to explore the biological environment under Environmental Impact Assessment (EIA) is to assist the decision-making process and to ensure that the project options under consideration

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are environmental-friendly. An ecological survey of the study area was conducted, particularly with reference to listing of species and assessment of the existing baseline ecological conditions in the study area. The main objective of the ecological survey is aimed at assessing the existing flora and fauna components in the study area. Data has been collected through extensive survey of the area with reference to flora and fauna.

With the change in environmental conditions, the vegetation cover as well as animals reflects several changes in its structure, density and composition. The present study was carried out separately for floral and faunal community of core and buffer zone respectively.

3.12.1 Need to study:

The present study was undertaken with the following objectives —

- ☞ To assess the nature and distribution of vegetation in and around the project site (within 10 km. radius)
- ☞ To assess the animal life spectra (within 10 km radius)

To achieve the above objectives, different methods adopted were as follows —

Compilation of secondary data with respect to the study area from published literature and various government agencies;

Generation of primary data by undertaking systematic ecological studies in the area.

3.12.2 Selection of Sampling Location for the study of Flora and Fauna:

Core Zone: Core zone is the area where project is to be constructed. Few trees already exist at site. All the flora and fauna of core zone is recorded during the survey.

Buffer Zone: The zone falling within 10Km radius around the project area. For sampling purpose, buffer zone is further divided in 2 Km and 5 Km. Patches of flora is studied in 2 locations within 2 km, 3 locations within 5 Km. Location of flora is given below. Fauna is recorded randomly.

Sr. No.	Name of Location	Distance & Direction
E1	Nearby Site	0.10 Km, NE
E2	Udyog Vihar Phase V	0.89 Km, West
E3	Nearby Guru Dronacharya Metro	2.10 Km, SSE

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E4	Ghitorni	2.62 Km, East
E5	Dundahera	2.68 Km, NW

Fig. 3.17; Sample Location Map



Cropping Pattern: The main crops grown in nearby areas are bajra, wheat, guar, mustard and paddy. In terms of productivity, Wheat is the predominant crop in Gurgaon, Haryana. Beside these crops fruits like mango, Jamun etc., and vegetables also cultivated.

Introduction of the project highlighting the Environmental sensitivity:

There is only one Protected forest within the study area Rajokari Protected forest (4.3 Km, NE). Water bodies falling in the buffer zone are Najafgarh Drain (9.20 Km, NW), Ganda Nala (9.91 Km, NW). One eco-sensitive zone Asola Bhatti Wildlife Sanctuary falls within the buffer zone (15.6 km, SE).

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Methodology for the study of Flora and Fauna:**Methodology for Study of Flora:**

During the study, the floral composition of the area was evaluated through primary survey. The local inhabitants were also consulted to get extra information. Plant Species are counted and identified within core zone. In buffer zone estimated with the help of line transect and random survey method.

Methodology for study of Fauna

Different species were observed at different timing during the day as given ahead —

Particulars	Time of Observation
Birds	Watched during the dawn
Nocturnal and Burrowing Animals	After Sunset
Animals	Morning and Evening

Description of Core Zone with flora and Fauna Details:

Core Zone: In the Core Zone, place where construction is to be done is partially exuviated land with patches of shrubs, few grasses and weeds species like, *Cynodon dactylon*, *Lantana camara*, *Calotropis gigantean*, *Azadirachta indica*, *prosopis juliflora*, *Delonix regia*, *Cassia fistula*, *Albizia lebbbeck*, *Acacia arabica* etc around periphery.

Buffer Zone: In the Buffer Zone varieties trees, shrubs, herbs, Ornamental plants, weed and grasses such as *Callistemon lanceolatus*, *Azadirachta indica*, *Cynodon dactylon*, *Bougainvillea glabra* etc are there. List of Trees, Shrubs, Herbs Ornamental spices are given below.

Description of Buffer Zone species

The area mainly comprises of habitation. Therefore, the huge diversity in vegetation is not found. Flora (important tree species) of the Buffer zone on the basis of Primary survey and secondary information is given below —

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Table 3.29; Flora (Tree Species) in the Buffer Zone					
S.No	Scientific Name	Common Name	S.No	Scientific Name	Common Name
1	<i>Acacia arabica</i>	Babool	21	<i>Ficus religiosa</i>	Peepal
2	<i>Acacia catechu</i>	Khair	22	<i>Kigelia pinnata</i>	Balamkhir
3	<i>Aegle marmelos</i>	Bael	23	<i>Mangifera indica</i>	Aam
4	<i>Albizia lebbek</i>	Siris	24	<i>Millettia pinnata</i>	Kanji
5	<i>Alstonia scholaris</i>	Chitwan	25	<i>Mimusops elengi</i>	Mahua
6	<i>Azadirachta indica</i>	Neem	26	<i>Moringa pterygosperma</i>	Drumstick
7	<i>Bauhinia purpurea</i>	Kachnar	28	<i>Morus nigra</i>	Shah toot
8	<i>Bombax ceiba</i>	Green semal	29	<i>Neolamarckia cadamba</i>	Kadamba
9	<i>Butea Monosperma</i>	Flame of the forest	30	<i>Polyalthia longifolia</i>	Pseudo Ashok
10	<i>Butia capitata</i>	Butia Palm	31	<i>Populus tremula</i>	Popular
11	<i>Callistemon lanceolatus</i>	Bottle brush	32	<i>Prosopis juliflora</i>	Vilayti Babool
12	<i>Cassia fistula</i>	Amaltas	33	<i>Psidium guajava</i>	Amrud
13	<i>Dalbergia sissoo</i>	Shisham	34	<i>Pterospermum acerifolium</i>	Kanak champa
14	<i>Delonix Regia</i>	Gulmohr	35	<i>Tectona grandis</i>	Sagwan
15	<i>Diospyros melanoxylon</i>	Tendu	36	<i>Terminalia arjuna</i>	Arjun
16	<i>Eucalyptus globulus</i>	Safeda	37	<i>Zizyphus jujube</i>	Ber
17	<i>Eugenia jambolana</i>	Jamun			
18	<i>Ficus benghalensis</i>	Banyan			
19	<i>Ficus glomerata</i>	Gular			
20	<i>Ficus infectoria</i>	Pakad			

Source: Field study by Ecology & Biodiversity team

The commonly occurring shrub, herb and grass species occurring in the buffer zone were also observed through primary survey and secondary study. The important shrub, herb and grass species in the buffer zone are given in the table 3.30 given ahead —

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Table 3.30; Existing Flora (Shrub, Herb and Grass Species) in the Buffer Zone

S.No	Scientific Name	Common Name	S.No	Scientific Name	Common Name
1	<i>Bellis perennis</i>	Guldavri	16	<i>Gardenia jasminoides</i>	Cape jasmine
2	<i>Borassus flabellifer</i>	wine Palm	17	<i>Hamelia patens</i>	Firebush
3	<i>Bougainvillea glabra</i>	Bougainvillea	18	<i>Hibiscus rosa-sinensis</i>	Gudhal
4	<i>Butia capitata</i>	Butia Palm	19	<i>Hippeastrum reginae</i>	Amaryllis
5	<i>Caesalpinia pulcherrima</i>	Peacock flower	20	<i>Nerium indicum</i>	Kaner
6	<i>Calotropis gigantea</i>	Safed aak	21	<i>Ocimum basilicum</i>	Basil
7	<i>Canna indica</i>	Indian shot	22	<i>Phoenix Palm</i>	Date palm
8	<i>Cassia biflora</i>	Cassia	23	<i>Plumeria rubra</i>	Frangipani
9	<i>Cestrum nocturnum</i>	Raatrani	24	<i>Roystonea regia</i>	Royal Palm
10	<i>Combretum indicum</i>	Rangoon creeper	25	<i>Salvia splendens</i>	Scarlet sage
11	<i>Cycas revoluta</i>	Sago palm	26	<i>Thevetia peruviana</i>	Kaner
12	<i>Cynodon dactylon</i>	Doob Grass	27	<i>Thuja occidentalis</i>	Arborvitae
13	<i>Dahlia hortensis</i>	Dahlia			
14	<i>Datura stramonium</i>	Dhatara			
15	<i>Euphorbia pulcherrima</i>	Poinsettia			

Source: Field study by Ecology & Biodiversity team

Description Fauna in the Core Zone

In the core zone where construction is to be done is partially exuviated land, and the area which is already constructed has plantation. During study, it was found that the faunal diversity in the core site was limited to Butterflies, insects, animals like rats, dog, cat etc. and common lizards. List of the fauna observed and reported during field visit is listed below

Table 3.31; Fauna in the Core Zone

Type	Common Name	Scientific Name	Schedule
Reptiles:			
1	Oriental garden lizard	<i>Calotes versicolor</i>	IV
2	House lizards	<i>Hemidactylus flaviviridis</i>	-
Mammals:			

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3	Northern palm squirrel	<i>Funambulus pennanti</i>	IV
4	Cat	<i>Felis catus</i>	
5	Dog	<i>Cuon alpinus</i>	-
Aves:			
6	Crow	<i>Corvus splendens</i>	V
7	Pigeon	<i>Columba livia</i>	IV
8	Red vented Bulbul	<i>Pycnonotus cafer</i>	IV
9	Black Kite	<i>Milvus migrans</i>	IV
10	Asian Koel	<i>Eudynamys scolopaceus</i>	IV
11	Maina	<i>Acridotheres tristis</i>	IV
Insects:			
12	Butterflies	<i>Rhopalocera sp</i>	-
13	Wasps	<i>Vespa orientalis</i>	-
14	Dragonfly	<i>Agrian sp</i>	-
15	Honey Bee	<i>Apis indica</i>	-
16	House fly	<i>Musca domestica</i>	-
(Source: Field survey done by Ecology & Biodiversity team)			

Description Fauna in the Buffer Zone

The buffer zone comprises diversity of animals. Among reptiles' Common Indian garden lizard (*Calotes versicolor*), Common Indian Krait (*Bungarus caeruleus*) are common, Indian Cobra (*Naja naja*) is also reported to have been seen by nearby villagers in the Buffer Zone. Among mammals Rhesus macaque, Northern palm squirrel etc are found. The different fauna reported in the study area are given in Table 3.32 below —

Type	Common Name	Scientific Name	Schedule
Amphibian:			
1	Common Toad	<i>Bufo bufo</i>	IV
2	<i>Rana tigrina</i>	<i>Hoplobatrachus tigerinus</i>	IV
Reptiles:			
3	Oriental garden lizard	<i>Calotes versicolor</i>	IV
4	House lizards	<i>Hemidactylus flaviviridis</i>	-
5	Krait	<i>Bungarus caeruleus</i>	IV
6	Indian Cobra	<i>Naja naja</i>	II
Mammals:			
7	Northern palm squirrel	<i>Funambulus pennanti</i>	IV
8	Rhesus Macaque	<i>Macaca mulatta</i>	II
9	Cat	<i>Felis catus</i>	-
10	Dog	<i>Cuon alpinus</i>	-
11	Cow	<i>Bos taurus</i>	-

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12	Common Mongoose	<i>Herpestes edwardsii</i>	II
Aves:			
13	Baya	<i>Ploceus philippinus</i>	IV
14	Crow	<i>Corvus splendens</i>	V
15	Parrot	<i>Psittacula krameri</i>	IV
16	Pigeon	<i>Columba livia</i>	IV
17	Koel	<i>Eudynamys scolopaceus</i>	IV
18	Peafowl	<i>Pavo cristatus</i>	I
19	Bulbul	<i>Pycnonotus cafer</i>	IV
20	Maina	<i>Acridotheres tristis</i>	IV
21	Wood pecker	<i>Dendrocopos cathpharius</i>	IV
22	Black Kite	<i>Milvus migrans</i>	IV
Insects:			
23	Common Castor	<i>Ariadne merione</i>	-
24	Wasps	<i>Vespa orientalis</i>	-
25	Dragonfly	<i>Agrian sp</i>	-
26	Honey Bee	<i>Apis indica</i>	-
27	House fly	<i>Musca domestica</i>	-
(Source: Field survey done by Ecology & Biodiversity team)			

ENDANGERED SPECIES

There is only one schedule I Species found in buffer zone namely *Pavo cristatus* (Indian Peafowl). Three schedules II species were also reported in the buffer zone namely *Herpestes edwardsii* (Common Mongoose), *Naja naja* (Indian Cobra) and *Macaca mulatta* (Rhesus macaque).

3.13 SOCIO-ECONOMIC SCENARIO**3.13.1 Objective of Study**

The objective of the socio-economic survey is to study the impact of construction on the inhabitants of nearby areas.

Approach & Methodology adopted for conducting Socio Economic Study

The socio-economic survey has been conducted by a team of three persons of M/s Perfect Enviro Solutions Pvt. Ltd. comprising of Mrs. Rachna Bhargava as the team leader, Mr. Pramod and Mr Manoj Pant as team members.

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Study has been conducted based on the details collected through secondary sources (mainly census 2011) and through primary data collected from the site visits. The socio-economic profile has been compiled from census data, 2011, while primary verification has been carried out by using sample survey.

For secondary data, as the study area is large so the study has been carried out at district/ tehsil level representing the whole study area for detailed socio-economic analysis. The analysis was done using data from census of India, 2011 as secondary source and using physical site survey as primary data. For field survey, 5 villages were selected for conducting the survey from nearby areas of the site.

3.13.2 Concept & Definitions

- a. **Study Area:** The study area, also known as impact area has been defined as the sum total of core area and buffer area with a distance of 10 Kilometres from the periphery of the core area. The study area includes all the land marks both natural and manmade, falling therein.
- b. **QoL:** The Quality of Life (QoL) refers to degree to which a person enjoys the important possibilities of his/her life. The 'Possibilities' result from the opportunities and limitations, each person has in his/her life and reflect the interaction of personal and environmental factors. Enjoyment has two components: the experience of satisfaction and the possession or achievement of some characteristic.
- c. **Household:** A group of persons who normally live together and take their meals from a common kitchen are called a household. Persons living in a household may be related or unrelated or a mix of both. However, if a group of related or unrelated persons live in a house but do not take their meals from the common kitchen, then they are not part of a common household. Each such person is treated as a separate household. There may be one member households, two member households or multi-member households.
- d. **Sex Ratio:** Sex ratio is the ratio of females to males in a given population. It is expressed as 'number of females per 1000 males'.
- e. **Literates:** All persons aged 7 years and above who can both read and write with understanding in any language are taken as literate. It is not necessary for a person to

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have received any formal education or passed any minimum educational standard for being treated as literate. People who are blind but can read in Braille are also treated as literates.

- f. **Literacy Rate:** Literacy rate of population is defined as the percentage of literates to the total population aged 7 years and above.
- g. **Labour Force:** The labour force is the number of people employed and unemployed in a geographical entity. The size of the labour force is the sum total of persons employed and unemployed. An unemployed person is defined as a person not employed but actively seeking work. Normally, the labour force of a country consists of everyone of working age (around 14 to 16 years) and below retirement (around 65 years) that are participating workers, that is people actively employed or seeking employment. People not counted under labour force are students, retired persons, stay-at home people, people in prisons, permanently disabled persons and discouraged workers.
- h. **Work:** Work is defined as participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. The work may be part time, full time, or unpaid work in a farm, family enterprise or in any other economic activity.
- i. **Worker:** All persons engaged in 'work' are defined as workers. Persons who are engaged in cultivation or milk production even solely for domestic consumption are also treated as workers.
- j. **Main Workers:** Those workers who had worked for the major part of the reference period (i.e. 6 months or more in the case of a year) are termed as Main Workers.
- k. **Marginal Workers:** Those workers who did not work for the major part of the reference period (i.e. less than 6 months) are termed as Marginal Workers
- l. **Work participation rate:** The work participation rate is the ratio between the labour force and the overall size of their cohort (national population of the same age range). In the present study the work participation rate is defined as the percentage of total workers (main and marginal) to total population.

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Study Area

The study area means villages in 10 km radius of the proposed project. Topographical map and Google earth maps were used to identify the villages/ wards in 10 km radius.

As a matter of fact, maximum surrounding area is part of rural inhabitation as well as urban habitation. The study area of the project falls in three districts viz. Gurgaon, Delhi SW and Delhi S. A total of 9 villages and 24 urban areas in three districts viz Gurgaon, Delhi SW and Delhi S districts fall within the study area. The total population of the study area is 1317312 constituting 304145 households. The sex ratio of the study area as per census 2011 records at 819, whereas the sex ratio of the districts Gurgaon, Delhi SW and Delhi S is 854, 840 & 862 respectively.

List of villages In Study Area

As mentioned above that there are 9 villages and 24 urban areas in Gurgaon, Delhi SW and Delhi S district are falling within study area as given ahead —

A) Rural Areas of District – Gurgaon, Haryana

SL.No.	Name of village	SL.No.	Name of village	SL.No.	Name of village
1	Mohmadheri(58)	3	Bajghera(61)	5	Gual Pahari(77) Part
2	Babupur(60)	4	Tikampur(54)	6	Balola(78)

B) Urban Areas of District – Gurgaon, Haryana

SL. No.	Name of Urban area	SL. No.	Name of Urban Area
1	Gurgaon (M Corp.)	3	Ghata (OG)
2	Daultabad (OG)	4	Naya Behram Pur (OG)

C) Urban Areas of District – Delhi SW, Delhi

SL. No.	Name of Urban area	SL. No.	Name of Urban area	SL. No.	Name of Urban area
1	Chhawala (CT)	4	Malik Pur Kohi alias Rang Puri (CT)	7	Rajokri (CT)
2	Moradabad Pahari (CT)	5	Sambhalka (CT)	8	Ghitorni (CT)
3	Kusum Pur (CT)	6	Kapas Hera (CT)		

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D) Rural Areas of District – Delhi S, Delhi

SL.No.	Name of village	SL.No.	Name of village	SL.No.	Name of village
1	Gadai Pur	2	Satberi	3	Shahur Pur

E) Urban Areas of District – Delhi S, Delhi

SL.No.	Name of village	SL.No.	Name of village	SL.No.	Name of village
1	Aya Nagar (CT)	5	Bhati (CT)	9	Chattar Pur (CT)
2	Jona Pur (CT)	6	Asola (CT)	10	Maidan Garhi (CT)
3	Fateh Pur Beri (CT)	7	Chandan Hola (CT)	11	Raj Pur Khurd (CT)
4	Dera Mandi (CT)	8	Sultan Pur (CT)	12	Neb Sarai (CT)

Demographic Profile of Study Area

A study was undertaken with respect to demography, occupational pattern, literacy rate and other important socio-economic indicators of these villages to reveal the socio-economic structure of the entire project area. The summary is given below:

A. Rural Areas of District – Gurgaon, Haryana

Population

The total rural population of the study area falling in Gurgaon district is 8381 constituting 1450 households. The sex ratio of the study area as per census 2011 records is 891, whereas the sex ratio of the districts involved is 854.

Social Structure

The proportion of Scheduled Caste (SC) rural population within the study area is 14.24% whereas this proportion in the districts involved is 13.07%. The proportion of Scheduled tribe (ST) population within the study area as well as in the districts is Nil.

Literacy

The total proportion of rural literate within the study area is 81.10% of total population. The proportion of Male literates and female literates within the study area is 89.56% and 71.79% respectively.

Detailed Rural profile of study area is given below (source: Census of India, 2011)

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Sl. No.	Name	No. of HHs	Total Population	Sex Ratio	SC%	ST%	Overall Literacy %	Male Literacy %	Female Literacy %
1	Mohmadheri(58)	120	691	909	2.17	0.00	86.29	94.25	77.34
2	Babupur(60)	125	668	976	37.13	0.00	84.38	89.46	79.08
3	Bajghera(61)	670	3640	871	16.92	0.00	81.37	90.10	71.52
4	Tikampur(54)	1	4	0	0.00	0.00	75.00	75.00	0.00
5	Gual Pahari(77) Part	369	2257	913	14.00	0.00	79.73	88.90	69.90
6	Balola(78)	165	1121	862	0.00	0.00	77.69	86.19	68.40
	Total	1450	8381	891	14.26	0.00	81.10	89.56	71.79

It may be seen from the above table that total rural population of the villages of district Gurgaon falling in the study area is 8381, varying between 4 in Tikampur to 3640 in Bajghera. Sex ratio was found to be varying from Nil in Tikampur to as good as 913 in Gual Pahari. The proportion of SC% was observed to be varying between nil in Tikampur to 37.13% in Babupur. The proportion of ST% was observed nil. The overall literacy rates were found to be varying from 75.73% in Tikampur to 86.29% in Mohmadheri. Female literacy rates of Tikampur (0%) & Balola (68.40%) were observed to be minimum across all 6 villages of study area.

B. Urban Areas, District Gurgaon

Population

The total urban population of the study area falling in Gurgaon district is 886519 constituting 208229 households. The sex ratio of the study area as per census 2011 records is 847, whereas the sex ratio of the districts involved is 854.

Social Structure

The proportion of Scheduled Caste (SC) urban population within the study area is 8.58% whereas this proportion in the districts involved is 13.07%. The proportion of Scheduled tribe (ST) population within the study area as well as in the districts is Nil.

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Literacy

The total proportion of urban literate within the study area is 87.49% of total population. The proportion of Male literates and female literates within the study area is 90.94% and 83.40% respectively.

Detailed Urban profile of study area is given below (source: Census of India, 2011)

Sl. No.	Name	Demographic Features of the study area based on Census data 2011							
		No. of HHs	Total Population	Sex Ratio	SC%	ST%	Overall Literacy %	Male Literacy %	Female Literacy %
1	Gurgaon (M Corp.)	206597	876969	846	8.54	0.00	87.52	90.93	83.50
2	Daultabad (OG)	1054	5913	899	17.83	0.00	85.51	93.94	76.26
3	Ghata (OG))	349	2128	914	6.77	0.00	81.17	89.85	72.12
4	Naya Behram Pur (OG)	229	1509	922	0.00	0.00	80.69	87.33	73.30
		208229	886519	847	8.58	0.00	87.49	90.94	83.40

It may be seen from the above table that total urban population of the of district Gurgaon falling in the study area is 886519, varying between 1509 in Naya Behram Pur (OG) to 876969 in Gurgaon (M Corp.) Sex ratio was found to be varying from 846 in Gurgaon (M Corp.) to 922 in Naya Behram Pur (OG). The proportion of SC% was observed to be varying between Nil in Naya Behram Pur (OG) to 17.83% in Daultabad (OG). The proportion of ST% was observed Nil in the district. The overall literacy rates were found to be varying from 80.69% in Naya Behram Pur (OG) to 87.52% in Gurgaon (M.Corp). Female literacy rates of Ghata (OG) (72.12%) were observed to be minimum across all 4 urban areas falling within the study area.

C. Urban Areas, District Delhi SW**Population**

The total urban population of the study area falling in Delhi SW district is 202108 constituting 49751 households. The sex ratio of the study area as per census 2011 records is 673, whereas the sex ratio of the districts involved is 840.

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Social Structure

The proportion of Scheduled Caste (SC) urban population within the study area is 15.73% whereas this proportion in the districts involved in 13.89%. The proportion of Scheduled tribe (ST) population within the study area as well as in the districts is Nil.

Literacy

The total proportion of urban literate within the study area is 85.07% of total population. The proportion of Male literates and female literates within the study area is 90.65% and 76.48% respectively.

Detailed Urban profile of study area is given below (source: Census of India, 2011)

Sl. No.	Name	Demographic Features of the study area based on Census data 2011							
		No. of HHs	Total Population	Sex Ratio	SC%	ST%	Overall Literacy %	Male Literacy %	Female Literacy %
1	Chhawala (CT)	2733	14662	708	10.56	0.00	90.64	95.94	83.17
2	Moradabad Pahari (CT)	5184	21502	892	10.67	0.00	90.49	93.29	87.35
3	Kusum Pur (CT)	3782	17028	857	58.49	0.00	72.68	82.68	60.93
4	Malik Pur Kohi alias Rang Puri (CT)	5412	23726	831	14.53	0.00	88.29	93.88	81.56
5	Sambhalka (CT)	3912	17076	772	15.02	0.00	82.84	88.86	74.85
6	Kapas Hera (CT)	21370	74073	478	8.78	0.00	84.49	89.35	73.13
7	Rajokri (CT)	4430	19148	800	20.21	0.00	84.45	91.89	75.15
8	Ghitorni (CT)	2928	14893	794	10.76	0.00	86.50	93.67	77.46
	Total	49751	202108	673	15.73	0.00	85.07	90.65	76.48

It may be seen from the above table that total urban population of the of district Delhi SW falling in the study area is 202108, varying between 14662 in Chhawala (CT) to 74073 in Kapas Hera (CT). Sex ratio was found to be varying from 478 in Kapas Hera (CT) to 892 in Moradabad Pahari (CT). The proportion of SC% was observed to be varying between 8.78% in Kapas Hera (CT)

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to 58.49% in Kusum Pur (CT). The proportion of ST% was observed Nil in the district. The overall literacy rates were found to be varying from 72.68% in Kusum Pur (CT) to 90.64% in Chhawala CT). Female literacy rates of Kusum Pur (CT) (60.93%) was observed to be minimum across all 8 urban areas falling within the study area.

D. Rural Areas, District Delhi S

Population

The total rural population of the study area falling in Delhi South district is 12193 constituting 2457 households. The sex ratio of the study area as per census 2011 records is 788, whereas the sex ratio of the districts involved is 862.

Social Structure

The proportion of Scheduled Caste (SC) urban population within the study area is 16.15% whereas this proportion in the districts involved is 15.48%. The proportion of Scheduled tribe (ST) population within the study area as well as in the districts is Nil.

Literacy

The total proportion of urban literate within the study area is 78.26% of total population. The proportion of Male literates and female literates within the study area is 85.54% and 68.75% respectively.

Detailed Urban profile of study area is given below (source: Census of India, 2011)

Sl. No.	Name	Demographic Features of the study area based on Census data 2011							
		No. of HHs	Total Population	Sex Ratio	SC%	ST%	Overall Literacy %	Male Literacy %	Female Literacy %
1	Gadai Pur	661	3027	825	29.07	0.00	80.17	85.97	73.04
2	Satberi	1218	6076	762	15.70	0.00	81.60	88.56	72.14
3	Shahur Pur	578	3090	805	4.37	0.00	69.23	78.64	57.21
Total		2457	12193	788	16.15	0.00	78.26	85.54	68.75

It may be seen from the above table that total rural population of the of district Delhi South falling in the study area is 12193, varying between 3027 in Gadai Pur to 6076 in Satberi. Sex ratio was found to be varying from 762 in Satberi to 825 in Gadai Pur. The proportion of SC%

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was observed to be varying between 4.37% in Shahur Pur to 29.07% in Gadai Pur. The proportion of ST% was observed Nil in the district. The overall literacy rates were found to be varying from 69.23% in Shahur Pur to 81.60% in Satberi. Female literacy rates of Shahur Pur (57.21%) were observed to be minimum across all 3 rural areas falling within the study area.

E. Urban Areas, District Delhi S

Population

The total urban population of the study area falling in Delhi South district is 208111 constituting 42258 households. The sex ratio of the study area as per census 2011 records is 856, whereas the sex ratio of the districts involved is 862.

Social Structure

The proportion of Scheduled Caste (SC) urban population within the study area is 14.69% whereas this proportion in the districts involved is 15.48%. The proportion of Scheduled tribe (ST) population within the study area as well as in the districts is Nil.

Literacy

The total proportion of urban literate within the study area is 83.27% of total population. The proportion of Male literates and female literates within the study area is 89.50% and 75.96% respectively.

Detailed Urban profile of study area is given below (source: Census of India, 2011)

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Sl. No	Name	Demographic Features of the study area based on Census data 2011							
		No. of HHs	Total Population	Sex Ratio	SC%	ST%	Overall Literacy %	Male Literacy %	Female Literacy %
1	Aya Nagar (CT)	6757	33123	849	10.98	0.00	88.87	94.27	82.51
2	Jona Pur (CT)	2028	10635	819	24.29	0.00	78.86	86.71	69.18
3	Fateh Pur Beri (CT)	1581	8861	854	10.55	0.00	82.94	89.92	74.97
4	Dera Mandi (CT)	3156	16725	859	22.91	0.00	78.44	86.73	68.84
5	Bhati (CT)	3727	18864	865	12.20	0.00	65.24	75.16	53.66
6	Asola (CT)	2502	13275	854	22.84	0.00	83.13	89.66	75.57
7	Chandan Hola (CT)	1184	6780	821	2.37	0.00	73.45	82.46	62.10
8	Sultan Pur (CT)	3280	15160	849	10.53	0.00	86.28	91.46	80.11
9	Chattar Pur (CT)	9933	46776	853	14.72	0.00	85.74	90.73	79.82
10	Maidan Garhi (CT)	2289	11111	878	24.11	0.00	86.26	91.92	79.76
11	Raj Pur Khurd (CT)	2388	11161	845	7.76	0.00	90.28	95.25	84.34
12	Neb Sarai (CT)	3433	15640	903	13.15	0.00	87.18	91.94	81.87
	Total	42258	208111	856	14.69	0.00	83.27	89.50	75.96

It may be seen from the above table that total urban population of the of district Delhi South falling in the study area is 208111, varying between 6780 in Chandan Hola (CT) to 46776 in Chattar Pur (CT). Sex ratio was found to be varying from 819 in Jona Pur (CT) to 903 in Neb Sarai (CT). The proportion of SC% was observed to be varying between 2.37% in Chandan Hola (CT) to 24.29% in Jona Pur (CT). The proportion of ST% was observed Nil in the district. The overall literacy rates were found to be varying from 65.24% in Bhati (CT) to 90.28% in Raj Pur Khurd (CT). Female literacy rates of Bhati (CT) (53.66%) were observed to be minimum across all 12 urban areas falling within the study area.

Work Profile of Study Area

A. Rural Areas of District Gurgaon

The work profile of the villages of Gurgaon district falling within study area is depicted in the table given below —

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Sl. No.	Name	Total Population	Total Worker %	Total Male Worker %	Total Female Worker %	Total Main Worker %	Total Marginal Worker %
1	Mohmadheri(58)	691	27.50	90.53	9.47	96.32	3.68
2	Babupur(60)	668	25.75	92.44	7.56	86.63	13.37
3	Bajghera(61)	3640	32.99	77.94	22.06	85.01	14.99
4	Tikampur(54)	4	100.00	100.00	0.00	100.00	0.00
5	Gual Pahari(77) Part	2257	26.81	83.14	16.86	68.10	31.90
6	Balola(78)	1121	21.32	98.33	1.67	100.00	0.00
		8381	28.77	83.33	16.67	83.28	16.72

It may be observed from the table above that the proportion of the total workers is 28.77% of the total population of the study area. The proportion was found to be varying from 21.32% in Balola to 100% in Tikampur. The work force was mainly constituted by males to the tune of 83.33%. It was also observed an overwhelming majority 83.28% of the workers were main worker.

B. Urban Areas of District Gurgaon

The work profile of the urban areas of Gurgaon district falling within study area is depicted in the table given below —

Sl. No.	Name	Total Population	Total Worker %	Total Male Worker %	Total Female Worker %	Total Main Worker %	Total Marginal Worker %
1	Gurgaon (M Corp.)	87696	38.21	79.24	20.76	94.64	5.36
2	Daultabad (OG)	5913	24.69	95.82	4.18	97.74	2.26
3	Ghata (OG)	2128	27.21	80.83	19.17	78.24	21.76
4	Naya Behram Pur (OG)	1509	24.45	95.12	4.88	94.58	5.42
		88651	38.07	79.33	20.67	94.63	5.37

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It may be observed from the table above that the proportion of the total workers is 38.07% of the total population of the study area. The proportion was found to be varying from 24.45% in Naya Behram Pur (OG) to 38.21% in Gurgaon (M Corp). The work force was mainly constituted by males to the tune of 79.33%. It was also observed an overwhelming majority 94.63% of the workers were main worker.

C. Urban Areas of District Delhi SW

The work profile of the urban areas of Delhi SW district falling within study area is depicted in the table given below —

Sl. No.	Name	Total Population	Total Worker %	Total Male Worker %	Total Female Worker %	Total Main Worker %	Total Marginal Worker %
1	Chhawala (CT)	14662	36.52	90.53	9.47	93.73	6.27
2	Moradabad Pahari (CT)	21502	41.12	72.73	27.27	93.78	6.22
3	Kusum Pur (CT)	17028	37.02	77.76	22.24	84.50	15.50
4	Malik Pur Kohi alias Rang Puri (CT)	23726	32.24	87.95	12.05	96.31	3.69
5	Sambhalka (CT)	17076	34.11	92.22	7.78	95.11	4.89
6	Kapas Hera (CT)	74073	54.16	93.14	6.86	95.55	4.45
7	Rajokri (CT)	19148	34.06	87.78	12.22	88.85	11.15
8	Ghitorni (CT)	14893	33.36	89.62	10.38	92.47	7.53
		202108	42.34	88.60	11.40	93.79	6.21

It may be observed from the table above that the proportion of the total workers is 42.34% of the total population of the study area. The proportion was found to be varying from 32.24% in Malik Pur Kohi alias Rang Puri (CT) to 41.12% in Moradabad Pahari (CT). The work force was mainly constituted by males to the tune of 88.60%. It was also observed an overwhelming majority 93.79% of the workers were main worker.

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D. Rural Areas of District Delhi South

The work profile of the rural areas of Delhi South district falling within study area is depicted in the table given below —

Sl. No.	Name	Total Population	Total Worker %	Total Male Worker %	Total Female Worker %	Total Main Worker %	Total Marginal Worker %
1	Gadai Pur	3027	42.88	82.59	17.41	92.60	7.40
2	Satberi	6076	34.28	83.49	16.51	91.60	8.40
3	Shahur Pur	3090	27.35	91.36	8.64	94.20	5.80
		12193	34.66	84.78	15.22	92.43	7.57

It may be observed from the table above that the proportion of the total workers is 34.66% of the total population of the study area. The proportion was found to be varying from 27.35% in Shahur Pur to 42.88% in Gadai Pur. The work force was mainly constituted by males to the tune of 84.78%. It was also observed an overwhelming majority 92.43% of the workers were main worker.

E. Urban Areas of District Delhi South

The work profile of the urban areas of Delhi South district falling within study area is depicted in the table given below —

Sl. No.	Name	Total Population	Total Worker %	Total Male Worker %	Total Female Worker %	Total Main Worker %	Total Marginal Worker %
1	Aya Nagar (CT)	33123	31.75	87.38	12.62	95.79	4.21
2	Jona Pur (CT)	10635	31.14	87.47	12.53	94.81	5.19
3	Fateh Pur Beri (CT)	8861	28.97	88.66	11.34	92.60	7.40
4	Dera Mandi (CT)	16725	26.30	91.54	8.46	92.61	7.39
5	Bhati (CT)	18864	31.90	79.21	20.79	87.94	12.06
6	Asola (CT)	13275	30.72	86.05	13.95	93.18	6.82

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Sl. No.	Name	Total Population	Total Worker %	Total Male Worker %	Total Female Worker %	Total Main Worker %	Total Marginal Worker %
7	Chandan Hola (CT)	6780	30.35	90.57	9.43	94.12	5.88
8	Sultan Pur (CT)	15160	33.68	88.11	11.89	95.16	4.84
9	Chattar Pur (CT)	46776	34.03	85.38	14.62	95.60	4.40
10	Maidan Garhi (CT)	11111	34.20	80.47	19.53	91.53	8.47
11	Raj Pur Khurd (CT)	11161	33.32	85.59	14.41	92.01	7.99
12	Neb Sarai (CT)	15640	33.73	81.31	18.69	96.42	3.58
		208111	32.08	85.59	14.41	93.99	6.01

It may be observed from the table above that the proportion of the total workers is 32.08% of the total population of the study area. The proportion was found to be varying from 26.30% in Dera Mandi (CT) to 34.20% in Maidan Garhi (CT). The work force was mainly constituted by males to the tune of 85.59%. It was also observed an overwhelming majority 93.99% of the workers were main worker.

PRIMARY DATA COLLECTION

The project lies in Punjab. The primary survey for nearby 7 villages has been conducted. These villages are the major habitats which lies in 2–5 Km radius of the project site, which will have positive and negative impact after occupancy and development of the project.

The process of collecting data using primary survey data is as follows:

- (i) Identify the villages to be surveyed.
- (ii) Select one village.
- (iii) Check the number of PAF in the village due to project.
- (iv) PAF to be surveyed individually
- (v) Indirect affected villages to be surveyed using focus group discussion method having 15-20 persons in a group

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- (vi) Physical survey for sanitation /drinking water facilities, banks, physical health checks, availability of primary health centres/ dispensary/ hospitals, road conditions, educational facilities, source of income, average annual income of the villagers.

The summary of socio economic survey conducted in these villages is given below:

Primary Field Survey

A socioeconomic survey within the Buffer Zone was conducted. Survey was conducted in 5 villages in the buffer zone.

The result of the survey conducted are summarized as below:

MICRO LEVEL VILLAGE INFORMATION

Micro level village information based on field survey & census data 2011 Project Name-DLF mall of india gurgaon								
S. No.	Parameter	Name of the Villages						
		Dundahera village	Mullahera village	Sarhaul village	Chakkarpur village	Sukhrali village	Rajokri village	Sikanderpur
1	House Hold Approx	5000	1500	2800	1500	2600	1500	2400
2	Occupation or source of income	Service,labour,pvt job,pvt business	Service,labour,pvt job,pvt business	Service,labour,pvt job,pvt business	Service,labour,pvt job,pvt business	Service,labour,pvt job,pvt business	labour,Service,Pvt.business,pvt job,	Service/labour/Pvt.business,pvt job
3	Population	35000	10000	34000	9800	19000	12000	25000
4	%Working status							
	Labour	10	15	10	15	10	15	10
	Private Job	60	65	60	62	55	55	60
	Govt. Job	5	5	7	3	5	10	5
	Self Employed	25	15	23	20	30	20	25
5	School	Anganwadi,Primary school, Middle school high school	Anganwadi,Primary school,Middle school high school	Anganwadi,Primary school,Middle school high school,Senior Secondary school	Anganwadi,Primary school, Middle school high school ,Senior Secondary school	Anganwadi,Primary school, Middle school high school	Anganwadi,Primary school, Middle school high school, Senior Secondary school	Primary School, middle school,Anganwadi
6	Hospital	yes	pvt clinic,asha workers	yes	yes	yes	Dispensary,pvt clinic	yes
7	Post office	yes	nil	nil	nil	yes	yes	yes
8	Bank	yes	yes	yes	yes	yes	yes	yes
9	Market	yes	local market	local market	market	local market	local market	market
10	Electricity	yes	YES	yes	yes	yes	Yes	yes
11	Source of water	Supply,borewell	Supply,borewell	Supply,borewell	Supply,borewell	Supply,borewell	supply	supply
12	Toilet Facilities	100	100	100	100	100	100	100
13	Transport System	Bi cycles, scooters,cars,tempo	Bi cycles, scooters,cars,tempo	Bi cycles, scooters,cars,tempo	Bi cycles, scooters,cars,tempo	Bi cycles, scooters,cors,tempo	Bi cycles, scooters,cors,tempo	Bi cycles, scooters,cors,tempo
14	APL	75	65	70	75	70	70	75
15	BPL	25	35	30	25	30	30	25

MICRO LEVEL VILLAGE INFORMATION**(SOURCE - FIELD SURVEY)**

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Parameter studied	Data Interpretation
Housing	The housing condition in the buffer zone is as follows: <ul style="list-style-type: none"> • Pucca houses – 100% • Semi pucca houses – NIL • Kuccha houses – NIL
Electricity	The availability of electricity connection in the buffer zone is as follows: <ul style="list-style-type: none"> • Households having Electric connection – 100% • Households not having Electric connection – 0%
Economic Category Composition	The Proportion of economic status in the buffer zone is as follows: <ul style="list-style-type: none"> • Households above poverty line – 75% • Households below poverty line – 25%
Drinking Water	As the project falls in NCR region, water is available in the area: <ul style="list-style-type: none"> • Households with supply through pipe line – 90% • Households using community/handpump –10%
Education status	As the project falls in NCR region, mostly adults are uneducated and Children are educated: <ul style="list-style-type: none"> • Adults Educated – 50% • Kids Educated – 95%
Basic Amenities	Banks, Hospital, Post Office, Market, Schools, Toilets exists in the surrounding areas

These figures imply that much of the study area's working population has year-round occupation /sources of livelihood. Interviews with stakeholders corroborated this fact.

3.14 TRAFFIC DENSITY

Preliminary Traffic Assessment: The estimated traffic in the proposed project is driven by the no. of trips within the project area. The estimated traffic is then appropriately assigned on the networks to obtain the quantum of traffic that will be handled by the road network. The following key issues are identified by the Government:

- Strengthening and development of system of roads.
- Development of alternate road link.
- Developing of parking facilities.

With an ever-increasing urbanization, road traffic is also increasing.

The traffic study was done in the nearby road (dated 15.03.2018 i.e Tuesday & 16.03.2018 i.e. Wednesday) ascertain the present traffic was on the road and thereafter impact be because of addition of traffic due to the Commercial Project "Mall of India"

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PCU values are used to convert various vehicles in to one standard vehicles i.e. Passenger car units (PCU). The PCU values as per IRC are as given below:

PCU values are used to convert various vehicles in to one standard vehicles *i.e.* Passenger car units (PCU). The PCU values as per IRC are as given below:

Table 3.46; PCU values of various vehicles					
S. No.	Vehicle Type	PCU Value	S. No.	Vehicle Type	PCU Value
1	Car	1	5	LCV	2
2	Two-wheeler	0.5	6	Tractor and Trailor	5
3	Private bus	2.2	7	Cycle rickshaw	0.5
4	Auto	1.2			

The basis of conversion factor as per IRC 106, 1990, is given ahead —

Table 3.47; Conversion Factor (Ref: IRC 106, 1990)			
S.No	LOS Value (Ratio of V:C) (V/C)	Category	Inference based on IRC 106: 1990
1	0-0.2	A	Represents a condition of free flow; individual users are generally unaffected by others in the traffic and this condition is generally considered in the Excellent Category.
2	0.2-0.4	B	Represents a condition of stable flow; individual users have a level of comfort and convenience but less than that of A.
3	0.4-0.6	C	Represents a condition of zonal stable flow; individual users are starting in a bit of discomfort; users start to feel inconvenience due to presence of other users on the road. General level of discomfort increases and there is a noticeable decline in convenience.
4	0.6-0.8	D	Represents the level of stable flow; Level of comfort of users is poor and discomfort is significant in the flow of traffic. This category traffic streams are extremely susceptible to traffic problems.
5	0.8-1	E	Represents operating conditions close to capacity level; freedom to traffic stream is low and the speed is relatively uniform but very less. Comfort and convenience is relatively poor and discomfort is visible.
6	1 or above	F	Breakdown Flow; These streams often and broken down, susceptible to long delays and therefore there is huge discomfort in these streams.

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3.14.1 Methodology

Traffic was monitored for 17-hours between 6:00 to 23:00 for 2 days (dated 15.03.2018 i.e Tuesday & 16.03.2018 i.e. Wednesday) Assumptions were taken on the basis of 2 days baseline monitoring. Proposed site traffic will be merged to approach road & approach road traffic to NH-8

Table 3.48; Traffic Analysis: NH-8, 8 Lane -35 Meter (Delhi-Jaipur Road)						
Hours	Baseline					
	Car	Bus/ Truck	Two-Wheeler	Others/ Auto	PCU /Hr	LOS Baseline
06:00- 07:00	2945	421	1514	142	5768	0.561
07:00- 08:00	3109	290	1580	164	5399	0.525
08:00-09:00	3294	202	1942	180	5388	0.524
09:00-10:00	3348	169	2029	196	5359	0.521
10:00-11:00	3230	173	2039	221	5293	0.515
11:00-12:00	2930	347	1759	211	5621	0.546
12:00-13:00	2723	450	1562	270	5853	0.569
13:00-14:00	2837	439	1849	319	6120	0.595
14:00-15:00	2642	315	1609	291	5213	0.507
15:00-16:00	2723	248	1512	320	4978	0.484
16:00-17:00	2736	284	1620	289	5168	0.502
17:00-18:00	3011	279	1670	266	5421	0.527
18:00-19:00	3380	293	1760	293	5929	0.576
19:00-20:00	3260	252	1911	320	5734	0.557
20:00-21:00	3292	239	1667	268	5521	0.537
21:00-22:00	2753	423	1577	203	5688	0.553
22:00-23:00	2207	461	1101	252	5133	0.499
Average	2966	311	1688	247	5505	0.54

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Hours	Baseline					
	Car	Bus/ Truck	Two-Wheeler	Others/ Auto	PCU /Hr	LOS Baseline
06:00- 07:00	150	30	120	110	408	0.19
07:00- 08:00	204	24	157	125	485	0.23
08:00-09:00	246	14	180	129	522	0.24
09:00-10:00	270	10	186	123	533	0.25
10:00-11:00	210	8	150	102	425	0.20
11:00-12:00	204	10	149	111	434	0.20
12:00-13:00	197	14	137	121	441	0.21
13:00-14:00	200	16	146	100	427	0.20
14:00-15:00	192	24	140	102	437	0.20
15:00-16:00	188	22	143	98	425	0.20
16:00-17:00	182	12	149	95	397	0.19
17:00-18:00	172	20	150	125	441	0.21
18:00-19:00	187	22	149	103	433	0.20
19:00-20:00	174	20	146	120	435	0.20
20:00-21:00	195	18	150	122	457	0.21
21:00-22:00	200	20	152	124	468	0.22
22:00-23:00	196	26	150	112	463	0.22
Average	198	18	150	113	449	0.21

Parameter	Existing (NH-8)	Parameter	Existing (Moulsari Ave Road)
WIDTH (m)	35	WIDTH (m)	9.0
Carrying Capacity (PCU/ Hr)	10286	Carrying Capacity (PCU/ Hr)	2143
Traffic (PCU/Hr)	5505	Traffic (PCU/Hr)	449
LOS	0.54	LOS	0.21
Category	C	Category	A

Project Proponent:

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Environment Consultant:

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Chapter 4: ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

Prediction of impacts is the most important component in the Environmental Impact Assessment studies. Several scientific techniques and methodologies are available to predict impacts of developmental activities on physical, ecological and socio-economic environments. Such predictions are superimposed over the baseline (pre-project) status of environmental quality to derive the ultimate (post-project) scenario of environmental conditions. The prediction of impacts helps to minimize the adverse impacts on environmental quality during pre and post project execution.

Generally, the environmental impacts can be categorized as either primary or secondary. Primary impacts are those, which are attributed directly by the project and secondary impacts are those, which are indirectly induced and typically include the associated investment and changed patterns of social and economic activities by the proposed actions.

For the proposed project, the impacts assessment shall be performed in following steps:

- Identification of interactions between activities and environmental receptors.
- Identification of potentially significant environmental impacts.

4.1 LAND ENVIRONMENT

4.1.1 IMPACT ON LAND USE AND AESTHETICS

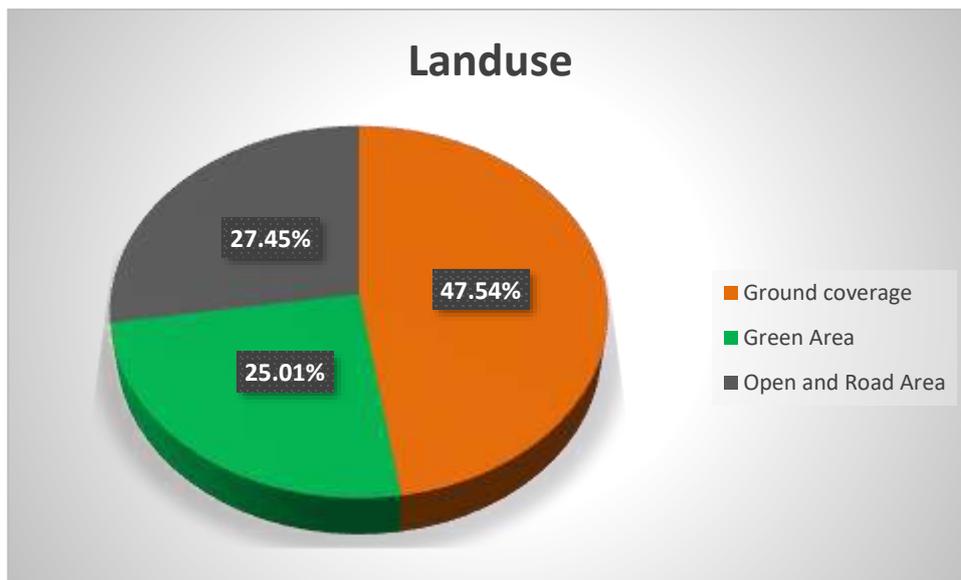
The project is proposed to be located at 28°30'10.14"N & 77° 5'44.25"E respectively. Construction work has not started yet. Proposed land is vacant with very little vegetation. The highest point in this undulating land is about 298 mRL almost on the periphery of buffer zone in the South-east and the lowest point is 211 mRL situated close to periphery in the north- west. Buffer zone area is by and large flat, excepting mild ruggedness on the south-eastern part. The general slope of buffer zone is towards north. The proposed site or core zone is situated on a land having RL around 240-246 m.

Partly excavation has already been done. Therefore, the natural contour has already been changed.

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Proposed Land Use of the project:

Land use	DETAILS	
	Area	Percentage
Ground Coverage	62262.72 m ²	47.54%
Road Area/unpaved open area & other	35938.912 m ²	27.45%
Green Area	32754.438 m ²	25.01%
Total	130956.07 m²	100.00%



During Construction:

Impact	Mitigation
The land use will not be changed.	<ul style="list-style-type: none"> The project site is earmarked for commercial use as a part of Residential colony as per approved layout plan of DLF Phase III. and the land will be developed into Shopping/Commercial building. Hence, there will be no change in landuse.
Change of natural contour levels.	<ul style="list-style-type: none"> As partly excavation has been done hence the contour level has been changed. For further Construction, site will be

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<p>Additional internal roads shall be, however, developed within project area for vehicular movement.</p>	<p>designed to minimize the disposal of soil and removal of vegetation. Artificial contours shall be maintained</p> <ul style="list-style-type: none"> 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, the excavated soil shall be utilised for landscaping, back-filling & construction of internal roads. After complete Artificial contour shall be maintained. <p>Roads of appropriate width shall be provided.</p>
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During operation:

- Construction will be done as per zoning and building by-laws. There will be no impact on the land use during operation phase.

4.1.2 IMPACTS ON TOPOGRAPHY AND GEOLOGY

The survey conducted at site shows that land is a flat land with level difference of 6 m, hence, the topography of the area would not be affected by this project and the construction of the building shall be done as per approved building plan.

During Construction

Impact	Mitigation
<p>The activities such as filling and civil & mechanical construction activities are mainly confined to operating boundary of proposed project.</p> <p>Impact on natural contour due to the construction work.</p>	<p>Land clearing except few bushes and grasses will not be required.</p> <p>As partly excavation has been done hence the contour level has been changed. For further construction site will be designed to minimize the disposal of soil and removal of vegetation, the impact will be confined to limited area which is very small.</p>

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	Manual level difference will be maintained for the natural flow of drainage.
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During operation:

- There will be no impact during operation phase.

4.1.3 IMPACT ON SOIL

Impact on soil owing to the construction and project activity at site will include soil erosion, compaction, physical and chemical desegregation and pollution of soil. Erosion of soil may occur on account of large-scale excavation activity for construction. The results of soil fertility in Chapter-3 shows that the land is average in fertility, hence vegetation at site is sparse.

DURING CONSTRUCTION

Impact (During Construction)	Mitigation (During Construction)
Use of heavy machinery and storage of material compact the soil. Compaction of soil as well as mixing of construction material with soil would also lead to reduced infiltration of water; decrease in permeability and increased runoff.	During excavation, Compaction and stabilization was resorted during filling to ensure that no top soil was washed away. Every care was taken to prevent soil erosion. The same shall be followed for further construction.
Physical desegregation would occur due to further excavation of different layers of soils and subsequent mixing of different layers and would lead to disruption of soil structure.	Partly excavation has been done and the Core zone was devoid of plantation except few bushes and grasses so land clearing for construction site was kept at the absolute minimum practicable. The same shall be followed for further construction also.
Chemical desegregation and pollution of soil would be on account of spillage of oils from vehicle used for transportation of construction material and from the building material used for construction purposes.	Lubricating waste oil shall be collected separately in drums and handed over to the authorized outside agency by SPCB as per CPCB guidelines.
Hydraulic oil, fuels and lubricating oils would be used. There is potential for accidental spills	Procedures for maintenance of equipment would ensure that this risk is minimized

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<p>while re-fuelling or servicing vehicles and through breakage due to wear and tear.</p> <p>During construction phase, waste oil shall be generated.</p> <p>Top Soil Management:</p> <p>A soil erosion and sedimentation control plan to control top-soil erosion and loss of top soil during excavation.</p>	<p>and clean-up response is rapid if any spill occurs.</p> <p>During the construction phase, Waste oil shall be collected through DG sets which shall be disposed through authorised vendor as per norms.</p> <p>The soil management is given in sec. no. 9.6.1 of chapter –9 (EIA Report). As partly excavation has been done, care was taken to minimize vegetation clearing. The same shall be followed for construction also.</p> <p>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 the soil shall be utilized in re-filling of foundation, road works, rising at site level etc.</p>
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Several environment management measures shall be implemented to minimize the soil erosion and other impacts such as removal and use of top soil from construction activity for future plantation, construction of silt traps etc.

During Operation:

As per chapter-3, Amount of primary nutrients like Organic matter 0.3 %, the available nitrogen 125.5 mg/kg is lower in range, available potassium 38.1 mg/kg is lower in range while the available phosphorus 24.9 mg/kg is high in range. Primary nutrient profile shows that soil is average in fertility due to the availability of low amount of nitrogen & potassium. So, the addition of bio fertilizers will enhance the fertility of soil. A planned and properly designed plantation scheme and green belt development along with landscaping will minimize the impacts on soil.

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Impact (During Operation)	Mitigation (During Operation)
Impact on soil due disposal of solid waste.	All solid waste and hazardous waste from the proposed project will be properly collected, stored and disposed. An integrated solid and hazardous waste management plan will be developed as per the details given in chapter 9.
Infiltration of silt and sand with storm water harvesting.	Sand & silt trap will be installed to avoid infiltration of silt and sand.

Hence, no negative impact of soil quality in the study area is expected due to the proposed project.

4.2 IMPACT DUE TO SOLID WASTE DISPOSAL

As discussed in Chapter-2 there will be generation of construction debris and 200 kg/day of solid waste during construction phase. During operation phase, 9322 Kg/day of municipal solid waste will be generated.

DURING CONSTRUCTION:

Impact (During Construction)	Mitigation (During Construction)
Potential pollution problems during construction activities include dumping of construction debris in to or near watercourses.	Mitigation plan shall be prepared suggesting maximum reuse of construction waste on site or removal of waste from the site and proper disposal, which would reduce impact, significantly.
The waste from labour rest rooms is mainly household domestic waste that shall be collected and composted on site along with the biomass from the land clearing activities.	During the construction phase, the municipal waste of 200 kg/day will be generated which will be disposed to MCG designated site through authorized vendor as per Municipal Solid Waste Management Rules 2016.
Impact from construction waste may arise owing to the shortage of dumping sites, increase in transportation and disposal cost and environmental deterioration.	Care shall be taken to ensure that temporary stacking and transportation shall not cause any disturbance to the surrounding environment.

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DURING OPERATION

Impact (During Operation)	Mitigation (During Operation)
<p>Impact from Solid Waste:</p> <p>Environmental impact from the solid waste disposal can typically include contamination of soil, ground water and air quality.</p> <p>Impact from Hazardous waste:</p> <p>During the operation stage of the project also some quantity of hazardous waste like used oil from DG sets shall be generated</p>	<p>Impact from Solid Waste:</p> <p>Approx. 9322 kg/day of municipal solid waste will be generated and shall be disposed off properly and safely.</p> <ul style="list-style-type: none"> • Proper records of the solid waste to be generated will be maintained. • Waste collection bins will be placed at strategic locations in shopping/commercial building. • Generated solid waste shall be segregated & organic waste shall be composted in organic waste convertor proposed within the site. <p>Detail solid waste management plan is given in chapter-6</p> <p>The total used oil will be 1800 L/month. Used oil from DG sets & Lubricating oil shall be collected in leak proof steel drums sent to the Spent Oil Storage Site, these drums shall be properly identified with label of what is contained in Hindi & English. Waste oil shall be given to outside party for treatment, which shall be used again.</p> <p>Lubricating waste oil will be collected separately in leak proof drums and shall be sold to authorized external agency for recycling.</p> <p>E-waste generated will be 5-10 kg/month which will be given to approved recycler from SPCB.</p>

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4.3 AIR ENVIRONMENT

As seen from baseline data generation in chapter-3, ambient air quality results shown 250.9 $\mu\text{g}/\text{m}^3$ & 57.7 $\mu\text{g}/\text{m}^3$ concentration of PM10 & PM2.5

During Construction:

Impact (During Construction)	Mitigation (During Construction)
<p>Dust from various construction operations and emission from operation of construction equipment or movement of vehicles are likely to cause some impacts on the working population as well as residing population within immediate vicinity of the project site.</p> <p>Traffic to the different sites during construction will be more intensive and much heavier than at present in normal operating conditions. In turn, it will subject existing roads to more stress.</p>	<ul style="list-style-type: none"> • Dust suppression systems (water spray) shall be done as per requirement at the construction site. Construction materials shall be covered during transportation to the project site by road. Partly land clearance for construction site has been done and for further construction will be kept at the absolute minimum practicable. • The present road conditions are reasonably good for proposed movement of traffic. Preventive maintenance shall be carried out for vehicles and pollution check on periodic basis. As construction activities are mainly confined to project site only for short duration. • Monitoring of ambient air quality/source emission will be carried out as per details given in Chapter -6 or stipulated by MOEF/SPCB.

During Operation

The project is a Shopping/ Commercial Building not having any production or manufacturing or any industrial activity; hence emissions from DG sets and dust from vehicular movement will be the only source of air pollution.

A1: West direction of site, the mean value of SO₂(8.3 $\mu\text{g}/\text{m}^3$) and NO_X (27.9 $\mu\text{g}/\text{m}^3$) are within the limits of National ambient air quality standards. However,

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the mean value of PM₁₀ (250.9 µg/m³) and PM_{2.5} (102.8 µg/m³) are higher than the National ambient air quality standards due to vehicular activity at NH8.

A2: East direction of site, the mean value of SO₂(7.9 µg/m³) and NO_x (26.8 µg/m³) are within the limits of National ambient air quality standards. However, the mean value of PM₁₀ (240.9 µg/m³) and PM_{2.5} (98.7 µg/m³) are higher than the National ambient air quality standards due to vehicular activity at NH8.

Emissions from DG sets:

Project authorities shall install DG sets of capacity 20 X 2000 KVA. The D.G. sets will be kept on basement level. Ultra-Low Sulphur Diesel with low NO_x emissions will be used as fuel. The burning of diesel emits flue gases (particulate matter, SO₂ and NO_x).

The stack for discharging the emissions from the DG sets shall be installed up to 6m above roof level as prescribed by CPCB.

Air dispersion modelling has been done to assess the impact from DG sets on nearby area.

The detailed air dispersion modelling report is given at Enclosure 26. The summarized incremental pollution load is given below:

Maximum GLC of PM₁₀ will be 1.95 (µg/m³), PM_{2.5} - DG Sets 0.820 (µg/m³), PM_{2.5} – Vehicular emission 0.391 (µg/m³) SO₂-0.391(µg/m³) & NO_x – 3.12 (µg/m³)

Location	Background Concentration PM _{2.5} (DG SET) (µg/m ³)	Predicted Incremental Concentration PM _{2.5} (DG SET) (µg/m ³)	Post Project Air Quality PM _{2.5} (DG SET) (µg/m ³)	NAAQS (µg/m ³)
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

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Location	Background Concentration PM2.5 (VEHICULAR) ($\mu\text{g}/\text{m}^3$)	Predicted Incremental Concentration PM2.5 (VEHICULAR) ($\mu\text{g}/\text{m}^3$)	Post Project Air Quality PM2.5 (VEHICULAR) ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)
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

Location	Background Mean Concentration PM ₁₀ ($\mu\text{g}/\text{m}^3$)	Predicted Incremental Concentration PM10 ($\mu\text{g}/\text{m}^3$)	Post Project Air Quality PM ₁₀ ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)
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

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Location	Background Concentration NOX ($\mu\text{g}/\text{m}^3$)	Predicted Incremental Concentration NOX ($\mu\text{g}/\text{m}^3$)	Post Project Air Quality NOX ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)
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

Location	Background Concentration SO2 ($\mu\text{g}/\text{m}^3$)	Predicted Incremental Concentration SO2 ($\mu\text{g}/\text{m}^3$)	Post Project Air Quality SO2 ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)
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

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4.4 WATER ENVIRONMENT

Construction activities of the proposed development can have minor impact on hydrology and ground water quality of the area.

During Construction

Impact	Mitigation
Soil runoff from the site leading to off-site contamination (Particularly during rainy season).	Construction of silt fences to avoid soil runoff. Construction of storm water drainage line to divert storm runoff.
Improper disposal of construction debris leading to off-site contamination of water resources.	Disposal of construction debris in low lying areas shall be done.
Disposal of domestic waste water from temporary labour rest rooms. Spillage of oil and grease from the vehicle and waste water stream generated from on-site activities.	Disposal of sewage from temporary labour rest rooms will be collected in a sump and finally disposed regularly to HUDA STP through vendors.
Using of water in construction	No ground water will be used for construction. Water will be from HUDA STP treated water through authorised tanker

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. The total water requirement for labours & construction activities is 180 KLD which shall be arranged on temporary basis from nearest STP and will be supplied from HUDA

During Operation

Impacts on Ground Water Quality

The water requirement for proposed project will be met from HUDA supply within the area. So no ground water will be abstracted. As shown in chapter-3, in core zone, Ground water quality near site shows that the pH is 8.14 which is slightly higher than the drinking water standards. Other parameters for W1 are within the limit of IS:10500 standards of drinking water which shows that water can be used for drinking purpose.

Although no ground water abstraction is proposed but there will be a provision of total 28 no. of Rain water harvesting to recharge the groundwater. Total quantity of water requirement of the proposed project will be 3283.8 KLD out of which fresh water requirement will be 1510.3 KLD which will be met by HUDA.

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Impact	Mitigation
Two basic activities related to water environment are abstraction of water and release of waste water.	The abstraction of groundwater is not proposed for project, fresh water will be supplied by municipal supply of HUDA. No treated water will be disposed to sewer line. Hence there will be no impact on Ground water.
Contamination of soil and ground water resources from discharge of untreated waste water and contaminated storm water.	Approx. 1866.8 KLD waste water will be generated from the proposed project and will be treated in house S.T.P of 2200 KLD capacity and treated waste water of 1773.5 KLD shall be generated which will be reused for Gardening, Flushing and cooling tower. It will be a zero-discharge unit.
Spills or leaks from various areas such as fuel and waste oil storage in DG room, solid waste and STP sludge spills etc.	Silt traps and screens will be installed at storm-water drains discharge points. Contaminated storm water will thus not be discharged from the premises.
Management of storm water drainage	28 no. of RWH pits shall be provided to recharge the Ground Water, which will have positive impact on the ground water.

Impacts on Surface Water Quality

Impact (During Operation)	Mitigation (During Operation)
Flow of Sewage to Surface water.	There will be no impact on surface water as waste water that will generate from the proposed project will be treated in STP and treated waste water will be reused inside the shopping/commercial building. It will be a zero-discharge unit. No treated water will be discharge to surface water.

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It is evident that, no significant adverse impacts on surface and ground water quality are expected during the operation phase.

4.5 NOISE ENVIRONMENT

During Construction

In the proposed project, during the construction phase, the noise shall be generated from construction equipment, vehicles for transportation of construction materials and operation of DG Sets. The noise level will be high during the construction phase but it would be limited only for specific period of construction.

The techniques employed for noise control can be broadly classified as;

Control at Source:

- Regular servicing and tuning of vehicles reduces the noise levels.
- Fixing of silencers to automobiles, two wheelers etc., reduces the noise level.
- The vibrations of materials will be controlled by using proper foundations, rubber padding etc. to reduce the noise levels caused by vibrations.
- Optimum selection of machinery tools or equipment reduces excess noise levels.
- Proper lubrication and maintenance of machines, vehicles etc. reduces noise levels.

Impact	Mitigation
Generation of noise during movement of vehicles carrying materials and loading & unloading activities.	Regular checking of Vehicles, construction work will be restricted to day time only.
Generation of noise from excavation machines, concrete mixer and other construction machines.	Provision of silencers to modulate the noise generated by machines shall be done.
Generation of noise during the operation of DG sets.	Provision of acoustic enclosure to DG Sets to noise level as CPCB guideline shall be done.
Generation of noise during concreting, hammering, etc.	Provision of protective devices like ear muff/plugs to the workers shall be done.
Noise from the mechanical operations, like, drilling, fitting, etc.	Preventive maintenance of the machine/equipment's shall be carried

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	out. Provision of rubber padding/noise isolators.
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During Operation

Impact	Mitigation
Source of noise will be operation of DG Sets during power failure.	DG sets of capacity 20 x 2000 KVA shall be kept on basement level in acoustically enclosed room. Anti- vibration pads will be used in DG sets to minimize the vibration effect.
The noise is likely to be generated due to movement of vehicles	Free flow of traffic movement shall be maintained. Proper plantation on 32754.438 sqm (25.01 % of plot area) shall be done all along the roads & periphery to reduce noise.

4.6 IMPACT ON ECOLOGY AND BIODIVERSITY

Potential primary and secondary impacts from the proposed project on the biological environment have been identified based on the following criteria:

1. Habitat quality.
2. Species/size/abundance of habitats affected.
3. Promoting non-timber products utilization.
4. Incorporation of biodiversity component into planting and budgetary process.
5. Duration of impacts.
6. Magnitude of environmental changes.
7. Mitigation measures as defined in air, water and soil quality in subsequent paragraphs will further minimize the impacts on ecology.

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During Construction Phase

Loss of vegetation due to construction of shopping/commercial building	The core zone is devoid of any significant natural vegetation. Isolated patches of grass (<i>Cynodondactylon</i>), (<i>Rumex hastats</i>) and weeds like <i>Parthenium hysterophorus</i> were seen during site visit. Hence there will be minimum impact during construction phase. There will be negligible loss of flora.
Displacement of Fauna	Avifauna like crow, myna, pigeon are seen in core zone. However, species like Cobra and garden lizards are found in buffer zone. Plantation in the project area will increase the avifauna in the area. Burrow animals will also be restored. Hence, it will have positive impact on the environment.

During Operation

Impact of emission due to running of DG Sets and vehicular movement on core and buffer zone.	<p>During operation phase 32754.438 sqm (25.01 % of plot area) will develop as green area and will be developed as green belt & plantation at periphery. DG sets will be used as backup and will be used only during power failure, as per dispersion modelling incremental load of PM from DG Sets emission will be negligible. It will have minimum impact on the flora of buffer zone. There is no Wildlife Sanctuary within 10 km radius. As incremental load during operation phase will be negligible and all the activities will be within project area, there will no impact on buffer zone.</p> <p>However green area will be maintained having green belt, plantation at periphery, Avenue Plantation & lawn area. A gardener shall be deputed for proposed greenbelt development/ plantation.</p>
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4.7 TRAFFIC MANAGEMENT

As it is evident from the study conducted, as per details given in chapter3, NH 8 is adjacent to the site in west direction.

Impact (During Construction)	Mitigation (During Construction)
Movement of vehicles	<p>The entry/ exits points are connected direct to the service road to avoid conjunction on the main road. Proper parking management of trucks, cars and other vehicles shall be done.</p> <p>Dedicated place for loading and unloading shall be assigned for the construction material to be used.</p>

Impact (During Operation)	Mitigation (During Operation)
Management of Parking of Cars & two-wheeler	Total parking requirement for shopping/commercial building is 8248 ECS & parking provisions will be 10522 ECS which shall be provided.
Movement of Vehicles	<p>6 m drive way will be provided for smooth movement of vehicles within the project.</p> <p>Free flow traffic movement shall be provided. Metallic road shall be developed to avoid emission of dust. Preventive maintenance shall be carried out for vehicles and pollution check on periodic basis.</p> <p>As per the traffic analysis done, it is concluded that since carrying capacity of NH-8 is much higher than proposed traffic volume. Therefore, the traffic to & fro of Shopping/commercial building will not create any traffic congestion.</p>

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Traffic Survey:

I. Traffic Analysis: NH-8, 8 Lane -35 Meter (Delhi to Jaipur)

Hours	PCU/Hr	Baseline PCU/Hr	Predicted PCU/Hr	Capacity of Road in PCU/Hr	LOS Baseline	LOS Predicted	% increase
06:00- 07:00	242	5768	6010	10286	0.561	0.584	4.196
07:00- 08:00	422	5399	5821	10286	0.525	0.566	7.816
08:00-09:00	620	5388	6008	10286	0.524	0.584	11.506
09:00-10:00	700	5359	6059	10286	0.521	0.589	13.062
10:00-11:00	810	5293	6103	10286	0.515	0.593	15.304
11:00-12:00	618	5621	6239	10286	0.546	0.607	10.995
12:00-13:00	618	5853	6471	10286	0.569	0.629	10.558
13:00-14:00	618	6120	6738	10286	0.595	0.655	10.098
14:00-15:00	618	5213	5831	10286	0.507	0.567	11.854
15:00-16:00	618	4978	5596	10286	0.484	0.544	12.416
16:00-17:00	618	5168	5786	10286	0.502	0.563	11.957
17:00-18:00	618	5421	6039	10286	0.527	0.587	11.400
18:00-19:00	618	5929	6547	10286	0.576	0.636	10.423
19:00-20:00	618	5734	6352	10286	0.557	0.618	10.779
20:00-21:00	618	5521	6139	10286	0.537	0.597	11.194
21:00-22:00	718	5688	6406	10286	0.553	0.623	12.623
22:00-23:00	830	5133	5963	10286	0.499	0.580	16.169
Average	619	5505	6124	10286	0.54	0.60	11.31

II. Traffic Analysis: Approach Road 2 Lane -9.0 Meter (Moulsari Ave Road)

Hours	PCU/Hr	Baseline PCU/Hr	Predicted PCU/Hr	Capacity of Road in PCU/Hr	LOS Baseline	LOS Predicted	% increase
06:00- 07:00	242	408	650	2143	0.19	0.30	59.31
07:00- 08:00	422	485	907	2143	0.23	0.42	86.94
08:00-09:00	620	522	1142	2143	0.24	0.53	118.87
09:00-10:00	700	533	1233	2143	0.25	0.58	131.43
10:00-11:00	810	425	1235	2143	0.20	0.58	190.59
11:00-12:00	618	434	1052	2143	0.20	0.49	142.43
12:00-13:00	618	441	1059	2143	0.21	0.49	140.07
13:00-14:00	618	427	1045	2143	0.20	0.49	144.58
14:00-15:00	618	437	1055	2143	0.20	0.49	141.29
15:00-16:00	618	425	1043	2143	0.20	0.49	145.34
16:00-17:00	618	397	1015	2143	0.19	0.47	155.68
17:00-18:00	618	441	1059	2143	0.21	0.49	140.22

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GURGAON

18:00-19:00	618	433	1051	2143	0.20	0.49	142.58
19:00-20:00	618	435	1053	2143	0.20	0.49	142.03
20:00-21:00	618	457	1075	2143	0.21	0.50	135.37
21:00-22:00	718	468	1186	2143	0.22	0.55	153.35
22:00-23:00	830	463	1293	2143	0.22	0.60	179.43
Average	619	449	1068	2143	0.21	0.50	138.21

	Parameter	Existing	Proposed
ROAD1	WIDTH (m)	35	-
	Carrying Capacity (PCU/ Hr)	10286	-
	Traffic (PCU/Hr)	5505	619
	LOS	0.54 i.e. cat C	0.60 i.e. cat C

	Parameter	Existing	Proposed
ROAD2	WIDTH (m)	9.0	-
	Carrying Capacity (PCU/ Hr)	2143	-
	Traffic (PCU/Hr)	449	619
	LOS	0.21 i. e cat A	0.50 i. e cat A

Hence it is concluded that since carrying capacity of road (NH-8) is much higher than proposed traffic volume. Therefore, the traffic to & from of proposed, project will not create any traffic congestion.

4.8 SOCIO-ECONOMIC CONDITION

The project was conceived long back and thereafter in 2016 the land has been allocated by Ministry of Health & Family Welfare for development of Hospital complex.

Sr. No.	Activity	Impact Identified	Mitigation Proposed
1	Increase in Transportation	Due to construction of project, number of vehicles will carry construction	The project lies in Gurgaon area, near to NH8. The roads is sufficiently wide and will

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		Material in 8 - 10 vehicles per day. The increase in usage of number of vehicle will have direct impact on traffic load on the existing roads in the area. Due to which there will be traffic jam, chaos, discomfort, safety issues on the roads.	not have congestion due to this number of trucks during construction purpose, however for proper traffic planning, the traffic will be regulated and timings of trucks per hour will be fixed.
2	Employment Generation	During Installation of existing part, approximately 2000 number of labour will be engaged. However, during operational phase total employment generation will be 14832, Apart from direct employment there will be increase in indirect employment in form of provision of rental houses, shops and other basic requirements in the surrounding areas	Positive impact due to Increase in employment and other indirect requirements will lead to better economic condition of people in the area. The purchasing power of people will increase. Hence, there will be overall development of the area
3	Water Abstraction	The water requirement during construction phase will be 180 KLD and during operational phase will be 3283.8 KLD. There will be negative impact due to extraction of water from ground, if the abstraction of water is proposed. The ground water level will fall down. The area is already a high water scarce area, can cause water scarcity in the area for all in surrounding areas.	No ground water is proposed, so there will be no negative impact due to construction and operation of the complex. The water will be sourced through HUDA STP Treated water and during operation through HUDA Municipal Supply. Apart, Rain water harvesting will increase the present ground water and will improve water quality of the area, thereby giving positive impact to the society.
4	Air Pollution from emission sources	20 DG Sets of 2000 KVA shall be installed for providing 100% power back in the commercial complex. Emissions from DG sets can have impact on villages in West and East direction of	Main power source will be DHBVN. DG Sets will used only as emergency power failure and for emission control proper stack height shall be installed, hence the impact will be minimized. Also,

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		the complex. This can cause breathing problems and other health related issues in the surrounding areas.	proper green belt shall be provided to act as a barrier for air pollutants. The receptor of the emissions from DG Sets are Udyog Vihar V (Industrial Area) in west direction and Agricultural fields in East direction. Thus there will not be any impact on human settlement.
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4.9 OCCUPATIONAL SAFETY AND HEALTH

During construction phase, work force may be exposed to variety of physical hazards depending upon the specific work function. The most significant occupational hazards may include fall from height, carrying heavy loads, accidents due to malfunctioning of machinery and falling objects from height etc.

4.9.1 General Safety Measures

- Standard methods and machinery shall be used during construction phase.
- Use of Personal Protective Equipment (PPE) shall be made mandatory.
- Elevated platforms and walkways, and stairways and ramps are equipped with handrails, toe boards and non-slip surfaces.
- Electrical equipment has been grounded, well insulated and conform to applicable codes.
- Employees are provided with hard hats, safety boots, eye and ear protection, and snug fitting gloves as appropriate.
- Masks and dust-proof clothing shall be provided to personnel working in areas with high dust levels.
- Procedures shall be strictly enforced for the storage, handling, and transport of explosives, flammable and hazardous materials.

4.9.2 General Health Measures

- Sanitary facilities are well equipped with supplies (e.g., protective creams) and employees shall be encouraged to wash frequently, particularly those exposed to dust, chemicals or pathogens.
- Ventilation systems shall be provided to control work area temperatures and humidity;
- Pre-employment and periodic medical examinations shall be conducted for all personnel, and specific surveillance programs instituted for personnel potentially exposed to health hazards.

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