

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

O. A. No. 404 OF 2025

IN THE MATTER OF:

RAM KISHORE YADAV

...APPLICANT

VERSUS

MINISTRY OF ENVIRONMENT,
FORESTS & CLIMATE CHANGE & ORS.

...RESPONDENTS

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PLACE: NEW DELHI
DATE: 19.12.2025

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**REPLY ON BEHALF OF RESPONDENT No. 6 - M/S DLF
LIMITED**

MOST RESPECTFULLY SHOWETH:

At the very outset, the Respondent No. 6, M/s DLF Limited (hereinafter referred to as the “**Answering Respondent**”), most respectfully submits this Reply to the Original Application (**O.A.**) No. 404 of 2025 filed by the Applicant herein in accordance with the order dated 12.08.2025 passed by this Hon’ble Tribunal. The Answering Respondent 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 half-truths, is a gross abuse of the process of law, filed with the sole intent of obstructing a lawfully approved and environmentally compliant project. It is humbly submitted that the instant OA deserves to be dismissed at the threshold with exemplary cost in favour of the answering respondent.

I. PRELIMINARY SUBMISSIONS

1. It is respectfully submitted that the answering Respondent 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 construction and 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 environmental laws, clearances and regulatory norms.

2. It is further submitted that before approaching this Hon'ble Tribunal, any prudent and responsible litigant is expected to undertake basic due diligence by verifying the authenticity of facts and documents that are publicly accessible through official portals. The details of Environmental Clearance (EC), revenue records, and other statutory permissions are readily available on various government websites, including those of the Ministry of Environment, Forest and Climate Change (MoEF&CC) and revenue and disaster department ([www. Jamabandi.nic.in](http://www.Jamabandi.nic.in)) and RERA website. Had the Applicant exercised even minimal diligence and verified these records, it would have been apparent that the project in question has obtained all requisite approvals and is in full compliance with applicable environmental and legal norms. However, the Applicant, without verifying the publicly available facts and documents, has chosen to institute the present proceedings based on presumptions and unfounded allegations, thereby misleading this Hon'ble Tribunal and causing unwarranted hardship and reputational prejudice to the Answering Respondent. The instant O.A. is, therefore, frivolous, vexatious, and deserves to be dismissed at the very threshold with exemplary costs.

3. It is submitted that the present OA is entirely based on alleged non securing of the following environmental clearances by the answering respondent in relation to its project, 'The Dahlias', namely,

i) **Environment Clearance (EC)** under the EIA Notification 2006 and ii) Consent to Establish (CTE) from Haryana State Pollution Control Board (HSPCB). These allegations are wholly misconceived, unsubstantiated, and contrary to record. It is submitted that the answering Respondent has all the required Environmental consents/approvals which not only include the EC and CTE but also other Impact Analysis reports and NOC obtained by the Answering Respondent in relation to its project, 'The Dahlias' at all relevant times as under:

i. A **comprehensive Environmental Impact Assessment Report** along with an Environmental Management Plan was duly prepared by an independent, QCI/NABET- accredited consultant, M/s Vardan Environment formally submitted to the competent authorities vide Letter dated 21.04.2022, in full compliance with the provisions of the EIA Notification, 2006. It is pertinent that a copy of this report together with its annexures is also publicly accessible at the Government website relating to environment clearance at https://environmentclearance.nic.in/state/FB_ECGeneral_Report.aspx?pid=202532.

A copy of the Environmental Impact Assessment (EIA) Report submitted vide Letter dated 21.04.2022 is annexed herewith and marked as **ANNEXURE-R1**.

- ii) **Environmental Clearance (EC)** dated 17.08.2022 bearing EC Identification No. EC22B039HR111216 & File No. SEIAA/HR/2022/181 issued by the State Environment Impact Assessment Authority (SEIAA), Haryana under the provisions of the EIA Notification, 2006.

A copy of the Environmental Clearance (EC) dated 17.08.2022 issued by SEIAA, Haryana is annexed herewith and marked as **ANNEXURE-R2**.

- iii) **Consent to Establish (CTE)** dated 09.09.2022 issued by the Haryana State Pollution Control Board (HSPCB) under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 pursuant to answering respondent's Application No. 27715935; Industry ID 22GUNO325384.

A copy of the Consent to Establish (CTE) dated 09.09.2022 issued by the Haryana State Pollution Control Board is annexed herewith and marked as **ANNEXURE-R3**.

- iv) **No Objection Certificate (NOC)** issued by Divisional Forest Officer, Gurugram, dated 18.03.2024 in respect of Haryana Land and Preservation Act, 1900 (the provisions of the Punjab Land Preservation Act, 1900 (**PLPA**)) and the Indian Forest Act, 1927 or Restricted Lands.

A copy of the NOC dated 18.03.2024 issued by the Divisional Forest Officer, Gurugram is annexed herewith and marked as **ANNEXURE-R4**.

- v) **Environmental Impact Assessment (EIA) Report** submitted vide Letter dated 19.03.2024 covering **Expansion-cum-Modification** of the Group Housing Project.

A copy of the Environmental Impact Assessment (EIA) Report submitted vide Letter dated 19.03.2024 is annexed herewith and marked as **ANNEXURE- R5**.

- vi) **EIA Presentation** made before the State Expert Appraisal Committee (SEAC), Haryana dated 31.05.2024.

A copy of the EIA Presentation made before the State Expert Appraisal Committee (SEAC), Haryana dated 31.05.2024 is annexed herewith and marked as **ANNEXURE-R6**.

- vii) **Environmental Clearance (EC)** dated 14.09.2024 bearing File No. SEAC/HR/2024/067 and EC Identification No. EC24B3812HR5307923N, under Category 8(b) of the EIA Notification, 2006 granted for **“Expansion-cum-Modification** of Group Housing Buildings in Zone 10, DLF-5, Sector-54, Gurugram, Haryana.”.

A copy of the Environmental Clearance dated 14.09.2024 issued by the State Environment Impact Assessment Authority (SEIAA), Haryana is annexed herewith and marked as **ANNEXURE-R7**.

- viii) **Consent to Establish** issued by HSPCB, Gurgaon- North Regional Office vide No. HSPCB/Consent/329962324GUNOCTE78781769 dated 17.09.2024 for the period 17.09.2024 to 13.09.2034.

A copy of the Consent to Establish (CTE) dated 17.09.2024 issued by the Haryana State Pollution Control Board (HSPCB) is annexed herewith and marked as **ANNEXURE-R8**.

In fact, the aforesaid project is registered with Haryana Real Estate Regulatory Authority (HARERA) as Project registration No. RC/REP/HARERA/GGM/872/604/2024/99 dated 04.10.2024 and at its website FORM REP I of the project has been available since 09.08.2024 onwards at https://haryanarera.gov.in/view_project/project_preview_open/3015. A bare perusal of part E of this form as available on the HRERA website shows that all statutory approvals including Aravali NOC and Forest NOC have been already obtained by the answering respondent.

A copy of the printout of FORM REP-I is annexed herewith and marked as **ANNEXURE-R9**.

4. It is submitted that the aforesaid approvals demonstrate a robust compliance with all applicable laws in relation to the answering Respondent's project in question. The HRERA registration of the project, as well as the publicly available Form REP-I (Temp Project ID RERA-GRG-PROJ-1690-2024), further demonstrates that all statutory approvals, including Aravali and Forest NOCs, are in place.

5. From the above preliminary submission, it is evident that any bonafide litigant filing a petition before this Hon'ble Tribunal would have found most of the aforesaid approvals in public domain with basic due diligence including checking the publicly accessible documents on MOEF website. However, the Applicant failed and neglected to do so and proceeded to file the present meritless and malafide application with an ulterior motive and in order to extort monies from the respondent, thus burdening this Hon'ble Tribunal.

6. It is further submitted that the Applicant is a chronic litigant who has a history of filing frivolous litigations in order to harass and blackmail the answering Respondent. It is pertinent to mention that the Applicant was a Gair Marusi ["Temporary Tenant"] in Khewat no. 37, Khata no. 56/1, Jhasra no. 430 min, Nathupur (1 Bigha) Village Nathupur. He had filed a Civil Suit bearing no. CM No. 440 on 08.11.2006 along with some other villagers seeking permanent injunction to restrain DLF from dispossessing them from the aforesaid Khasra. Finally, the said suit was dismissed as withdrawn vide order dated 05.05.2008 in view of compromise dated 05.05.2008 whereby an amount of Rs. 1 crore 70 lakhs was paid by the Answering Respondent to the Applicant only to buy peace.. It is, therefore, preposterous and ludicrous for the Applicant to claim that he is some concerned citizen and deeply aware of the Environmental, cultural and social heritage of the Aravallis and that the Applicant has filed the petition in public interest to protect the ecological integrity, environmental balance and legal sanctity of the notified Aravalli forest. The present application is nothing but an attempt by the Applicant to further

harass and blackmail the answering Respondent with the ulterior motive of extorting further monies.

A copy of the Order dated 05.05.2008 along with the compromise recorded between the Applicant and the Answering Respondent herein is annexed hereto and marked as **ANNEXURE-R10**.

7. Further, the applicant also intervened and was duly heard by the Hon'ble Punjab & Haryana High Court, in a *suo moto* CWP (PIL) No. 146 of 2025 pursuant to a news item published in *The Tribune* on 12.06.2025 alleging that approximately 2,000 trees were being cut by the answering Respondent (DLF) over 40 acres of land in Phase 5, Gurugram, purportedly part of the Aravalli Hills with respect to another project of the answering Respondent. It is pertinent that the Hon'ble P&H High Court, issued notice to the answering Respondent along with other governmental authorities, including the Deputy Conservator of Forests, Gurugram, and the Municipal Corporation, Gurugram, and sought their respective responses. The said PIL was disposed of by the Hon'ble Punjab and Haryana High Court after considering all materials and hearing the parties, including the present Applicant, vide its reasoned order dated 17.07.2025, categorically holding that, since none of the *khasra* numbers in respect of which DLF was granted permission to fell trees fell within the Aravalli Hills area, and the permissions were granted after following due process of law, no further proceedings were warranted. In this order, based on the status report of the Forest Department, the High Court also noted that the land of the answering Respondent does not fall under the definition of forest under the relevant statute. The relevant extract is reproduced as under:

7. Therefore, in the absence of any material to the contrary, this Court has to rely upon the statement on oath made by Deputy Conservator of Forest, Gurugram and its contents. Since none of the khasra numbers in regard to which respondent No.3 has been granted permission to fell trees, fall within the Aravalli Hills area, this Court does not deem it appropriate to proceed in the matter especially when respondent No.3-DLF was granted permission to fell trees vide different orders after following due process of law.

A copy of the Order dated 17.07.2025 is annexed hereto and marked as **ANNEXURE-R11**.

8. It is submitted that the present Applicant, despite having participated as an intervenor and having been duly heard in the aforesaid *suo motu* proceedings which substantially related to the same subject matter before the Hon'ble P&H High Court, has failed to disclose the aforesaid order dated 17.07.2025 passed by the Hon'ble P&H High Court. As such, it is evident that the applicant is in a habit of initiating litigations against the Answering Respondent wherever possible, to malign its reputation and to extract monies from it.

As such, in view of the above preliminary submissions, the present OA deserves to be dismissed with cost.

II. DETAILED SUBMISSIONS:

9. The instant OA is replete with sweeping and unsubstantiated allegations, devoid of any specific details or evidence concerning the purported violations of environmental rules and regulations. The OA appears to be nothing more than a roving enquiry,

designed to extract information with the ulterior motive of disrupting the legitimate operations of the Answering Respondent. Such an approach seeks to unjustly interfere with the Respondent's activities and gain an unlawful advantage by casting aspersions on the reputation of the Answering Respondent. It is pertinent to highlight that the Answering Respondent is among the largest and most reputable domestic real estate developers in India, known for its unwavering commitment to integrity, compliance, and sustainable practices. The baseless allegations made herein are not only damaging to the Respondent's good name but also constitute an attempt to malign its standing in the industry without any factual foundation.

10. It is humbly submitted that the Applicant herein has deliberately suppressed and distorted material facts, including that the project in question, namely "The Dahlias", DLF 5, Sector-54, Gurugram, Haryana, has been duly accorded statutory approvals and environmental clearances by all competent authorities after exhaustive technical and regulatory appraisal under the EIA Notification, 2006, the Environment (Protection) Act, 1986, and other applicable statutes. The OA, built on selective misrepresentation and omission of these approvals, is therefore *mala fide* and misleading.
11. It is specifically and categorically denied that the Answering Respondent is undertaking or has ever undertaken any illegal, unauthorized, or unregulated construction at the said project site. The allegation of commencement of construction without obtaining prior Environmental Clearance (EC) is wholly untrue, mischievous, and contrary to record. The Answering Respondent

has obtained all requisite statutory approvals, permissions, and clearances, including Environmental Clearance, Forest NOC, and Consent to Establish (CTE), and continues to operate in strict compliance with environmental laws and judicial directions.

12. The project has undergone a rigorous multi-tiered statutory appraisal under the EIA Notification, 2006, including preparation of a comprehensive Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) through a QCI/NABET-accredited consultant, M/s Vardan EnviroNet, detailed scrutiny by the State Expert Appraisal Committee (SEAC), Haryana, and grant of Environmental Clearance (EC) by the State Environment Impact Assessment Authority (SEIAA), Haryana. The said EC was subsequently followed by Consent to Establish (CTE) from the Haryana State Pollution Control Board (HSPCB), thereby satisfying every statutory prerequisite before commencement of project activities.
13. The existence of these approvals conclusively demonstrates that the project stands fully authorised and sanctioned under the applicable provisions of the Environment (Protection) Act, 1986, the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, and the Forest (Conservation) Act, 1980. The sweeping, unsubstantiated allegations of the Applicant regarding “unauthorised construction” or “violation of environmental norms” are, therefore, untenable in law and contrary to record.

14. It is further submitted that the project site is being developed strictly in accordance with valid Licences issued by the Directorate of Town and Country Planning (DTCP), Haryana, approved Zoning Plans, and Development Plans duly notified under the Haryana Development and Regulation of Urban Areas Act, 1975.
15. It is most respectfully submitted that every stage of the project including licensing to environmental appraisal, forest clearance, and pollution control consents, has been carried out under the supervision and sanction of the competent statutory authorities. The project has thus been developed in strict adherence to law and regulatory oversight, leaving no scope for the insinuations of irregularity or illegality sought to be advanced by the Applicant. The present OA, founded upon speculative assertions and motivated exaggeration, is liable to be dismissed *in limine*.
16. The Answering Respondent reiterates that it has, at all material times, scrupulously complied with all applicable environmental laws, conditions of EC and CTE, and judicial directions. The answering Respondent has never commenced nor intends to commence any construction without securing prior statutory approvals. The allegations made by the Applicant are therefore reckless, misleading, and establishes wilful disregard for the actual record of compliance.
17. The OA, premised on bald allegations, unverified photographs, and conjectural observations, is devoid of any substantive evidence to establish even a *prima facie* case of illegality. The Applicant has neither produced documentary proof of any so

called violation nor demonstrated breach of any statutory condition. Such a speculative, publicity-oriented petition, filed without due diligence, is an abuse of the process of this Hon'ble Tribunal, intended only to malign the reputation of the Answering Respondent and stall legitimate development. The OA, therefore, deserves outright dismissal with exemplary costs.

III. PROJECT DETAILS-

18. The Answering Respondent most respectfully submits that the project, titled "The Dahlias, DLF-5, Sector-54, Gurugram, Haryana," is being developed pursuant to the valid licences issued by the Director, Town and Country Planning, Haryana ("DTCP"), all of which remain valid and subsisting. Additionally, the project has also been accorded a registration certificate no. RC/REP/HARERA/GGM/872/ 604/2024/99 dated 04.10.2024 by the HRERA under Section 5 of the Real Estate (Regulation & Development) Act, 2016 which registration is valid up to 31.12.2031.

IV. ALLEGATION-WISE REPLY TO THE BASELESS AND UNSUBSTANTIATED ALLEGATIONS MADE IN THE ORIGINAL APPLICATION AGAINST THE ANSWERING RESPONDENT:

1. Allegations that the Answering Respondent commenced the construction of the project in question without obtaining prior Environmental Clearance –
 - i. The allegation is wholly false, misconceived, and contrary to record. The Answering Respondent has not undertaken any construction activity prior to obtaining the mandatory Environmental Clearance

under the EIA Notification, 2006. On the contrary, the Respondent's project has been subjected to full statutory scrutiny by the competent authorities and has obtained all requisite clearances before commencement of construction.

- ii. The project was duly appraised under Category 8(b) of the EIA Notification, 2006 by the State Expert Appraisal Committee (SEAC) and approved by the State Environment Impact Assessment Authority (SEIAA), Haryana. After detailed evaluation of the EIA/EMP Reports, Environmental Clearance was granted vide Letter dated 17.08.2022.
- iii. Subsequent to the expansion and modification of the project area the revised area became, 16.975 acres, a fresh Environmental Clearance was issued by SEIAA, Haryana vide Letter dated 14.09.2024. The said clearance was granted after the Respondent had submitted a comprehensive and updated EIA/EMP Report detailing all environmental safeguards and mitigation measures.
- iv. The EIA and annexures thereto contain dated satellite imagery, baseline environmental data, and photographic records conclusively showing that no excavation, civil work, or construction activity was undertaken at site prior to the grant of EC. This is further corroborated by the inspection records and site photographs forming part of the EIA Annexures.

Hence, the Applicant's allegation of pre-EC construction is baseless, mischievous, and contrary to the documentary evidence. Every stage of project activity has been undertaken strictly post-clearance and under regulatory supervision.

2. **Allegations that the Answering Respondent is carrying out illegal constructions and tree felling in forest areas already stands adjudicated by the Hon'ble P&H High Court vide its order dated 17.07.2025.**

- i. The allegation that the project falls within the Aravalli or any forest-notified zone is evidently incorrect and deliberately misleading. The Applicant has deliberately tried to mislead the Hon'ble Tribunal regarding the allegations of the felling of 2000 trees, which is entirely incorrect. As already elaborated in the preliminary submissions above, the issue relating to the tree felling, though for a different project in the same eco zone has already been examined in detail by the P&H High Court in CWP- PIL 146 of 2025. By a detailed reasoned order dated 17.07.2025, the Hon'ble High Court examined the entire matter after affording opportunity to all concerned, including the Applicant herein and disposed of the PIL finding no reason to proceed against the answering Respondent in this regard.
- ii. It is further submitted that the project site of 'The Dahlias' forms part of the residential zone as per the Gurugram-Manesar Urban Complex Master Plan-

2031, duly notified by the Town & Country Planning Department, Haryana.

- iii. The Divisional Forest Officer, Gurugram, after due verification of the relevant Khasra numbers and cadastral maps of this entire eco-zone, issued a Clarification/NOC dated 18.03.2024 expressly certifying that the entire 16.975 acres of land do not fall under forest, restricted, or HLPAs-notified area under the Haryana Land and Preservation Act.
- iv. The EIA's 10-km buffer analysis further confirms that there are no notified forests, wildlife sanctuaries, wetlands, or eco-sensitive zones within or adjoining the project boundary. The nearest eco-sensitive area, the Asola Bhatti Wildlife Sanctuary, lies well beyond the prescribed distance threshold and is fully buffered by urbanized sectors of Gurugram.
- v. It is submitted that the instant OA has been filed by the Applicant herein without any due diligence and has completely and deliberately failed to examine the true nature of the land of the said project and the applicability of various statutory provisions relating to the Protection of Forests, the Aravalli Plantation etc. It is relevant to mention here that the entire OA is misleading and intends to create an incorrect impression for the reader as if the subject land is either;

- (i) A Protected Forest/reserved forest land or;
 - (ii) Falls under the Aravalis, thereby projecting the land to be under some statutory sort of prohibition.
- vi. That it is emphatically submitted that the land in question is
- (i) Neither classified as protected forest land under the Forest (Conservation) Act, 1980;
 - (ii) Nor does it fall within the fragile Aravalli hill belt;
 - (iii) Nor it is notified under the Specific Sections 4 & 5 of the PLPA Act, 1900 (Notification dated 11.02.1970);
 - (iv) Nor it is covered under the Gair Mumkin Pahar category, to which the notification dated 07.05.1992 (generally referred to as the "Aravalli Notification") issued by the Ministry of Environment, Forest & Climate Change, Government of India, is applicable.
- vii. Furthermore, the OA has been filed without considering or taking into account the readily available records maintained and published by the Forest Department, Haryana, which clearly identifies the land and its specific Khasra Nos. which are notified as Protected Forest or fall under Specific

Sections 4 & 5 of the PLPA Act, 1900 or fall under the Aravalli Plantation and/or are categorized as Gair Mumkin Pahar in District Gurugram. It is submitted that the khasra nos. of the land wherein the project in question is coming up, are not in the notified part as Protected Forest or fall under Specific Sections 4 & 5 of the PLPA Act, 1900 or fall under the Aravalli Plantation and/or are categorized as Gair Mumkin Pahar.

viii. Therefore, the project's location is legally compliant, environmentally permissible, and supported by competent statutory verification. The attempt to portray the site as part of the "Aravalli Forest" is an attempt to sensationalize and mischaracterize an approved urban residential zone.

3. **Allegations that the construction of the said project was carried out without obtaining valid Consent to Establish under Air and Water Acts –**

- i. The allegation that construction was initiated without obtaining mandatory Consent to Establish from the Haryana State Pollution Control Board is factually and legally unsustainable.
- ii. The Respondent had applied to the HSPCB well before commencing any construction activity and was granted Consent to Establish under the Air (Prevention and Control of Pollution) Act, 1981 and Water (Prevention and Control of Pollution) Act,

1974 vide Letter dated 09.09.2022, valid up to 16.08.2032. Subsequently, upon expansion of the project's plot area and built-up configuration, a revised CTE dated 17.09.2024 was issued by the Board, valid up to 13.09.2034. Both CTEs authorize the project activity and stipulate detailed environmental safeguards.

- iii. The Respondent has scrupulously complied with all such stipulations. Hence, the allegation of operating without valid CTE is patently false and contrary to official HSPCB records.

4. **Allegations that the said project has caused environmental damage through excavation and tree-felling.**

- i. The allegation that large-scale excavation and tree-felling were carried out causing ecological damage is unsupported by any empirical or documentary evidence and stands negated by the record itself, which has also been examined in detail by the Hon'ble P&H High Court vide its order dated 17.07.2025, wherein the Hon'ble Court found no merit in the allegation against the answering Respondent in this regard.
- ii. The baseline environmental data in the EIA Report establishes that the project site comprised non-forest, barren land with sparse vegetation and no recorded tree cover. The Site Photographs further corroborates

that no excavation or physical development existed prior to the EC date, and construction commenced only thereafter under monitored conditions.

- iii. The project design incorporates a Landscape and Green-Belt Plan covering 16,486.52 sq.m. (24% of total plot area), with plantation of native and evergreen species as detailed in EC Conditions. The allegation of environmental degradation is thus wholly unsubstantiated and contrary to the project's ecological enhancement objectives.

5. Allegations that the Answering Respondent undertook Massive Tree Felling in excess of the Legal Permissions.

- i. The sweeping allegations made in the instant OA that the Answering Respondent obtained clearance to fell only 2,000 trees but observers and satellite imagery indicate over 20,000 mature trees being destroyed, often under the cover of night with no corresponding permits, are abjectly false and vehemently denied.
- ii. That the Applicant has misrepresented the nature of the project, where the alleged illegal felling is claimed to have occurred and which was subject matter of CWP (PIL) no. 146 of 2025, this land is in fact a privately owned land of the Answering respondent and 'falls within the residential zone' under all the notified Master Plans of Gurugram

which have been passed under the Punjab Schedule Roads and Controlled Areas Restriction of Unregulated Development Act, 1963. The contents in the instant OA about the massive illegal tree felling are completely false and misleading and based on incorrect facts stated carelessly without any verification of the correct factual position.

A copy of the report of the Tehsildar Gurugram through the office of District Collector dated 06.05.2022 clarifying that the land of the project does not fall under MoEF Aravalli Notification S.O 319 (E) dated 07.05.1992: NOC Forest and Aravalli Certificate for project site of “Proposed Group Housing Buildings in part of DLF 5, Zone 10, Village Wazirabad, Gurugram, Haryana.

A copy of a clarification issued by the Tehsildar for Wazirabad, Gurugram dated 15.04.2024 clarifying the applicability of Aravalli NOC for Land/Khasra (Total area 16.975 acres) falling within the project site of “LUXS” in DLF 5 Sector 54, Village Wazirabad, Gurugram, Haryana.

6. **Allegations that the Answering Respondent did not comply with the EIA/EMP and environmental safeguards and thereby caused damage to the environment -**

- i. The allegation that the project has disregarded environmental safeguards or mitigation measures is completely unfounded.

- ii. The EIA/EMP Reports (2022 and updated 2024) prepared by *M/s Vardan EnviroNet* set out exhaustive mitigation measures addressing air, water, soil, traffic, and socio-economic impacts.
 - iii. Additionally, the Answering Respondent has constituted an in-house Environmental Management Cell headed by a qualified EHS professional, supported by periodic third-party environmental audits. Continuous environmental monitoring is undertaken through NABL-accredited laboratories, and the data is regularly submitted to SEIAA, HSPCB, and other competent authorities.
 - iv. The project, therefore, adheres to every EC condition and environmental safeguard prescribed by law. The Applicant's allegations are conjectural, unsubstantiated, and made without technical understanding of the project's compliance regime.
7. **Allegations of “collusion”, preferential treatment or past unrelated violations (CCI penalty, land acquisition cases, etc.).**
- i. The Answering respondent submits that vague accusations of “collusion” are unsupported by particulars and fall outside the scope of a project-specific environmental proceeding. Issues such as competition law penalties or historic land acquisition litigation are incorrectly presented here, they are

legally and factually distinct, were infact adjudicated in separate fora on their own records and bear no nexus to environmental compliance or indeed environmental issues as far as this project is concerned.. The Answering Respondent submits that environmental appraisal here is anchored to the EIA Notification, 2006, the EC order, the ToR and the EIA/EMP, and that the project satisfies those requirements.

8. **Allegation of non-conduct of public hearing/EIA process.**

The Answering respondent submits that the project is being processed in accordance with the EIA Notification, 2006 and the Category 8(b) framework for building/area development projects. Public consultation requirements are applied as per the schedule/category and the competent authority's directions. The answering respondent submits that the ToR were granted, the EIA/EMP has been submitted and therefore there is no procedural infirmity.

9. **Allegation of proximity to ESZ/wildlife corridor and violation of ESZ norms.**

- i. The Answering respondent submits that the sensitivity mapping and buffer analysis in the EIA show the site to be outside any notified Eco-Sensitive Zone. The nearest notified areas, Sultanpur National Park and Asola Bhatti Wildlife Sanctuary are beyond regulated buffers. No ESZ-specific conditions are attracted for the site, and the wildlife/biodiversity

chapter of the EIA records no critical habitat within the study area.

10. **Allegations of manipulation of CLU/revenue records and concealment of ridge/forest classification.**

The answering respondent submits that the Master Plan and zoning plan conclusively classify the land as Residential and that the revenue NOCs dated 06.05.2022 and 15.04.2024 certify the site as non-Aravalli/non-forest. All project particulars including killa numbers, land status and planning permissions stand disclosed before the competent authorities. There is no concealment or manipulation; the allegation is extremely vague and non-specific and contrary to record.

Copies of the aforesaid NOCs dated 06.05.2022 and 15.04.2024 are annexed hereto and marked as **ANNEXURE-R12** and **ANNEXURE-R13** respectively.

11. **Allegations that Article 14 demands equal treatment with unrelated demolitions (e.g., Kant Enclave, Mangar Bani).**

The Answering respondent submits that Article 14 does not mandate like treatment of unlike cases. The cited matters involved factually distinct lands (including notified/recorded forest/PLPA areas) and different legal regimes. The subject site is a licensed residential project within a sanctioned colony, supported by EC/ToR/EIA and revenue/planning records showing non-forest and non-Aravalli status. The parity plea is misplaced. In any

case it is entirely misconceived to raise an article 14 plea before this Hon'ble Tribunal which is a creature of statute and governed by the act set out in schedule (i) only.

12. General allegations of illegality and public injury.

- i. The Answering Respondent submits that the Applicant's OA proceeds on surmise, photographs, and selective extracts from public portals without any official validation. The application, far from being an act of environmental concern, appears to be motivated by self-interest and cut out misplaced apprehension and lacks any evidentiary or legal foundation.
 - ii. The project stands duly sanctioned, environmentally cleared, and lawfully executed under continuous governmental oversight. No environmental injury or public harm has been demonstrated or even alleged with specificity.
19. The present OA, therefore, deserves to be dismissed at the threshold as a frivolous and misconceived proceeding, instituted solely to malign a lawfully approved project and impede its progress despite complete regulatory compliance.
20. The answering respondent submits that vague accusations of "collusion" are unsupported by particulars and fall outside the scope of a project-specific environmental proceeding. Issues such as raised in the OA are legally and factually distinct, and are

adjudicated in their different fora on their own records and bear no nexus to environmental issues or compliance for this project. The answering respondent submits that environmental appraisal here is anchored to the EIA Notification, 2006, the EC order, the ToR and the EIA/EMP, and that the project satisfies those requirements.

21. The Answering Respondent most respectfully submits that the present Original Application is based purely on bald and sweeping allegations, unsupported by even a single document/relevant, photograph, inspection report, or statutory communication establishing any default or illegality on part of the Respondent. The Applicant has not produced any evidence direct or circumstantial, to substantiate his claims of illegal construction, non-compliance, or environmental harm. Mere averments or some self-serving photographs downloaded from open sources having no relation to the project in question cannot constitute proof of violation, particularly when all competent statutory authorities have repeatedly endorsed the Respondent's compliance.
22. It is a settled legal principle that once the competent statutory authorities, namely, SEIAA, SEAC, HSPCB, and the Forest Department have granted statutory clearances after due appraisal and verification, a presumption of correctness and regularity attaches to such administrative acts. These approvals are issued only after multiple layers of scrutiny, site inspections, and inter-departmental evaluations. Therefore, unless specifically set aside by a competent appellate or judicial forum, such clearances carry binding legal sanctity. The Applicant's attempt to indirectly assail

these statutory approvals, without challenging them through proper proceedings, is impermissible in law.

23. The Environmental Clearance dated 17.08.2022, Expansion-cum-Modification EC dated 14.09.2024, and Consent to Establish orders dated 09.09.2022 and 17.09.2024 are each reasoned and speaking orders, issued after full consideration of the project's socio-economic impacts. The Divisional Forest Officer's NOC dated 18.03.2024 further establishes that the land is non-forest, non-restricted, and fully permissible for residential development. Once these statutory bodies, acting within their delegated powers, have approved the project, there remains no conceivable ground to allege that the Respondent has acted illegally or without authority.
24. Beyond obtaining such statutory permissions, a developer has no further legal obligation or mechanism to demonstrate its *bona fides*. The environmental clearance process itself is a comprehensive, exhaustive, and expert-driven regime under the EIA Notification, 2006. The Answering Respondent, having submitted complete documentation, baseline environmental data, technical studies, and periodic compliance reports, has gone above and beyond the statutory threshold of diligence expected of a project proponent. The Applicant cannot demand evidence beyond what the law prescribes, nor can the Answering Respondent be faulted for alleged violations when every competent authority has confirmed compliance.
25. The Answering Respondent has not only complied with each condition prescribed in its EC and CTE but has also subjected the

project to continuous monitoring through accredited environmental consultants and laboratories. In the absence of any official record, inspection report, or show-cause notice by these authorities alleging non-compliance, the insinuation of violation is entirely baseless.

26. It is respectfully submitted that environmental permissions are not granted mechanically or as a matter of routine. Each clearance, whether EC or CTE, is issued after submission of extensive data, verification by field officers, technical evaluation by SEAC, and approval by SEIAA through public and recorded deliberations. Hence, the very existence of these clearances is irrefutable evidence of the Respondent's compliance, good faith, and transparency in all dealings.
27. The Answering Respondent has, in fact, demonstrated utmost good faith by engaging a QCI/NABET-accredited consultant, conducting detailed baseline studies on air quality, noise, soil, surface and groundwater, socio-economic and ecological parameters, and submitting the same in the EIA Report dated 21.04.2022 and updated EIA dated 19.03.2024. These reports, accepted by SEIAA, conclusively establish that all environmental impacts were duly identified and mitigated. Thus, to baldly allege violation, after such exhaustive scientific appraisal is both untenable and contrary to the very regulatory framework established under the EIA Notification.
28. It is respectfully reiterated that there exists not a single show-cause notice, direction, or adverse finding issued by any competent statutory body against the Respondent. No proceeding

under Water Act, 1974, the Air Act, 1981, or the Environment (Protection) Act, 1986, has ever been initiated or is pending against the project. In such circumstances, to infer illegality merely from conjecture is impermissible and amounts to casting aspersions upon the functioning of the regulatory agencies themselves.

29. The project's Environmental Management Plan (EMP) and mitigation framework provide for real-time monitoring of ambient air and water parameters, solid waste handling, rainwater harvesting, greenbelt development, and noise attenuation. These safeguards are periodically audited by independent environmental laboratories accredited by NABL and recognized by MoEF&CC. These extensive measures demonstrate that the Answering Respondent operates in full transparency and environmental responsibility, leaving no scope for any allegation of default.
30. The Applicant, having produced no evidence of violation, cannot seek to reverse the burden of proof by calling upon the Respondent to "prove its innocence" beyond the comprehensive statutory records already on file. The law does not require an impossible standard of proof. Once statutory authorities have certified compliance and granted approvals, the Answering Respondent's *bona fides* stand established beyond doubt.
31. In essence, every aspect of the Applicant's case rests on conjecture and presumption, not on facts or law. The OA neither discloses a specific act of illegality nor identifies a single condition of the EC or CTE that has been breached. Consequently, the OA fails to establish any environmental injury or public harm,

which is a sine qua non for the exercise of jurisdiction under the National Green Tribunal Act, 2010.

32. In light of the above, it is submitted that:
- i. The present OA has been filed by suppressing several material decisive facts, which is in direct abuse of process of this Hon'ble Tribunal;
 - ii. The allegations are vague, unsupported, and devoid of evidence;
 - iii. The Respondent has obtained every statutory permission prescribed by law, including EC, CTE, and Forest NOC, after due process and technical appraisal;
 - iv. No competent authority has recorded or alleged any violation; and
 - v. Beyond obtaining these clearances and ensuring compliance through accredited experts, there remains no further legal or factual step that any developer such as the Answering Respondent can possibly undertake to establish its *bona fides*.

As such, the present application ought to be dismissed with costs.

In view of the foregoing, the answering respondent respectfully submits that the allegations made in the Original Application are baseless and devoid of merit. The answering respondent, in the

present Reply affidavit, has dealt with the allegations raised in the original application. However, the answering respondent craves leave to file a detailed para-wise reply to the Original Application, if so required, and to make such further submissions as may be permitted by this Hon'ble Tribunal in the interest of justice.

FILED BY:

Abhilash
D/8495/2018

[KARANJAWALA & CO.]
ADVOCATES FOR RESPONDENT NO. 6
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DEEN DAYAL UPADHYAY MARG,
NEW DELHI-110002
EMAIL: service@karanjawala.in;
karanjawala@karanjawala.in

PLACE: NEW DELHI
DATE: 19.12.2025

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

O. A. No. 404 OF 2025

IN THE MATTER OF:

RAM KISHORE YADAV

...APPLICANT

VERSUS

MINISTRY OF ENVIRONMENT,
FORESTS & CLIMATE CHANGE & ORS. ...RESPONDENTS

AFFIDAVIT

I, Atul Srivastava, S/o Sh. H. C. Srivastava, aged about 58 years, 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 Authorised Representative of the Respondent No.6 Company in the abovementioned case 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]
DEPONENT
Authorised Signatory

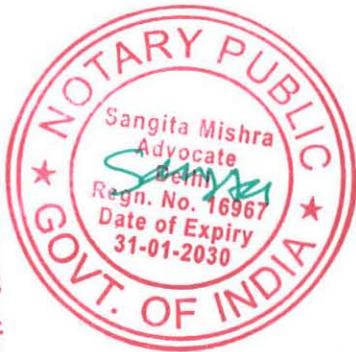
VERIFICATION

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.

19 DEC 2025

Verified at _____, on this _____ day of _____, December 2025.

For DLF LTD.
[Signature]
DEPONENT
Authorised Signatory



ATTESTED
[Signature]
Mrs. Sangita Mishra
Advocate Delhi
Regn. No. 16967
Govt. of India
Mob. No. 9990312780

NOTARIAL REGISTER
Sr. No. 648 PAGE 63
Dated 19-12-25 Reg. No. 4

I identify the deponent who has signed/T.I in my presence

Mr./Ms. *[Signature]*Adv./Self
ID No.

ANNEXURE-R1**ENVIRONMENTAL IMPACT ASSESSMENT AND
ENVIRONMENTAL MANAGEMENT PLAN****FOR**

**Proposed Group Housing Buildings
in Zone 10, DLF 5, at Sector-54 Gurugram, Haryana**

PROJECT AREA- 7.574 Acres

**MONITORING DONE BY M/S. VARDAN ENVIROLAB (NABL ACCREDITATION T-6299,
MOEFCC No S.O. 1783 (E) dated 30.06.2015)**

**[Project or Activity 8 (b) as per EIA Notification dated 14th Sept., 2006 and amended from
time to time, the proposed project falls under category “B”,]**

APPLICANT**M/S DLF LIMITED**

**Reg. Office: At DLF Shopping Mall. 3rd Floor. Arjun Marg,
DLF City, Phase-1. Gurugram-122002 Haryana**

Contact no: +91-124-4769000

Mail id: kaushik-lalit@dlf.in

ENVIRONMENT CONSULTANT**VARDAN ENVIRONET**

(QCI/NABET ACCREDITED NO. NABET/EIA/2023/SA0158)

Plot no.-82A, Sec.-5, IMT Manesar, Gurugram-122051 (Haryana)

E-MAIL: projects@vardanenvironet.com

CONTACT: 0124-4291036, 09899651342

DLF LIMITED

DLF Galway Tower, R Block, DLF City, Phase-III, Gurgaon-122002

**Dated: 21.04.2022**

To,
The Member Secretary,
State Environment Impact Assessment Authority,
Bays No.:-55-58, Paryatan Bhawan
1st Floor, Sector-2, Panchkula, Haryana

Subject: Submission of Final EIA/EMP report for Proposed Group Housing Buildings in Zone 10, DLF 5, at Sector-54, Gurugram, and Haryana is being developed by M/s DLF Ltd.

Reference: ToR Letter No. SEIAA(137)/HR/2022/733 Dated 08.04.2022

Dear Sir,

This is in reference to the subject mentioned above; we would bring into your notice that the application for above said project was submitted to SEIAA, Haryana and the ToR was granted on 08.04.2022. The EIA Study was conducted and EIA report was prepared based on the approved ToR. We are hereby submitting the final EIA/EMP report after incorporating the ToR points for obtaining Environmental Clearance from SEIAA, Haryana.

The documents being submitted online & hard copies are enclosed:

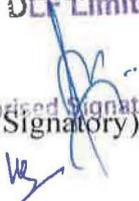
- The Final EIA/EMP report (Hard & Soft both)

Therefore, in view of the above, we hereby request you to kindly process our case for issuance of Environmental Clearance to the project.

Thanking you

Yours faithfully,

For M/s **DLF Ltd.**
For DLF Limited

(Authorized Signatory)


REVIEW AND REVISION HISTORY

History of revisions of the present report:

Table I: History of the Revisions

S. No.	Rev.	Date	Modifications	Remarks
1.	Rev. 00 Final	April, 2022	EIA /EMP Report	Report has been prepared by team Vardan and all comments of reviewers have been incorporated in the EIA/EMP Report.

Table II: Record of Review

Rev.	Date	Description	Review-1	Approval
Rev.00 Final	April, 2022	EIA/EMP Report	Mr. Aman Sharma	Mr. R.S. Yadav
-	-	The EIA EMP report has been prepared by Mr. Ankur Agarwal (EIA coordinator) and assisted by Mr. Sonu and other team members.	<i>Aman Sharma</i>	<i>RS</i>

This Report has been prepared by **Vardan EnviroNet** on behalf of and for the use of M/s DLF Ltd. with due consideration and skill as per our general terms and conditions of business and terms of agreement with M/s DLF Ltd.



DISCLAIMER

Vardan EnviroNet has taken all reasonable precautions in the preparation of this report as per its auditable quality plan. Vardan EnviroNet also believes that the facts presented in the report are accurate as on the date it was written. However, it is impossible to dismiss absolutely, the possibility of errors or omissions. Vardan EnviroNet therefore specifically disclaims any liability resulting from the use or application of the information contained in this report. The information is not intended to serve as legal advice related to the individual situation.



Declaration by Experts contributing in report preparation of Proposed Group Housing Buildings in Zone 10, DLF 5, at Sector-54, Gurugram, and Haryana is being developed by M/s DLF Ltd.

Declaration by Experts contributing:

I, hereby, certify that I was part of the EIA team in the following capacity that developed the above EIA.

EIA Co-ordinator:

Name : **Mr. R.S. Yadav**

Signature & Date : 

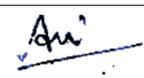
Period of involvement: **1st December, 2021 to 28th February , 2022**

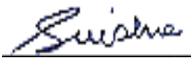
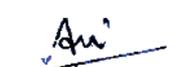
Contact information : Plot no.-82 A, Sector-5, IMT Manesar, Gurugram, Haryana

Contact no: 9899651342

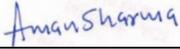
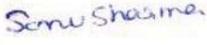
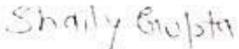
Email: projects@vardanenviromet.com

Functional Area Experts (FAEs):

S. No.	Functional Areas	Name of the Expert/s	Involvement	Signature & Date
1.	AP	Mr. Shubham Tyagi	a) Identifying the sources of emissions and mitigation measures. b) Site-specific micro meteorology monitoring. c) Ambient Air Quality (AAQ) monitoring Impact predictions and mitigations. d) Impact Identification	
2.	WP	Ms. Avi	a) selection of sampling locations b) Ground water quality monitoring and assessment, impacts on water environment and mitigations. c) Identification, characterization of effluent and treatments there of d) Water balance and conservation measures	
3.	SHW	Pawan Kumar Verma	a) Identification of haz, solid w.g, and their disposal and mitigation measure.	

			b) Recycling and disposal	
4.	SE	Ms. Shilpa Mishra	a) Determination of demographic profile including socio economy & livelihood b) Assessing the changes in socio economic pattern	
5.	EB	Mr. Niteesh Kumar	a) Biological environment status in respect of terrestrial fauna and aquatic eco system. b) Impact on ecological environment.	
6.	HG/Geo	Mr. R.S. Yadav	a) Ground water resource assessment. b) Impact on ground water potential and mitigation measures for avoiding ground water contamination.	
7.	AQ	Ms. Avi	a) Processing of site specific micro-meteorological data. b) Collection and use of data for modelling. c) Air dispersion modelling for prediction of GLCS due to PM10, SO2 and NOx	
8.	NV	Neeraj Parihar	a) Analysis of ambient noise quality data b) Impact due to plant noise and abatement measures	
9.	LU	Mr. Ankur Agarwal	a) Analysis of data related to land use pattern b) Land use map development. c) Impact on land environment in respect to land form change	
10.	RH	Ms. Shweta Ghildiyal	a) Identification of hazardous prone areas b) Environment risk evaluation c) On-site and Off-site emergency planning	
11.	SC	Sameer Vilasrao Deshpande	a) Monitoring, analysis and characterization of soil. b) Assessment of impact on soil quality and mitigation measure.	

List of Team Members/Other Member Involved

Mr. Anshul Yadav	
Mr. Aman Sharma	
Mr. Sonu Sharma	
Ms. Shaily Gupta	
Ms. Manwi Mishra	

Declaration by the Head of the accredited consultant organization/ authorized person.

I, R.S. Yadav, hereby, confirm that the above mentioned Proposed Group Housing Buildings in Zone 10, DLF 5, at Sector-54, Gurugram, and Haryana is being developed by M/s DLF Ltd.

I, hereby, certify that I was a part of the EIA team in the following capacity that developed the above EIA.

I also confirm that I shall be fully accountable for any mis-leading information mentioned in this statement.

Name: **R.S. Yadav**



Signature

Designation: **Managing Partner**

Name of the EIA Consultant Organization:

Vardan EnviroNet, QCI/NABET Accredited Environment Consultancy

NABET Certificate No. & Issue Date: NABET/EIA/2023/SA0158 valid up to 05.05.2023.

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ABBREVIATIONS	
AAQM	Ambient Air Quality Monitoring
APCD	Air Pollution Control Devices
Cm	Centimeter
CPCB	Central Pollution Control Board
dB	Decibel
DG	Diesel Generator
E	East
ECC	Emergency Control Centre
EIA	Environmental Impact Assessment
EMC	Environmental Management Cell
EMP	Environmental Management Plan
ENE	East of North- East
EPA	Environmental Protection Agencies
ESE	East of South East
FCC	False Colour Composite
GIS	Geographical information system
GLC	Ground level concentration
GPS	Global Positioning System
IMD	Indian Meteorological Department
IRS	Indian Remote Sensing Satellite
ISO	International Organization of Standardization
ISS	Indian Standard Specification
KLD	Kilo Litre Per Day
Km	Kilometer
KVA	Kilo Volt Ampere
KW	Kilo Watt
m	Meter
M bgl	Meter Below Ground Level
mg	Milligram
MoEF&CC	Ministry of Environment, Forest and Climate Change
mRL	Mean Reference Level
N	North
NE	North-East
NH	National Highway
NNE	North of North-East
NNW	North of North-West
NO ₂	Nitrogen Dioxides
NTU	Naphelo Turbidity Unit
NW	North-West
OHSAS	Occupational Health & Safety Assessment
PPE	Personal Protective Equipment
PPM	Part Per Million
Pvt.	Private
QC	Quality Council
QCI	Quality Council of India
QRA	Quantitative Risk Assessment

ABBREVIATIONS	
RSPM	Respirable Suspended Particulate Matter
SE	South- East
SEIAA	State Level Environmental Assessment Authority
SO ₂	Sulphur-Di-Oxide
SOI	Survey of India
SSE	South of South-East
SSW	South of South-West
STP	Sewage Treatment plant
TAC	Traffic Advisory Committee
TDS	Total Dissolve Solid
TOR	Terms of Reference
µg/m ³	Micro gram per meter cube
VOC	Volatile organic matter
w.e.f.	With Effective From
w.r.t.	With Reference To
ZLD	Zero Liquid Discharge

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY HARYANA
Bay No. 55-58, Prayatan Bhawan, Sector-2, PANCHKULA.

Tel: 0172-2565232, 4043956
E-mail Id: seiaa-21.env@hrv.gov.in

No. SEIAA(137)/HR/2022/ 733

Dated: 08/04/2022

To

M/s DLF Ltd.
DLF Shopping Mall, 3rd Floor, Arjun Marg, DLF City,
Phase-1, Gurugram-122002
Email Id: kaushik-lalit@dlf.in

Subject: ToR for Proposed Group Housing Building in Zone 10, DLF 5 at Sector 54, Gurugram, Haryana.

This has reference to your Proposal No. SIA/HR/MIS/73368/2022 through PARIVESH Portal for the approval of ToR (Terms of Reference) under category 8 (b) for undertaking detailed EIA Study for the purpose of obtaining Environment Clearance in accordance with the provisions of EIA Notification, 2006 along with **Scrutiny Fee amounting to Rs. 2,00,000/- vide DD No. 520455 dated 09.03.2022** in compliance of Haryana Government, Environment & Climate Change Notification No. DE&CCH/3060 dated 14th October, 2021. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification, 2006 on the basis of the mandatory documents by the State Expert Appraisal Committee (SEAC) constituted by MoEF & CC, GoI vide their Notification dated 30.01.2019, in its **236th meeting held on 27.03.2022 and recommended to SEIAA for grant of Terms of Reference.**

The details of the proposal as under:

Sr. No.	Particulars	
1.	Online Project Proposal Number	SIA/HR/MIS/73368/2022, Dated 09.03.2022
2.	Latitude	28°26'44.55"N
3.	Longitude	77°06'48.93"E
4.	Plot Area	30,653.317m ² (7.574 acres)
5.	Proposed Ground Coverage	6,369.381 m ² (20.77%)
6.	Proposed FAR	1,43,937.510m ²
7.	Non FAR Area	89,440.488m ²
8.	Total Built Up area	2,33,377.998m ²
9.	Total Green Area with Percentage	9,195.995m ² (30% plot area)
10.	Rain Water Harvesting Pits	8 Nos.
11.	STP Capacity	DLF-5 Common STP of 15 MLD
12.	Total Parking	1,615 ECS
13.	Organic Waste Converter	Total 2 nos. of Organic waste converters of capacity 1,500 Kg/day (1×1,250 Kg/day+1× 250Kg/day)
14.	Maximum Height of the Building (till terrace)	109.350 m

15.	Power Requirement	5,874 KW (DHBVN)
16.	Power Backup	5 DG sets of total capacity 8,250 KVA (3×2000 KVA + 1×1250 KVA+ 1×1000 KVA).
17.	Total Water Requirement	391 KLD
18.	Domestic Water Requirement	255 KLD
19.	Fresh Water Requirement	255 KLD
20.	Treated Water	136 KLD
21.	Waste Water Generated	294 KLD
22.	Solid Waste Generated	2,069 kg/day
23.	Biodegradable Waste	1,241 kg/day
24.	Number of Blocks	4nos
25.	No. of Floors for Blocks	S+33
26.	Dwelling Units	520 Nos
27.	EWS Unit	--
28.	Service personnel units	50 Nos
29.	Salable Units	-
30.	Basement	4 Nos
31.	Community Building	1483.404 m ²
32.	Convenient Shopping	--
33.	Stories	S+33 Floors
34.	R+U Value of Material used (Glass)	We will provide at time of EIA
35.	Total Cost of the project:	1076 Cr.
	i) Land Cost	
	ii) Construction Cost	

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 **138th Meeting held on 29.03.2022.**

The Authority **approved the "Terms of Reference"** and it was decided that you have to prepare Environment Impact Assessment Report and Environment Management Plan for obtaining Environment Clearance by using Model Terms of Reference as per MoEF & CC with the additional Terms of Reference as recommended by **SEAC in its 236th meeting held on 27.03.2022:**

Standard Terms of Reference

- [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 analyzed with measures for preventing traffic congestion and providing faster trouble free system to reach different destinations in the city.
- [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>".

Additional TOR

1. The PP shall submit the self-contained note mentioning the details of earlier EC for 456 acres along with chronology of all EC granted for the project.
2. The PP shall submit the details of nala passing through the project and its level.
3. The PP shall submit the contour plan in reference to levels of nala.
4. The PP shall submit the maps of 5.86 resolution of GIS.
5. The PP shall also submit the drainage plan of project in consonance with total project of 456 acres
6. The PP shall submit the status of construction at the site.
7. The PP shall submit the proof along with affidavit that no construction has been done after the expiry of EC.
8. The PP shall submit the certified compliance report from MOEF&CC.
9. The PP shall submit the activity wise break up area of the project
10. The PP shall submit the duly approved plan.
11. The PP shall submit the drainage map with contour of each area of the project
12. The PP shall submit the hydraulic design details of STP proposed at the site.

13. The PP shall submit the affidavit that no legal case is pending against the PP regarding land or any other issues of the project.
14. The PP shall submit the KLM file of the project site
15. The PP shall submit the land use details of the project
16. The PP shall submit the Geo Technical Studies
17. The PP shall submit the Population calculations as per NBC norms.
18. The PP shall submit the seasonal testing reports of water, air, soil and noise
19. The PP shall submit the technology of water treatment, hydraulic design, dimensions of each component of each STP, MLSS standards to be achieved in each STP
20. The PP shall submit the Solid waste calculations and its management plan
21. The PP shall submit the traffic study incremental load analysis wr.t.current roads/status of connecting roads a up-gradation plan.
22. The PP shall submit the air dispersion modeling, sampling locations, wind rose, DG/vehicular emission data, AAQ data of seven locations.
23. The PP shall submit the ECBC Compliance with Energy saving
24. The PP shall submit the RWH details based on calculation @ 90 mm rain fall and double bore well for better sustainable RWH
25. The PP shall submit the parking calculations along with Map
26. The PP shall submit the tangible EMP Capital and recurring cost for the project
27. The PP shall submit the biodegradable waste management plan of the project along with organic waste convertor. The schematic diagramme for the management of organic waste and calculation along with mode of collection, segregation, transportation and disposal of complete Biodegrade waste.

The Project Proponent will submit Environment Impact Assessment Report and Environment Management Plan 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 your project will be considered as received only after receipt of complete information.

S. Lalajain
8/14/22
Member Secretary,
SEIAA, Haryana

POINTWISE COMPLIANCE OF ToR

S. No.	TOR Point	Reply	Citation
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.	EIA/EMP study has been carried out in an area covering a circle of radius of 10 km with project area as the center. Land use map is given in the EIA report.	Chapter-3 Table no.-3.1 and Fig no-3.1 at Page no-34 & 35 in Volume-II (EIA report)
2.	Submit details of environmentally sensitive places, land acquisition status, rehabilitation of communities/ villages and present status of such activities.	The project had received License from the Directorate of Town & Country Planning, Haryana with 8 Licenses for 7.574 Acres (License No. 38, 52, 53 of 1996 dated 16/04/1996 which is valid up to 15/04/2024, License No. 129, 131, of 1995 dated 29/12/1995 which is valid up to 28/12/2024 and License No. 02, 04, 06 of 2002 dated 25/10/2002 which is valid up to 24/10/2024). is attached as Annexure in EIA report. Asola Bhatti Wildlife Sanctuary situated at a distance of approx. 5.7 Km towards East direction from project site. Key plan for 10 km radius is given in EIA chapter.	Annexure-10 at Page no-215- 237 in Volume-III Chapter-2 Fig no-2.3 at Page no-15 in Volume-II (EIA report)
3.	Examine baseline environmental quality along with projected incremental load due to the project.	Baseline environmental quality data has been carried out in pre monsoon period (1 st December 2021 – 28 th February 2022). Summary of baseline data has been given in Chapter-3.	Chapter-3 Table no-3.3 to 3.16 and Fig no-3.3 to 3.13 at Page no- 37 to 73 in Volume-II (EIA report)



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		And the analysis report of laboratory is enclosed in Annexure in the EIA report. The incremental value of emission of pollutant due to activity has been analyzed and mentioned in EIA Report.	Annexure-38 at Page no- 352-415 in Volume-III Chapter-4. Table-4.4 at Page no.- 121 and Fig -4.1 to 4.5 at Page no-124-128 in Volume-II (EIA report)
4.	Environmental data to be considered in relation to the project development would be (a) Land, (b) Ground water, (c) Surface Water, (d) Air, (e) Bio-Diversity, (f) Noise And Vibrations, (g) Socio Economic and Health.	The following points have been covered under the EIA/EMP report.	Chapter-3 at Page no- 32 to 112 in Volume-II (EIA report)
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	Contour Plan with slopes, drainage pattern of the site and surrounding area is discussed in EIA/EMP report	Chapter-2 Fig.- 2.7 & 2.8 Page No-26 and 27 respectively in Volume-II
6.	Submit the details of the trees to be felled for the project.	In case cutting is required than we will take prior permission from concerned department to cut the trees	
7.	Submit the present land use and permission required for any conversion such as forest, agriculture etc.	There is no forest land involved in this project. Forest NOC is attached as Annexure in EIA report.	Annexure-28 at page no. 334-336 in Volume-III
8.	Submit Roles and responsibility of the developer etc. for	The Environmental Monitoring Cell will be constituted for maintaining	



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	compliance of environmental regulations under the provisions of EP Act,	environmental regulations under the provision of EP Act. After grant of EC we will submit proper half yearly compliance report with all details and deliberations.	
9.	Ground water classification as per the Central Ground Water Authority.	There is no extraction of Ground Water as the water will be supplied by DLF Water Tanks. Water assurance is attached as Annexure in EIA report.	Annexure-30 at page no. 338-339 in Volume-III
10.	Examine the details of Source of water, water requirement, use of treated waste water and prepare a water balance chart.	Water will be supplied by DLF Water Tanks. Total water requirement is 391 KLD Water balance diagram and calculation of water is given in EIA report.	chapter-2, Fig No- 2.4 to 2.6 at Page no-19, 21 & 23 respectively and Table no-2.3 to 2.5 at Page no-18, 20 & 22 respectively in
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.	1631.99 m ² water will be harvested and for this 8 no. of RWH pits are being proposed for Group housing Buildings project. Calculated details are given in Chapter-4	Chapter-4, Table no.-4.5 at page no.-133 in Volume- II (EIA report)
12.	Examine soil characteristics and depth of ground water table for rainwater harvesting.	During the baseline study 8 soil samples are collected and their physicochemical analysis data are given in the EIA report. Rain water harvesting detail given in the EIA report.	Chapter-3 Table no-3.3 & 3.4 at Page no-38 to 43 in Volume-II Chapter4, Table no.-4.5 at page no.-133 in Volume- II (EIA report)
13.	Examine details of solid waste generation treatment and its	Total 2,069 kg/day of solid waste is generated during operation phase	Chapter-7 Table No-7.7 at



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	disposal.	which will be treated in Organic waste composter of total capacity 1500 kg/day in 2 nos. of Organic waste converters of capacity 1,500 Kg/day (1×1,250 Kg/day+1× 250Kg/day) Details are discussed in EIA report.	page no-182 in Volume-II
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.	Details of use of solar energy and alternative source of energy given in the EIA report. We will be installing 40 KWp Solar PV for our project site.	Chater-5 Paragraph-5.3 at Page no-150 to 152 in Volume-II
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.	Proposed Group housing buildings, the emission from DG sets, are given in the EIA/EMP report. There is provision of 5 nos. of DG sets having of capacity of 8,250 KVA (3×2,000KVA+1×1250KVA+1×1000 KVA)	Chapter-4 Paragraph 4.3.3 at Page no-118 in Volume-II
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 analyzed with measures for preventing traffic congestion and providing faster trouble free system to reach different destinations in the city.	Detailed Traffic study was carried out during baseline monitoring and The LOS value from the proposed Group Housing project same i.e. LOS value for NH-248A, SH-15A and MDR-137 will remain same as Excellent, NH-48 & NH-148A will remain same as 'Very Good' So, the additional load on the carrying capacity of the concern roads is not likely to have major effect. Detail of Traffic study is given in EIA report.	Chapter-4 Point no-4.9 at Page no-140 to 142 in Volume-II
17.	A detailed traffic and transportation study should be made for existing and projected passenger and cargo traffic.	The LOS value from the proposed Group Housing project same i.e. LOS value for NH-248A, SH-15A and MDR-137 will remain same as Excellent, NH-48 & NH-148A will remain same as 'Very Good' So the additional load on the carrying capacity of the concern roads is not likely to have major affect.	Chapter 4 Table no-4.8 at Page no-141 in Volume-II



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18.	Examine the details of transport of materials for construction which should include source and availability.	Construction materials will be source from the nearby market and transported at the project site via trucks/trolley/tractors.	
19.	Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan with cost and parameters.	Details for construction and operation phases both for Environmental Management Plan is given in EIA report. Environmental Monitoring Plan with cost and parameters are discussed in EIA report.	Chapter-10 Point no- 10.1 at Page no-190 in Volume-II Chapter-6 Table no-6.1 & 6.2 at page no- 155 and 156 in Volume-II
20.	Submit details of a comprehensive Disaster Management Plan including emergency evacuation during natural and man-made disaster.	Disaster Management Plan including emergency evacuation during natural and man-made disaster is given in EIA report.	Chapter-7 Paragraph 7.3 at Page no-171 in Volume-II
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 our project site. Affidavit regarding same is attached as Annexure in EIA report.	Annexure-29 at page no. 337 in Volume-III
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.	Environmental Monitoring Plan with cost and parameters are discussed in EIA report.	Chapter-10 Point no- 10.1 at Page no-190 in Volume-II
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	No additional impacts are anticipated from proposed project.	
	Additional ToR		
1.	The PP shall submit the self-contained note mentioning the details of earlier EC for 456	Self-contained note mentioning the details of earlier EC granted is attached as Annexure in EIA report.	Annexure-32 at page no. 410 in Volume-III



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	acres along with chronology of all EC granted for the project.		
2.	The PP shall submit the details of nallah passing through the project and its level.	There is no nallah passing through our project site.	
3.	The PP shall submit the contour plan in reference to levels of nallah.	There is no nallah passing through our project site.	
4.	The PP shall submit the maps of 5.86 resolution of GIS.	The map of 5.86 resolutions of GIS is given in EIA report.	chapter-3, Fig No- 3.2 at Page no-36 in Volume-II
5.	The PP shall also submit the drainage plan of project in consonance with total project of 456 acres.	Drainage plan of total land is attached as Annexure in EIA report.	Annexure-27 at page no. 333 in Volume-III
6.	The PP shall submit the status of construction at the site.	We have not carried out any construction activity at our project site of total plot area of 30,653.317 m ² / 7.574 Acres (which is part of Phase-V Group Housing Scheme of 476.6015 Acres). No construction affidavit is attached as Annexure in EIA report.	Annexure-29 at page no. 337 in Volume-III
7.	The PP shall submit the proof along with affidavit that no construction has been done after the expiry of EC.	This project is a fresh project. No Construction Affidavit and geo tag photographs regarding same are attached as annexure in EIA report.	Annexure-29 at page no. 337 in Volume-III Annexure-6 at page no. 208 in Volume-III
8.	The PP shall submit the certified compliance report from MOEF&CC.	This project is a fresh project thus certified compliance report is not applicable on our project.	
9.	The PP shall submit the activity wise break up area of the project	Activity wise break up area of the project is given in EIA report.	Chapter-2 Table no.2.1 Page No-15 in Volume-II
10.	The PP shall submit the duly approved plan.	We have submitted EC application on the conceptual plan only. At present the plan is yet to be approved from concerned department.	
11.	The PP shall submit the drainage map with contour of each area of	Contour Plan with slopes, drainage	Chapter-2



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	the project	pattern of the site and surrounding area is discussed in EIA/EMP report	Fig.- 2.7 & 2.8 Page No-26 and 27 respectively in Volume-II
12.	The PP shall submit the hydraulic design details of STP proposed at the site.	Technology of STP (SBR & MBR) details is attached as Annexure in EIA Report.	Annexure-33 at page no. 411- 422 in Volume-III
13.	The PP shall submit the affidavit that no legal case is pending against the PP regarding land or any other issues of the project.	Affidavit that no legal case is pending against the PP regarding land or any other issues of the project is attached as Annexure in EIA report.	Annexure-29 at page no. 337 in Volume-III
14.	The PP shall submit the KLM file of the project site	KML is attached as Annexure in EIA report.	Annexure-34 at page no. 423 in Volume-III
15.	The PP shall submit the land use details of the project	The same has been mentioned in point no.1 of standard ToR.	
16.	The PP shall submit the Geo Technical Studies.	Soil Investigation report is attached as Annexure in EIA report.	Annexure-31 at page no. 340- 409 in Volume-III
17.	The PP shall submit the Population calculations as per NBC norms.	Population calculations as per NBC norms are given in EIA Report.	Chapter-2 Table no.-2.2 at page no.-17 in volume-II
18.	The PP shall submit the seasonal testing reports of water, air, soil and noise.	Reports of water, air, soil and noise is attached as Annexure in EIA Report.	Annexure-22 at page no. 267 to 328 in Volume-III
19.	The PP shall submit the technology of water treatment, hydraulic design, dimensions of each component of each STP, MLSS standards to be achieved in each STP.	Technology of STP (SBR & MBR) details is Annexure in EIA Report.	Annexure-33 at page no. 411- 422 in Volume-III
20.	The PP shall submit the Solid waste calculations and its management plan.	The same has been mentioned in point no.13 of standard ToR.	
21.	The PP shall submit the traffic study incremental load analysis wr.t. current roads/status of connecting roads a up-gradation plan.	Detailed Traffic study was carried out during baseline monitoring and The LOS value for NH-248A, SH-15A and MDR-137 will remain same as Excellent, NH-48 & NH-148A will remain same as 'Very Good' So the	Chapter 4 Table no-4.8 at Page no-141 in Volume-II

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		additional load on the carrying capacity of the concern roads is not likely to have major affect. Detail of Traffic study is given in EIA report.	
22.	The PP shall submit the air dispersion modeling, sampling locations, windrose, DG/vehicular emission data, AAQ data of seven locations.	AQ report is attached as Annexure in the EIA report.	Annexure-21 at page no. 261-266 in Volume-III
23.	The PP shall submit the ECBC Compliance with Energy saving.	We will follows ECBC Compliance with Energy saving.	
24.	The PP shall submit the RWH details based on calculation @ 90 mm rain fall and double bore well for better sustainable RWH	The same has been mentioned in point no.11 of standard ToR.	
25.	The PP shall submit the parking calculations along with Map.	Parking calculations is given in Conceptual plan. Surface & Basement Parking plan is attached as Annexure in EIA Report.	Chapter-2 Paragraph no.-2.6 at page no.-24-25 in volume-II (EIA report) Annexure-15 at page no. 243-245 in Volume-III
26.	The PP shall submit the tangible EMP Capital and recurring cost for the project.	EMP budget is given in EIA Report.	Chapter-10 at page no-193 in Volume-II
27.	The PP shall submit the biodegradable waste management plan of the project along with organic waste convertor. The schematic diagram for the management of organic waste and calculation along with mode of collection, segregation, transportation and disposal of complete Biodegrade waste.	The same has been mentioned in point no.13 of standard ToR.	



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(I) BASIC INFORMATION

S. No.	Items	Details
1	Name of the Project	Proposed Group Housing Buildings in Zone 10, DLF 5, at Sector-54 Gurugram, Haryana by M/s DLF Ltd.
2	Serial No. in schedule	8 (b) "Townships and Area Development Projects" as per MoEF notification 14/9/2006
3	Proposed capacity/area/length/tonnage to be handled/command area/lease area/number of wells to be drilled:	
	Type of project	Group Housing Buildings
	Plot area	30,653.317 m ² / 7.574 Acres (which is part of Phase-V Group Housing Scheme of 476.6015 Acres)
	Proposed Ground Coverage	6,369.381 m ² (20.77%)
	Floor area ratio (FAR)	1,43,937.510 m ²
	Non-FAR	89,440.488 m ²
	Built-up area (FAR+ Non FAR)	2,33,377.998 m ²
	Number of Floors	Stilt+33 Floors + 4 level Basements
	No. of Dwelling Units	Main DU: 520 nos, Service Personnel Unit: 52 nos
	Project cost	1,076 Crore
4	New/Expansion/Modernization	New
5	Existing capacity/area etc.	Not applicable
6	Category of project	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	i) Location of unit ii) Khasra No. iii) Village iv) Tehsil v) District	Sector-54, Gurugram, Haryana Latitude- 28°26'44.55"N Longitude- 77°06'48.93"E Rect/KillaNo. 2046//1/2,2,1/1,2047//1,2, 2048,2049, 2050//1,2 Wazirabad Gurugram Gurugram

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	vi) State	Haryana
10	Nearest Railway station/Airport along with distance in Kms.	<ul style="list-style-type: none"> ✓ Gurgaon railway station – ~11 Km, towards NW direction ✓ Indira Gandhi International Airport – ~10.3 Km, towards N direction
11	Nearest town, City, Distt. Head Quarter along with distance in Kms.	<ul style="list-style-type: none"> ➤ Wazirabad – ~Adjacent from the project side ➤ Chakkarpur – ~3.7 Km towards NW direction ➤ Behrampur- ~4.2 Km towards South direction
12	Village Panchayat, ZilaParishad, Municipal Corporation, Local body(Complete postal addresses with telephone nos. to be given)	Municipal Corporation of Gurugram, C-1, Info Technology Park, Sector 34, Gurugram, Haryana-122001 1800 180 1817
13	Name of Applicant	M/s DLF Ltd
14	Regd. Address	At DLF Shopping Mall. 3rd Floor. Arjun Marg, DLF City, Phase-1. Gurugram-122002 Haryana
15	Address for correspondence(1): Name Designation Address Pin Code E mail Telephone Fax No.	At DLF Shopping Mall. 3rd Floor. Arjun Marg, DLF City, Phase-1. Gurugram-122002 Haryana Mr. Alok Kumar Authorized Signatory At DLF Shopping Mall. 3rd Floor. Arjun Marg, DLF City, Phase-1. Gurugram-122002 Haryana 122002 kaushik-lalit@dlf.in +91-124-4769000 +91-124-4769250
	Address of correspondence(2):	Environment Consultant Vardan Environet Plot No. 82A, Sec.-5, IMT Maneser, Gurugram-122051(Haryana) Phone: 0124-4222130, 9810355569 Email: projects@vardanenvironet.com
16	Detail of alternative site, if any. Location of these sites should be shown on a topo-sheet.	This is Proposed Group Housing Buildings in Zone 10, DLF 5, at Sector-54 Gurugram, Haryana by M/s DLF Ltd for which license has already been awarded by Director of Town and Country Planning and Zoning plan is also approved.

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		Hence, Not applicable in this case.
17	Interlinked Project	There is no any interlinked project.
18	Whether separate application for interlinked project has been submitted	Not Applicable. In view of item No. 17 above
19	If, Yes Date of Submission	Not Applicable. In view of item No. 17 above
20	If no , reason	Not Applicable. In view of item No. 17 above
21	Whether proposal involves approval/clearance under: if yes, details of same and status to given a) Forest (conservation) Act 1980? b) Wild life protection Act 1972? c) CRZ notification 1991?	No forest land is involved in the project site. Forest NOC has been annexed. No. The unit does not fall in any notified Wild life protection area. No. The unit does not fall in any Notified coastal regulation zone.
22	Whether there is any Govt. order/policy relevant/relating site?	No
23	Forest land involved (hectares)	No Forest land is involved in the proposed project.
24	Whether there is any litigation pending against the project and / or land in which is project is proposed to be setup: a) Name of court b) Case No. c) Orders/directions of Court, if any and its relevance with the proposed project.	There is no litigation pending against the project and land. Therefore, Information required against point a, b & c is not applicable.

(II) ACTIVITY:

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
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1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	No	The land falls under the residential zone as per the Gurgaon- Manesar Master Plan 2031. The project had received License from the Directorate of Town & Country Planning, Haryana with 8 Licenses for 7.574 Acres (License No. 38, 52, 53 of 1996 dated 16/04/1996 which is valid up to 15/04/2024, License No. 129, 131, of 1995 dated 29/12/1995 which is valid up to 28/12/2024 and License No. 02, 04, 06 of 2002 dated 25/10/2002 which is valid up to 24/10/2024). Hence, no change in land use will taking place.
1.2	Clearance of existing land, vegetation and building?	Yes	This is a proposed Group Housing Buildings project. In case cutting is required than we will take prior permission from concerned department to cut the trees.
1.3	Creation of new land uses?	No	The proposed site has been licensed for the development of Group Housing Buildings & the same will be developed at this site. So, no creation of new land use is anticipated.
1.4	Pre-construction investigations e.g. house, soil testing?	Yes	Soil investigation was carried out and the results were found satisfactory.
1.5	Construction works?	Yes	The construction activities will be confined within the project premises; there will be no physical change outside the project boundary.
1.6	Demolition works?	No	Project site is subjected to construction is Vacant Land. Hence, no demolition work is required.
1.7	Temporary sites used for construction works or Housing of construction workers?	No	All the construction activity including stocking of raw materials will be confined within the project site only. No temporary shelters for labour are proposed. Local labours from nearby area will be hired. Sanitation facilities will be developed at site.
1.8	Above ground building, structures or Earthworks including linear structures, cut and fill or excavations	Yes	The building of the project will be erected upto 33 floors from stilt area as per the floors of Group Housing Buildings project.

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1.9	Underground work including mining or tunneling?	No	No underground work including mining/tunneling is required.
1.10	Reclamation works?	No	No reclamation work is required.
1.11	Dredging?	No	No dredging is required.
1.12	Offshore structures?	No	No offshore structure is required.
1.13	Production and manufacturing processes?	No	No production/manufacturing process is involved as the proposed project is a construction of proposed Group Housing Buildings Project.
1.14	Facilities for storage of goods or materials?	Yes	Raw material will be stored at site in a covered area. Cement will be separately stored under cover in bales. Sand will be stacked neatly under tarpaulin cover. Bricks and steel will be laid in open.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	<p><u>Solid Waste:</u> The solid waste generated from the project will be in the form of:</p> <p><u>Domestic Waste:</u> During construction solid waste will be minimal & clean regularly. During operation, approximately 2,069 Kg/day domestic solid waste is estimated to be generated from the project activity; this will be collected from designated locations and segregated into inorganic and organic wastes. The inorganic non-biodegradable wastes will be sold to authorize vendors for recycling and the biodegradable wastes will be treated in OWC within the project according to SWM (Solid Waste Management) Rules, 2016.</p> <p><u>Hazardous Waste:</u> No hazardous waste will be produced from project activities except some spent oil (Category 5.1) generated from D.G. sets; which will be sold to recyclers authorized by Haryana State Pollution Control Board.</p> <p><u>Liquid effluents:</u></p>

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			<p>During construction phase, sewage will be treated in modular STP.</p> <p>The wastewater in operation phase will be treated up to tertiary level in DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) and the treated sewage will be reused for flushing and horticulture.</p> <p>Dewatered/dried sludge generated from the STP plant will be used as manure for green belt development.</p>
1.16	Facilities for long term housing of operational workers?	No	Local labors will be hired from nearby areas during construction phase. So, there will be no need to create permanent facilities for long-term housing of operational workers.
1.17	New road, rail or sea traffic during construction of operation?	No	The site has good connectivity to MDR-137, NH-148A and NH-48. Only internal roads, paths will be developed for vehicular movements for transportation of construction material during construction phase whereas internal tracks and paths will be developed for traffic circulation (to avoid any congestion) during operational phase.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airport etc?	No	The site is well connected through the road network. The nearest highway is NH-148A which is ~3.5 Km away from project site towards North direction and NH-48 which is ~5.5 Km away from project site towards NW Direction.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	No diversion or closure of existing traffic routes is required.
1.20	New or diverted transmission lines or pipelines?	No	There will not be any new/diverted transmission line or pipeline around the proposed project.
1.21	Impoundment, damming, culverting,	No	No impoundment, damming, culverting,

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	realignment or other changes to the hydrology of watercourses or aquifers?		realignment or other changes to the hydrology of surface watercourses is proposed.
1.22	Stream crossings?	No	There is no stream running across the site.
1.23	Abstraction or transfers of water from ground or surface waters?	No	Total water requirement of proposed project will be 391 KLD, which include 255 KLD for fresh water requirement, and about 136 KLD treated water shall be reused for the various purpose like horticulture and flushing. The source shall be DLF Water Tanks. Wastewater generated will be 294 KLD which will be treated in DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises. During construction phase, water demand will be fulfilled from nearby DLF Site.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	Runoff will increase due to increased paved surface. However, increased runoff will be managed by well-designed rainwater harvesting system and storm water management plan.
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 within the project site for loading and unloading of materials will be provided. Adequate internal parking space (1,615 ECS) will be provided during operational phase of the project to the occupants of the premises..
1.26	Long-term dismantling or decommissioning or restoration works?	No	No Long term dismantling or decommissioning or restoration work will be involved.
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	No decommissioning activity is involved, Hence, No impact on the environment by the proposed project is supposed.

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1.28	Influx of people to an area in either temporarily or permanently?	Yes	100 Local laborers from nearby area will be employed during the construction phase. In the operation phase, there will be an influx of 4,508 persons in the form of residents & visitors. No alien species will be involved.
1.29	Introduction of alien species?	No	The landscaping will be carried out with mainly local species with a few ornamental varieties of flora that are well suited to the local conditions.
1.30	Loss of native species or genetic diversity?	No	There will be no significant impact on the native species or genetic diversity.
1.31	Any other Accents	No	Not Applicable

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	Land has been used for residential purpose under Master Plan of Gurgaon-Manesar Urban Complex-2031. Hence, Group Housing Buildings project will be constructed on the land of the project site.
2.2	Water (expected source & competing users) unit: KLD	Yes	Total water requirement for the proposed project will be 391 KLD , which include 255 KLD for fresh water requirement, 136 KLD treated water requirement for the horticulture and flushing etc. During construction phase, water demand will be fulfilled by STP treated water from nearest DLF Site
2.3	Minerals (MT)	Yes	Minerals such as sand and aggregates will be required during the construction phase.
2.4	Construction material – stone, aggregates, and/soil (expected source – MT)	Yes	All materials for construction will be arranged through selected suppliers.
2.5	Forests and timber (source – MT)	Yes	All material forests and timber will be provided by selected suppliers. However,

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			steel frames etc. shall be used to minimize the use of timber.
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	The expected power demand of 5,874 KW will be supplied by DHBVN. Power backup for the proposed project will be through 5 DG sets of total capacity 8,250 KVA (3×2000 KVA + 1×1250 KVA+ 1×1000 KVA).
2.7	Any other natural resources (use appropriate standard units)	No	No other natural resource will be involved in the project except the mentioned above.

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 substance or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna and water supplies)	No	This is proposed group housing buildings project, Hence, No storage of hazardous chemicals (as per MSIHC Rules) will be done except HSD. HSD is required to run standby D.G. sets, for which the stored quantity of diesel will be below the threshold limit specified in the MSIHC rules. Necessary permission will be obtained from the Departments if required as per norms.
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 (with frequent spray of insecticides etc.) will be adopted in both the construction and operational phase such that there will be no 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?	Yes	Socio-economic standard of people will improve due to increased employment opportunities provided by this project. This will lead to better quality of life and will also

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			set a standard for future developments in the area.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc	No	Impacts of this type are not expected.
3.5	Any other causes	No	No other causes are involved except the mentioned above.

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	Yes	“Excavation will be out for foundation and construction of 4 levels of basements. Part of the excavated soil will be used in backfilling and development of building premises and the excess earth will be disposed by the contractor to the site designated by local authority as per C&D Waste Rules, 2016. “						
4.2	Municipal waste (domestic and commercial wastes)	Yes	<p>Solid wastes likely to be generated in the project are of domestic in nature, composition & quantity of solid wastes are;</p> <table border="1"> <tr> <td>Biodegradable</td> <td>1,241 kg/day (Waste vegetables and foods etc.)</td> </tr> <tr> <td>Non-Biodegradable</td> <td>828 kg/day (Papers, Cartons, thermocol, plastics, glass etc.)</td> </tr> <tr> <td>Total:</td> <td>2,069 kg/day</td> </tr> </table> <p>Solid waste will be segregated into biodegradable and Non-biodegradable components and collected in separate bins. The inorganic non-biodegradable wastes will be sold to authorized vendors for recycling and the biodegradable wastes will be treated in OWC within the project according to Solid Waste Management Rules, 2016.</p>	Biodegradable	1,241 kg/day (Waste vegetables and foods etc.)	Non-Biodegradable	828 kg/day (Papers, Cartons, thermocol, plastics, glass etc.)	Total:	2,069 kg/day
Biodegradable	1,241 kg/day (Waste vegetables and foods etc.)								
Non-Biodegradable	828 kg/day (Papers, Cartons, thermocol, plastics, glass etc.)								
Total:	2,069 kg/day								

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4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	Approx. 250 liter/year Spent oil from DG sets will be generated. It will be stored in HDPE drums in isolated covered facility. This spent oil will be sold to vendors authorized by HSPCB / MoEF & CC for the treatment of same. Suitable care will be taken so that spills/leaks of spent oil from storage could be avoided.
4.4	Other industrial process wastes	No	Not applicable as this is proposed Group Housing buildings project.
4.5	Surplus product	No	Not applicable as this is proposed Group Housing buildings project.
4.6	Sewage sludge or other sludge from effluent treatment	Yes	Approx. 22.08 kg/day sludge generated from the STP plant. It will be dried and later will be used as manure for green belt development.
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. Recyclable waste construction materials will be sold to authorized recyclers. Excavated soil will be stored separately & will be reused for backfilling, leveling purposes & top soil will be stored to be used for landscaping at later stages. 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	Contaminated soils or other materials will not be generated.
4.10	Agricultural wastes	Yes	Approx. 0.45 kg/day agricultural waste will be generated.
4.11	Other solid wastes	No	Not applicable as this is proposed Group Housing buildings project.

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

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S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	The project does not envisage any major air pollution sources except operation of DG sets during power failure and vehicular traffic. The emission from stationary sources (D.G. sets) has been predicated. The DG sets will be the only source of air emission used during the operation phase in case of power failure. The DG stacks of adequate height (as per CPCB norms) will be provided to disperse the pollutant generated from D.G. sets. The pollution generated from the vehicular movement will be checked by maintenance & regular checkup of vehicles. Local native plants will be used in tree plantation all around the project site and road side to reduce the impact of pollution.
5.2	Emissions from production processes	No	No production process is involved as it is proposed Group Housing buildings project. Hence, there will be no such emissions.
5.3	Emissions from materials handling including storage or transport	Yes	Small quantities of fugitive emissions are envisaged during transport and handling of construction materials. Such emissions will be temporary and controlled by the use of sprinkling and other viable techniques like covering of loose material.
5.4	Emissions from construction activities including plant and equipment	Yes	This will be restricted to the construction phase and the construction site only.
5.5	Dust or odors from handling of materials including construction materials, sewage and waste	Yes	Dust is anticipated during loading and unloading of construction material and excavation of upper earth surface and other construction activities. These will however be temporary in nature, which will be controlled by providing water sprinklers. Tarpaulin cover will be provided on stored

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			loose materials to reduce the dust emission.
5.6	Emissions from incineration of wastes	No	Not applicable. There will not be any incineration of waste as this is proposed Group Housing buildings project.
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 prohibited on site.
5.8	Emissions from any other sources	No	Not Applicable

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	The machinery to be used for construction will be of high standard and will adhere to international standard. These standards itself take care of noise control/vibration control and air emission control. Hence, insignificant impacts due to construction machinery are envisaged. Apart from this, the construction activities will be restricted to day time only. Source of noise in the operational phase will be from DG sets (which will be used in operation only during power failure) and pumps & motors. All the machinery will be of highest standard of reputed make and will comply with standard. DG sets will be used during power failure only and will generate noise level below 75 dB (A) from 1 meter distance.
6.2	From industrial or similar processes	No	No industrial processes will be carried out in the proposed project except due to running of various construction equipments/machinery & D.G. Sets during renovation & expansion phase of the projects. Proper maintenance of machineries will reduce the generation of noise and vibration. All the workers will be

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			equipped with PPE's during construction phase and D.G. sets will be installed in acoustic enclosures with proper padding system to reduce vibration impact.
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. • Construction plant and heavy vehicle movement.
6.4	From blasting or piling	No	No blasting or mechanized piling will be done.
6.5	From construction or operational traffic	Yes	Some noise will be generated from vehicular movement in the construction and operational phase but that will be mitigated with green belt development.
6.6	From lighting or cooling systems	No	No significant noise impact will result from lighting or cooling systems.
6.7	From any other sources	No	There will be no other sources for noise & vibration generation except the mentioned above.

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 used oil from DG sets will be carefully stored in HDPE drums and periodically sold to authorized recyclers. All precautions will be taken to avoid spillage from storage as per Hazardous And Other Wastes (Management & Trans

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			boundary Movement) Rules, 2016.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	<p>There will be no discharge of untreated sewage on land or into water bodies. Adequate treatment of sewage will be carried treated in DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises.</p> <p>Total wastewater generated=294 KLD 136 KLD recycled water from nearby STP will be reused for flushing and horticulture.</p> <p>Flushing:90 KLD } Horticulture:46 KLD } Total 136 KLD Treated water shall be reused</p> <p>Treated water will be re-used for flushing and horticulture.</p>
7.3	By deposition of pollutants emitted to air into the land or into water	No	The DG Sets will be provided with stacks of adequate height. Hence dispersion will be achieved and avoid deposition of pollutants in significant concentrations at any single location.
7.4	From any other sources	No	No other sources are involved except the mentioned above.
7.5	Is there a risk of long term buildup of pollutants in the environment from these sources?	No	There will be no such risk in the coming future.

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 proposed Group Housing buildings project and does not involve major hazardous construction activity. Hence chances of explosions, spillages,

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			<p>fires etc. are minimal.</p> <p>During construction, suitable personal protective equipment will be provided to all construction workers as required under the health & safety norms. Awareness & Training about safety norms will be provided to all the supervisor and construction workers involved in construction activities.</p> <p>To deal with any fire related accident, firefighting facility of single handed hydrant valve, long hose reel, and portable fire extinguisher shall be provided.</p>
8.2	From any other causes	No	No other causes are involved except the mentioned above.
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No	<p>The project falls under seismic active Zone IV according to the Indian Standard Seismic Zoning Map.</p> <p>Suitable seismic coefficient will be adopted in horizontal and vertical direction respectively, while designing the structure.</p> <p>There is no possibility of flood as per records available on the proposed project site.</p>

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 or development stimulated by the	Yes	The proposed project is for residential use; it may lead to development of supporting services and infrastructure in

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	<p>project which could have impact on the environment e.g.</p> <ul style="list-style-type: none"> • Supporting infrastructure (roads, power supply, waster or wastewater treatment, etc.) • housing development • extractive industries • supply industries • other 	<p>Yes</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>	<p>and around the area.</p> <p>The project will have positive impact on the ancillary infrastructure like road, markets, public health, amenities, conveyance facilities etc.</p> <p>The project is proposed for the Group Housing buildings Project.</p> <p>Not applicable</p> <p>Not applicable</p> <p>Not applicable</p>
9.2	Lead to after-use of the site, which could have an impact on the environment	No	Not Anticipated
9.3	Set a precedent for later developments	No	Not applicable
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.	Information/Checklist confirmation	Name/Identity	Aerial distance (within 15km.) Proposed project location boundary
1.	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value.	Not Applicable	There is no area under international conventions, national or local legislation for their ecological, landscape, cultural or other related value.
2.	Areas which are important or sensitive for ecological reasons – Wetlands, watercourses or other water bodies, coastal zone,	❖ Sultanpur National Park ❖ Asola Bhatti Wildlife Sanctuary	❖ 21 Km towards WNW direction ❖ 5.7 Km towards E

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	biospheres, mountains & forests		direction
3.	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	<ul style="list-style-type: none"> ❖ Sultanpur National Park ❖ Asola Bhatti Wildlife Sanctuary 	<ul style="list-style-type: none"> ❖ 21 Km towards WNW direction ❖ 5.7 Km towards E direction
4.	Inland, coastal, marine or underground waters	No Any	Not Applicable
5.	State, National boundaries	Delhi-Haryana State boundary	~ 1 Km towards E direction
6.	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas.	<ul style="list-style-type: none"> • SH-13 • NH-8 	<ul style="list-style-type: none"> • ~7.6 Km, towards West • ~5.5 Km, towards NW
7.	Defense installations	Not Applicable	Not Applicable
8.	Densely populated or built-up area	<ul style="list-style-type: none"> ➤ Wazirabad – ~Adjacent from the project side ➤ Chakkarpur – ~3.7 Km towards NW direction ➤ Behrampur- ~4.2 Km towards South direction 	
9.	Areas occupied by sensitive manmade land uses (hospitals, schools, places of worship, community facilities)	<p>Schools/Hospitals/ Police Stations</p> <ul style="list-style-type: none"> ➤ R.B.P School – ~3.7 Km towards NW direction ➤ Agarsen School - ~7.2 km towards WSW direction <p>Hospitals</p> <p>a) Narayan Hospital ~4.1 Km towards N direction</p> <ul style="list-style-type: none"> ➤ ➤ Sanvit Hospital – ~7.6 Km towards W direction 	
10.	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Not Applicable	Ground-water resources in the study area are depleting at very fast rate and are declared as scarce resources.
11.	Areas already subjected to pollution or environmental damage. (Those where existing legal environmental standards are exceeded)	No	There are no areas which are subjected to pollution or environmental damage. All parameters of Air, Water and Noise etc. will be maintained within permissible limit specified by SPCB/CPCB with proper mitigation

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			measures.
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)	None	The site falls under the zone IV as per the Seismic Zone Map of India. There are no possibilities of proposed project site getting as per records available.

DLF LIMITED

DLF Gateway Tower, R Block,
DLF City Phase - III, Gurugram - 122 002, Haryana (India)
Tel. : +91-124-4769000, Fax: +91-124-4769250



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"I hereby give 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 at our risk and cost.

Date: 02-03-2022

Place: Gurgaon

DLF Limited

Authorised Signatory

Signature of the applicant

ALOK KUMAR

**DLF LIMITED., 3rd Floor, Arjun Marg, Shopping Mall,
Phase-I, DLF City, Gurgaon-122002
With Name and Full Address
(Project Proponent/ Authorised Signatory)**

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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 Programmed).

SECTION 1- LAND ENVIRONMENT:

(Attach panoramic view of the project site and the vicinity)

1.1 Will the existing land use get significantly altered from the project that is consistent with the surroundings? (Land use must conform 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 (i) site location, (ii) surrounding features of the site (within 500 meters) and (iii) the site (indicating levels & contours) to appropriate scales. If not available attach only conceptual plans.

➤ No

The project site is vacant land. It is anticipated that the construction activities of the project will not have an adverse effect on the land use activities in the project area. The land falls under the residential zone as per the Development Plan of Gurugram-Manesar Plan 2031. The development of green belt and other landscaping will enhance the visual aesthetics of the area.

CONNECTIVITY

The proposed project site is located in Zone-10, DLF-5, Sector-54, Gurugram, Haryana which is easily approachable through NH-148A which is ~3.5 Km away from the project site towards North direction and NH-48 which is ~5.5 Km away from the project site towards NW direction and nearest railway station is Gurgaon Railway Station at a distance of ~11 Km from project site in NW direction. Nearest airport is Indira Gandhi International Airport at a distance of ~10.3 Km from the project site in North direction

The Co-ordinates of the project site are as follows:

Latitude- 28°26'44.55"N

Longitude-77°06'48.93"E

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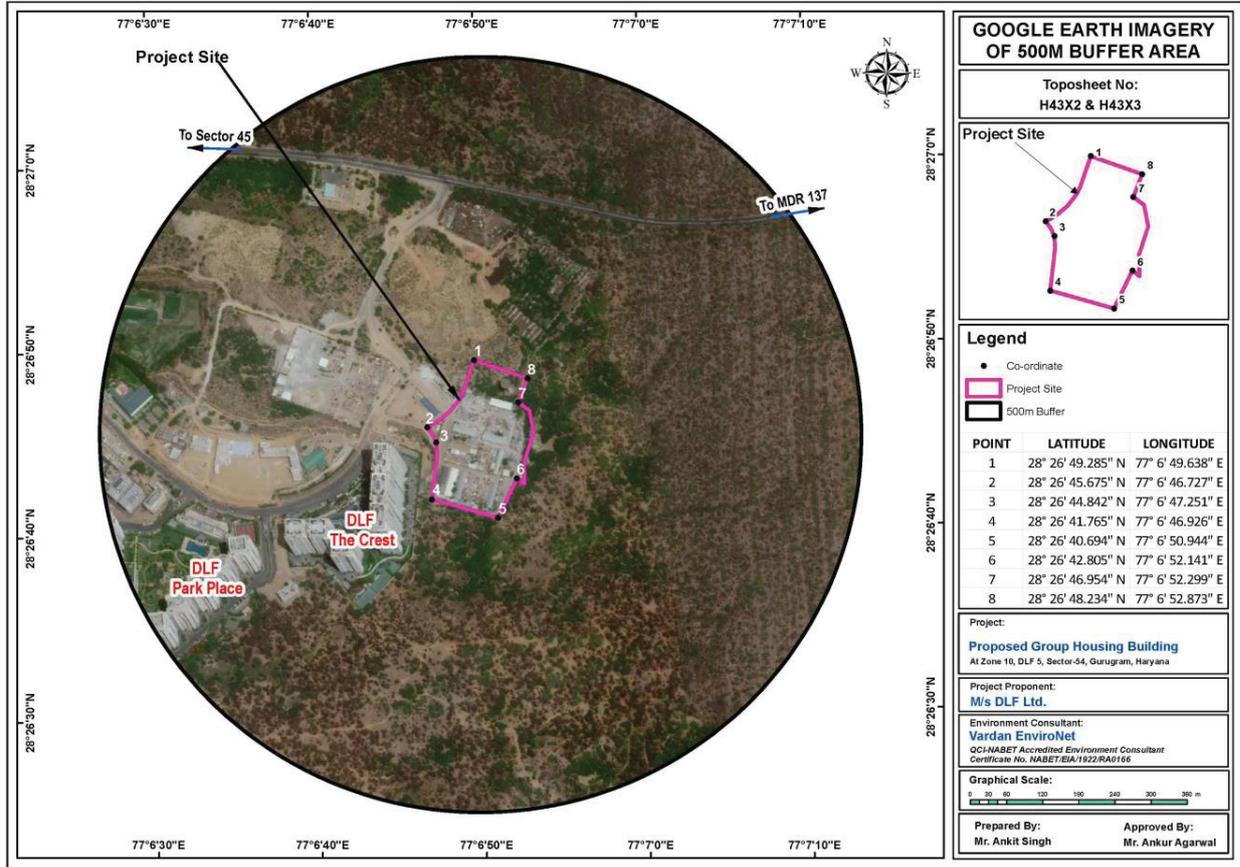


Figure-1: Google image showing the project site with site co-ordinates

1.2 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.

➤ **LAND REQUIREMENT**

The various land use, FAR and ground coverage permitted as per zoning plan vis-à-vis achieved & proposed is given Table No. A & B. Total plot area of Phase-V Group Housing is 476.6015 Acres (19, 28,738.00 Sq.mt) out of which **7.574 Acres (30,653.317 Sq.mt)** are to be developed for this particular Group Housing Buildings Project.

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Table No. A Proposed & Achieved Ground Coverage and FAR of DLF City Phase-V Group

Housing Scheme

S. No	Type of Land Use	Ground Coverage (in Acres)			FAR (in sqm)		
		Permissible	Achieved & Proposed	Balance	Permissible	Achieved & Proposed	Balance
1.	Group Housing	110.214	40.063	70.141	3,122,119.7	2,119,341.3	1,002,778.4
2.	Shopping/Commercial	7.744	7.532	0.212	188,050.2	186,368.3	1,683.5
3.	Cultural, Recreational & Amusement Activities	No regulation			No regulation		

Table No. B Proposed & Achieved Ground Coverage and FAR of DLF City Phase-V Group

Housing Scheme

S. No	Type of Land Use	Ground Coverage (in sqm)			FAR (in sqm)		
		Permissible	Achieved & Proposed	Balance	Permissible	Achieved & Proposed	Balance
1	Group Housing	446,016.5	162,127.9	283,848.2	3,122,119.7	2,119,341.3	1,002,778.4
2	Shopping/Commercial	31,338.6	30,480.7	857.9	188,050.2	186,368.3	1,683.5
3	Cultural, Recreational & Amusement Activities	4,821.8	4,030.6	791.2	28,930.7	5,422.7	23,508.0

Now we are proposing another group housing buildings project with total land area of 7.574 Acres /30,653.317 Sq.mt and Built up area for the same comes out to be **2,33,377.998 m²**

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Table 1: Area Statement

S.No.	Particular	Total Area(Sqm.)
1.	Total Plot Area	30,653.317 (7.574 Acres)
2.	Proposed Ground Coverage	6,369.381
3.	Proposed Residential FAR (Including Community Building)	1,43,937.510
4.	Total FAR (Residential+ Community Building)	1,43,937.510
5.	Mumty Machine Room	1,112.604
6.	Stilt area	2,700.018
7.	Meter Room & Guard Room	18.000
8.	Surface Staircase	38.175
9.	Stairs	3,460.908
10.	Basement	82,110.783
11.	Non FAR (Mumty Machine Room+ Stairs Area & Stilt Area+ Meter Room & Guard Room+Basement+ Surface Staircase)	89,440.488
12.	Built up Area (FAR+Non FAR)	2,33,377.998
13.	Green Area (30% of plot area)	9,195.995

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Salient Features

S. No.	Particulates	Total
1	Total Population	4,508
2	Total Water Requirement	391 KLD
3	Total Fresh Water Requirement	255 KLD
4	Total Wastewater Generated	294 KLD
5	Solid Waste Generation. Kg/day	2,069 kg/day
6	Maximum Building Height (meters)	109.350
7	No. of DG Set	5 DG sets of tota capacity 8,250 KVA (3×2000 KVA + 1×1250 KVA+ 1×1000 KVA).
8	Total Power Requirement & Source	5,874 KW (DHBVN)
9	No. of Block	4 nos
10	Main Dwelling Units	520
11	Service personnel units	52
12	No. of Floors	S+ 33
13	No. of Basement	4 nos
14	Parking provided	1,615 ECS

1.3 What are the likely impacts of the activity on the existing facilities adjacent to the site? (Such as open spaces, community facilities, details of the existing land use and disturbance to the local ecology).

The project being a well planned activity will result in organized open spaces and green areas. About **9,195.995 m²** i.e. **30%** of the total plot area is earmarked for landscaping. The project will have an overall positive impact on the existing land use and will not cause any disturbance to the local ecology.

1.4 Will there be any significant land disturbance resulting in erosion, subsidence & instability? (Detail of soil type slope analysis, vulnerability to subsidence, seismicity etc may be given).

There shall be no land disturbance resulting in erosion, subsidence and instability as it is a flat land. The site falls under the Zone IV as per the seismic zone map of India and indicating moderate

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damage risk zone. The project will be earthquake resistant taking into account the latest provisions of Indian Standards Codes. The soil type is silty loam at the project site.

1.5 Will the proposal involve alteration of natural drainage system? (Give details on a contour map showing the natural drainage near the project site).

The project does not intersect any natural drainage route. No perennial or non-perennial drainage system is found to exist in the project area or being obstructed by the project. The surroundings comprise an urbanized stretch. Well planned storm water drainage has been designed to take care of internal storm water drainage. Thus, no impact on the natural drainage system is anticipated.

1.6 What are the quantities of earthwork involved in the construction activity-cutting, filling, reclamation etc. (Give details of the quantities of earthwork involved, transport of fill materials from outside the site etc?)

The only excavation work involved in the proposed project is for establishing of pillars. The filling works will be done by the excavated material and no extra material will be used. All the topsoil excavated from construction activities shall be stored separately and used in greenbelt development within the project site. Hence, the need for movement of soil to and from the site is not anticipated.

1.7 Give details regarding water supply, waste handling etc. during the construction period.

- ❖ During construction phase, water demand will be fulfilled by STP treated water from nearest DLF Site.
- ❖ Waste handling during the construction phase shall be done by the site contractor whose responsibility lies with collection and storage of construction and demolition waste generated on the site. All construction wastes generated during construction will be used within the site itself for filling the floors, roads, aggregate for mortar etc. to the extent feasible. Remaining will be sent to the agency for proper disposal.

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1.8 Will the low lying areas & wetlands get altered? (Provide details of how low lying and wetlands are getting modified from the activity).

No. The site area is a flat land and the surroundings are characterized by an urbanized stretch. No low lying areas or wetlands are found in the vicinity of the project site.

1.9 Whether construction debris & waste during construction cause health hazard? (Give quantities of various types of wastes generated during construction including the construction labor and the means of disposal).

No significant health hazard is associated with the proposed construction.

- ❖ During construction period, source of fugitive dust generation will be material handling and vehicular movement. Impact due to fugitive dust emission is negligible as water sprinklers will be used to suppress fugitive dust emission as and when generate. However, the impacts will be confined to laborers/workers particularly with regard to occupational exposure. Proper Personal Protective Equipments will be provided to the workers working in the potential areas (e.g. masks, ear plugs etc.).
- ❖ Careful design, planning and good site management would minimize waste of materials such as concrete, mortars and cement grouts. Construction wastes will be segregated as much as possible at site itself to increase the feasibility of recycling concrete and masonry as filling material and steel pieces as saleable scrap. Litter disposal and collection points will be established around the work sites. Empty packaging materials, drums, glass, tin, paper, plastic, pet bottles, wood, thermocol and other packaging materials, etc will be disposed through recyclers. The construction spoils will be temporarily stored at designated dumpsite located inside the site premises. Later on these wastes will be used for land filling / leveling work within the site premises. An estimate of the average composition of waste generated from the onsite construction activities given in Table-2.

Table-2: Waste Composition - During Construction Phase

S. No.	Constituents	Percentage Composition (%)
1	Soil, Sand and Gravel	35.80
2	Brick and Masonry	35.76
3	Concrete	23.24
5	Bitumen	2.10
6	Wood	2.10

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7	Other	1.00
	Total	100.00

Source: TIFAC Report "Utilization of Waste from Construction Industry," 2001

SECTION-2 WATER REQUIREMENT

2.1 Give the total quantity of water requirement for the proposed project with the breakup of requirement for various uses, how will the water requirement met? State the sources & quantities and furnish a water balance statement.

Total water requirement for the said project will be 391 KLD, out of which 255 KLD is fresh water requirement and 136 KLD is treated water requirement which will be used for flushing and horticulture.

Table 3: Total Water Requirement within the project

Total Water Requirement = 391 KLD	
For Domestic Purpose	255 KLD
For Flushing	90 KLD
For Gardening / Horticulture	46 KLD
TOTAL	391 KLD

Total **294 KLD** of wastewater would be generated from the proposed project which will be treated in DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises. The DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises will be constructed for the treatment of wastewater during operational phase. 136 KLD treated water from common STP of DLF Phase-5 will be reused for flushing and horticulture within our site.

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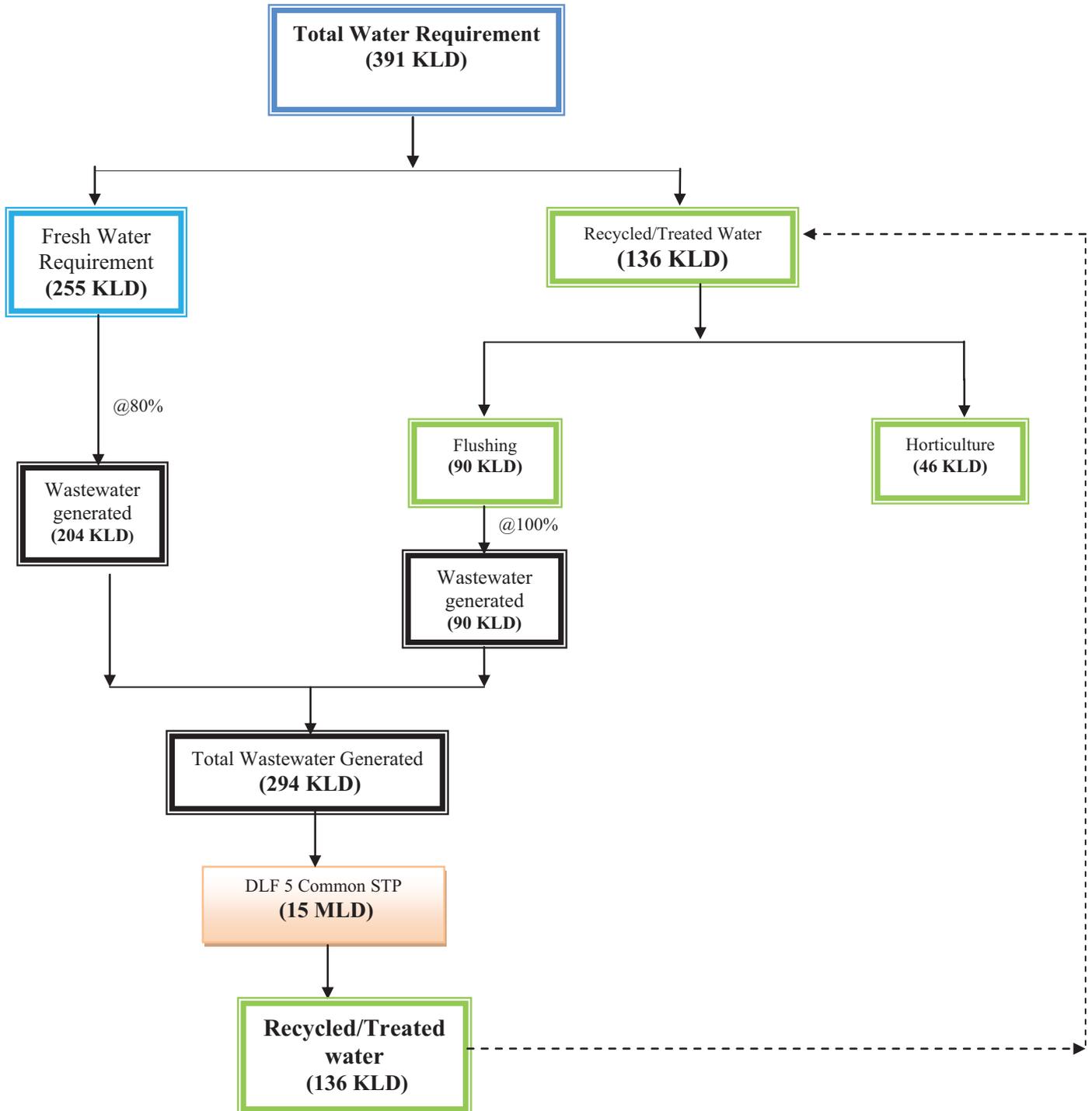


Figure 2: Water Balance Diagram during Summer Season

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2.2 What is the capacity (dependable flow or yield) of proposed sources of water?

Water requirement will be fulfilled by DLF Water Tanks.

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).

Not Applicable as the water requirement will be fulfilled from DLF Water Tanks.

2.4 How much of water requirement can be met from the recycling of treated wastewater? (Give the details of quantities, sources and usage)

The water requirement for flushing, landscaping, will be met through treated water from DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises. The DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises will be constructed for the treatment of wastewater during operational phase. 136 KLD treated water from common STP of DLF Phase-5 will be reused for flushing and horticulture within our site.

Table-4: Details of Treated/Recycled Water from STP

Details	Water (KLD)
Water requirement for domestic purpose	255 KLD
Wastewater generated from domestic use (@ 80% of domestic water requirement)	204 KLD
Water requirement for Flushing Purpose	90 KLD
Wastewater generated from Flushing (@ 100% of flushing requirement)	90 KLD
Total wastewater generated	294 KLD
Use of Recycled Water (136 KLD will be reused for flushing and horticulture)	1. Flushing :90 KLD 2. Horticulture :46 KLD

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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 be no diversion of water from other users.

2.6 What is the incremental pollution load from wastewater generated from the activity? (Give details of the quantities and composition of wastewater generated from the activity).

Approximately 294 KLD of wastewater during operational phase will be generated from the proposed project.

This wastewater generated will be treated in DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises. The DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises will be constructed for the treatment of wastewater during operational phase. Dual plumbing system will be provided for reuse of recycled water in flushing, landscaping. Hence, no incremental pollution load is been expected from wastewater generated from the activity.

Table-5: Composition of Wastewater Generation

Before Treatment Final discharge characteristics

a) pH	:	6.5 to 8.5
b) Colour	:	Mild
c) T.S.S. (mg/l)	:	150-300 mg/l
d) BOD (mg/l)	:	200-350 mg/l
e) COD (mg/l)	:	500-600 mg/l

After Treatment Final discharge characteristics

(a) pH	:	6.5 to 8.5
(b) Oil & Grease	:	<2 mg/l
(c) B.O.D.	:	<10 mg/l
(d) C.O.D.	:	<15 mg/l
(e) Total Suspended Solids	:	<10 mg/l

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2.7 Give details of the water requirements met from water harvesting? Furnish details of the facilities created.

Rainwater harvesting is proposed as a water conservation tool. Total **8 nos.** rain water harvesting pits will be provided for the storm water drainage within the project premises at selected locations, which will catch the maximum run-off from the area. It is self-sufficient to avoid any collection/stagnation and flooding of water.

- 1) Since the existing topography is congenial to surface disposal, a network of storm water pipe drains is planned adjacent to roads. All building roof water will be brought down through rain water pipes.
- 2) Proposed storm water system consists of pipe drain, catch basins and seepage pits at regular intervals for rain water harvesting and ground water recharging.
- 3) For basement parking, the rainwater from ramps will be collected in the basement storm water storage tank. This water will be pumped out to the nearest external storm water drain.
- 4) Peak Hourly rainfall of 90 mm/hr shall be considered for designing the storm water drainage system. Rain water harvesting has been catered to and designed as per the guidelines of CGWA. The bottom of the recharge structure will be kept 5 m above this level. At the bottom of the recharge well, a filter media is provided to avoid choking of the recharge bore. Design specifications of the rain water harvesting plan are as follows:
 - ❖ Catchments/roofs would be accessible for regular cleaning.
 - ❖ The roof will have smooth, hard and dense surface which is less likely to be damaged allowing release of material into the water. Roof painting has been avoided since most paints contain toxic substances and may peel off.
 - ❖ All gutter ends will be fitted with a wire mesh screen and a first flush device would be installed. Most of the debris carried by the water from the rooftop like leaves, plastic bags and paper pieces will get arrested by the mesh at the terrace outlet and to prevent contamination by ensuring that the runoff from the first 10-20 minutes of rainfall is flushed off.
 - ❖ No sewage or wastewater would be admitted into the system.
 - ❖ No wastewater from areas likely to have oil, grease, or other pollutants has been connected to the system.

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2.8 What would be the impact of the land use changes occurring due to the 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?

The project will include paved areas and thus the runoff from the plot is expected to increase due to reduced infiltration. However, the increased runoff will not cause flooding or water logging as a well designed storm water drainage will be provided. The runoff will finally be collected into rainwater harvesting pits for groundwater recharging. The quality of the runoff is expected to improve due to paved areas.

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 authority, if any)

Water demand will be fulfilled from DLF Water Tanks. No adverse impact is expected on this account as extensive rainwater harvesting will be implemented across the project site. To reduce the freshwater demand and hence the groundwater stress, treated wastewater will be used for landscaping and flushing.

2.10 What precautions/ measures have been to check the surface run-off, as well as uncontrolled flow of water into any water body?

The following management measures are suggested to protect the water quality are:

- ❖ Avoid excavation during monsoon season.
- ❖ Care would be taken to avoid soil erosion.
- ❖ Community toilets shall be constructed on the site during construction phase and the wastewater will be channelized to the septic tank in order to prevent wastewater from entering the water bodies.
- ❖ Any area with loose debris/soil within the site shall be fully planted by local plant species.

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- ❖ 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 would be kept effectively impervious.
- ❖ Collection and settling in the 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.

2.11 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 ground water recharge. Thus proper management of this resource is 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:

- ❖ Regular inspection and cleaning of storm drains.
- ❖ Installation of clarifiers or Oil/Water separators/traps system of adequate capacity around parking areas and garages as per requirement.
- ❖ 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 storm water drains.
- ❖ Good housekeeping in the above areas.

2.12 Will the deployment of construction laborers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation).

No, mostly local laborers will be employed during the construction phase and thus negligible quantities of wastes will be generated. Mobile toilets will be provided and the wastewater generated will be treated in modular STP.

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2.13 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).

- ❖ It is expected that the project will generate approximately 294 KLD of wastewater from the operational phase of the proposed project.
- ❖ This wastewater generated will be treated in DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises. The DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises will be constructed for the treatment of wastewater during operational phase within the premises. 136 KLD of recycled/Treated water from DLF-5 Common STP will be used in flushing and horticulture.

2.14 Give details of dual plumbing system if treated waste used for flushing of toilets or any other use.

Total water requirement for the project will be approximately 391 KLD out of which 255 KLD is fresh water requirement and 136 KLD of recycled/Treated water from DLF-5 Common STP will be used in flushing and horticulture

During operation phase dual plumbing system will be used, approximately 294 KLD of wastewater from proposed project which will be treated in DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises. The DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises treatment of Waste water generated from project site. Treated water obtained from STP shall be utilized for the purpose of flushing (90 KLD) and horticulture (46 KLD).

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SECTION-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 ecologically sensitive area falls within the project site. Hence, no ecological/biological threat has been anticipated.

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 project does not support any significant vegetation. It is to develop a multilayered peripheral greenbelt of native plant species to enhance the aesthetic value of the region and also provide an excellent habitat for various faunal groups.

3.3 What are the measures 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?)

Green belt will be developed along the periphery of the project premises along with the internal parks and lawns. **9,195.995 m²** i.e. **30 %** of total plot area will be developed as green belt and organized green spaces. The plantation matrix adopted for the green belt development includes pit of 0.3 m × 0.3 m size with a spacing of 2 m x 2 m. In addition, earth filling and manure may also be required for the proper nutritional balance and nourishment of the sapling. Multi-layered plantation comprising of medium height trees (7 m to 10 m) and shrubs (5 m height) are for the green belt. In addition creepers will be planted along the boundary wall to enhance its insulation capacity.

SECTION 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.

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No. The existing land use around the site is urban and does not provide a habitat for wild species. The multilayered peripheral greenbelt will provide an excellent habitat for the native fauna.

4.2 Any direct or indirect impacts on the avifauna of the area? Provide details.

The project will not have any direct or indirect impacts on the avifauna of the area. However, planting of trees in the greenbelt will be an attraction to the local bird population.

4.3 Prescribe measures such as corridors, fish ladders etc. to mitigate adverse impacts on fauna.

No direct or indirect impact on fauna is envisaged.

SECTION 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 construction).

The proposed project will not increase heat Island effect significantly, as it does not involve any significant change in the land use pattern. The effect will be negligible due to reduction in hard area and more plantations to shade of hard area along roads and parking lots. Ambient air monitoring was carried out at the project site during the environmental assessment.

During the construction phase, cars, scooter/motorcycle will be owned by the workers and staff of residential project. Vehicular emissions will be the major source of air pollution in addition to DG set. Quantum and dispersion of pollutants from vehicular emission will depend upon the following:

- Volume of traffic on the roads,
- Meteorological conditions
- Emission sources

From vehicular emissions, PM, NO₂ and CO is pollutants of primary concern. The dispersion of vehicular emission would be confined within 100 m from the road and concentration will decrease

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with increase in distance from road. It is anticipated that the contribution of vehicular emission in ambient air quality will be marginal but well within the stipulated National Ambient Air Quality Standards. Dispersion will be faster at higher wind speed.

As per the study of dispersion model, the incremental GLC shows that there is no any major increment in the pollution load.

Mitigation Measures: The proposed project will develop a green belt inside the premises of the project site and along the internal road, which will work as a barrier for the movement of pollutants and help in pollution control.

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.

During operational phase of the project, there will be increase in atmospheric concentration of gases and particulate matter due to running of DG sets. Total 05 Nos. of DG sets of total capacity of 8,250KVA (3×2000 KVA + 1×1250 KVA+ 1×1000 KVA) will be operated during power failure. This will cause emissions of PM, SO₂, NO₂ and CO. However, the D.G. sets will be run only during power failure and low sulphur diesel (HSD) will be used. Adequate stack height of D.G. sets will be provided as per the stipulated guidelines of Central Pollution Control Board (CPCB) to facilitate natural dispersion of exhaust gases.

Sources of Air pollution During Construction Phase:

- Increase in level of dust and other air pollutants due to building construction and other related Activities.
- Emissions from vehicles carrying the construction materials
- Emissions from DG sets
- Open burning of solid wastes can cause air pollution

Mitigation Measures:

- Use of water for dust suppression and polymeric dust suppression system (wherever possible).
- Use of covering sheets shall be done for trucks carrying construction material to prevent air borne dust.

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- All material storages shall be adequately covered to avoid dust / particulate emissions.
 - Use of CPCB approved DG sets.
 - Proper maintenance of DG sets.
 - Adequate parking provision and proper traffic movement for smooth traffic flow.
 - Vehicles having valid pollution under control certificate shall be allowed to ply on site.
 - Open burning of solid waste shall be prohibited.
 - Regular health checkup of the workers.
 - Use of the standard personal protective equipment like masks, goggles etc.

Sources of Air pollution During Operational phase:

- The gaseous emissions from vehicles.
- Emissions from DG sets.

Mitigation Measures:

- DG sets with acoustic enclosures is to be installed and stacks height to be kept as per Central Pollution Control Board (CPCB) norms to allow effective dispersion of pollutants.
- Periodic monitoring of SPM and SO₂ concentration and thereby schedule and implement proper maintenance of DG sets.
- Plantation of trees of various varieties shall be planted on ground.

5.3 Will the proposal create shortage of parking space for vehicles? Furnish details of the present level of transport infrastructure and measures for improvement including the traffic management at the entry and exit to the project site.

The proposed project is located in well-developed urbanized area. The project will have separate entry and exit with 6 m wide road for the vehicles to avoid any congestion at entry and exit points and within the project provided parking is 1,615 ECS. Adequate provision will be kept for car/vehicles parking at site. There shall also be adequate provision for visitors parking so as not to disturb the traffic and allow smooth movement at the site.

5.4 Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc, with areas under each category.

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Internal roads of adequate width, footpaths/pedestrian pathways have been well planned for the project. The detailed traffic movement patterns are mentioned in Traffic and Circulation plan. The total road and paved areas including parking area within the project site is 15,087.941. m².

5.5 Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures for mitigation of the above.

No significant impact of noise has been anticipated within and outside of the project site due to provision of wide roads for smooth flow of traffic and greenbelt along the roads. Noise, due to the traffic, within site, will result in a marginal increase in the noise levels because noise control measures shall be provided in vehicles & DG sets as mentioned below, which will cause slight increase in noise level.

During Construction Phase:

Anticipated Impacts-

- Noise due to construction activities.
- Impact due to transportation activities.
- Nuisance to nearby areas due to noise polluting work at night.
- Noise generation due to DG sets.

Mitigation Measures-

- During construction activities the noise monitoring will be done to ascertain the noise levels are within limits.
- All precautions for noise abatement shall be taken during the construction activities.
- It is recommended that Contractors to use well maintained & relatively newer equipment to mitigate noise generation in initial stages when excavation and earth removal is carried out.
- During high noise construction activity there will be provision of ear plugs for construction labour and staff.
- No noise polluting work in night shifts.
- Provision of barricades along the periphery of the site.
- Acoustic enclosure for DG sets.

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During Operation Phase

Anticipated Impacts-

- Impact of Noise due to vehicular Traffic.
- Noise generation due to DG sets.

Mitigation Measures-

- Provision of proper parking arrangement, traffic management plan for smooth flow of a vehicles helps to abate noise pollution due to vehicular traffic.
- Plantation of trees of various varieties shall be planted on ground that shall act as natural noise buffer.
- Acoustic enclosure for DG sets.

5.6 What will be the impact of D.G. sets and other equipment on noise levels and vibration in ambient air quality around the project site? Provide details.

During operational phase of the project, vehicular movement and operation of DG sets will be the major sources of noise pollution. But both these activities- DG set and vehicular movement will not have any significant impact on the people residing in the area. Since DG set will not be operational continuously and moreover it will be placed away from populated area and will be enclosed with suitable enclosures.

Hence, no or minimal impact will be anticipated due to DG set and vehicular emission. It is envisaged that the movement of the motor vehicles will be restricted to designated carriageways only.

D.G. Sets will be operated only in case of power failures during construction and operational phase. The Pollutants like PM, SO₂ that may arise from emissions from D.G. sets will be discharged through vent of proper height. D.G. sets will be installed within built acoustic enclosures to reduce the noise of D.G. sets while in construction or operation. Plantation of trees would act as noise barrier and will reduce noise level.

Impacts on Air Quality due to DG Sets

- Impacts on ambient air during operation phase would be due to emissions from the stacks attached to backup DG sets only during grid power failure.

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Mitigation Measures for Impacts of DG Sets on Ambient Air Quality

- Back up DG sets will comply with the applicable emission norms.
- Adequate stack height for DG sets will be provided as per norms.
- Back up DG sets will be used only during power failure.
- Monitoring of emissions from DG sets and ambient air quality will be carried out as per norms.

SECTION-6: AESTHETICS

6.1 Will the construction in any way result in the obstruction of a view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?

The site lies in an urbanized settlement and is well planned. Thus, no obstruction of view or scenic beauty or landscape is anticipated. Furthermore, the construction will be planned in such a way that the organized open spaces and landscaped areas will render the plot aesthetically appealing.

6.2 Will there be any adverse impacts from new constructions on the existing structures? What are the considerations taken into account?

No impacts anticipated.

6.3. Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.

The project will strictly follow the Building Regulation Norms of NBC, HSVP/GMDA building by-laws and norms of Town and Country Planning on Ground Coverage, FAR, Height, Setbacks, Fire Safety Requirements, Structural Design and other parameters will be strictly adhered to.

6.4 Are there any anthropological or archaeological sites or artifacts nearby? State if any other significant features in the vicinity of the site have been considered?

No anthropological or archaeological sites or artifacts are found near the site area.

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SECTION-7: SOCIO-ECONOMIC ASPECTS

7.1 Will the proposal result in any changes to the demographic structure of local population? Provide the details.

The project is situated in the residential zone and hence there will be no change in demographic structure.

Construction phase: Since local laborers will be engaged during construction phase, alteration to the existing demographic profile of the area is not anticipated.

Operation phase: The changing demography in the area is another impact that needs attention. The project will mainly lead to spatial redistribution of local population and hence no considerable influx of population is envisaged owing to the project.

7.2 Give details of the existing social infrastructure around the project.

The area around the project is surrounded by local land area and project site is located in the development area under Gurugram Manesar Master Plan 2031. However all sorts of social infrastructure like transportation facilities, water supply & sanitation facilities, communication facilities, educational institutes, hospital, markets, banks, cultural amenities etc. already exist in Gurugram.

7.3 Will the project cause adverse effects on local communities, disturbance to sacred sites or other cultural values? What are the safeguards?

Construction phase: There is no religious site or archeological monuments of historical significance in or near the project site. Hence, no adverse impact in this regard is anticipated. Rather, this phase will generate jobs that relate to unskilled, semi skilled as well as skilled labor category. Few supervisory positions will also open up, for which local candidates will be considered based on merit.

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Operation phase: The project will provide state-of-the-art facility in the area, thereby improving the quality of life. A residential project of such scale will also boost the local economy.

SECTION-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)

While selecting the building materials appropriate weight-age will be given to select materials with low embodied energy. The aim is to replace at least a part of high energy intensive materials with low energy intensive materials and utilize regionally available materials. Products which use recycled materials like glass, crushed stone, and other waste which are resource efficient finishes such as finished concrete flooring, ceiling tiles, and ceramic tiles are useful. The advantages of using products with recycled content: Few examples are use of Fly ash based products e.g. AAC Block, PPC Cement, use of fly ash in RCC and Plaster. Materials with high recycle content e.g. steel, tiles, aluminum, pavers shall be selected.

Reuse and recycling

Reuse of building materials commonly saves about 95% of embodied energy that would otherwise be wasted. However, some materials such as bricks and roof tiles may be damaged when reused.

Savings from recycling of materials for reprocessing varies considerably, with savings up to 95% for aluminum but only 20% for glass. Also, some reprocessing may use more energy, particularly if long transport distances are involved.

Life cycle assessment

Life cycle assessment (LCA) examines the total environmental impact of a material or product through every step of its life — from obtaining raw materials (e.g. through mining or logging) all the way through manufacture, transport to a store, and using it in the home, to disposal or recycling.

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LCA can consider a range of environmental impacts such as resource depletion, energy and water use, greenhouse emissions, waste generation and so on.

LCA can be applied to a whole product (a house or unit) or to an individual element or process included in that product. An internationally agreed standard (ISO 14040:2006, Environmental management — life cycle assessment — principles and framework) defines standard LCA methodologies and protocols.

8.2 Transport and handling of materials during construction may results in pollution, noise and public nuisance. What measures are taken to minimize the impacts?

Mitigation Measures for Air Pollution during Construction Stage:

- Construction materials will be suitably covered with tarpaulin cover etc during transportation.
- Water sprinkling shall be done on haul roads where dust generation is anticipated.
- Raw material storage and handling yard will be enclosed from all sides.
- To minimize the occupational health hazard, proper personal protective gears i.e. mask shall be provided to the workers working in the dust prone areas.

Mitigation Measures for Noise Pollution during Construction Stage:

- Administrative as well as engineering control of noise will be implemented.
- Isolation of noise generation sources and temporal differentiation of noise generating activities will ensure minimum noise at receiver's end.
- To prevent any occupational hazard, earmuff / earplug shall be given to the workers working around construction plant & machinery emitting high noise levels.
- Use of such plant or machinery shall not be allowed during night time. Careful planning of machinery operation and scheduling of operations shall be done to minimise such impact.

8.3 Are recycled materials used in roads and structures? State the extent of savings achieved?

Yes, for road construction fly-ash will be utilized. Recycled materials will be bought from outside sources and will be used as fillers in base and sub-base of the carriageway, footpaths pavements or pedestrian way, as needed. The project will use materials with recycled content such that the total

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recycled content constitutes at least 10% of the total cost of the materials used in the roads & structure.

8.4 Give detail of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.

The solid waste of the project will be segregated into biodegradable waste and non-biodegradable. Biodegradable waste and non biodegradable waste will be collected in separate bins. Biodegradable waste will be treated in the project premises by organic waste converter. The recyclable wastes will be sent off to the government authorized recyclers. Proper guidelines for segregation, collection and storage will be prepared as per Solid Wastes Management Rules, 2016.

SECTION-9: ENERGY CONSERVATION

9.1 Give details of the power requirements, source and 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?

The power requirement, sources, and backup power requirement are given in the Table below:

Power Requirement, Sources and Backup Plan

Power Requirement	5,874 KW
Sources of Power	Dakshin Haryana Bijli Vitran Nigam (DHBVN)
Backup power supply arrangement	05 no. of DG sets having total capacity of 8,250 KVA (3×2,000 KVA + 1×1,250 KVA+ 1×1,000 KVA). Will be used in case of power failure only.
Assumed Power Consumption	2.338 watt./sq.ft

Energy conservation will be one of the focuses during the project planning and operation stages. The conservation efforts would consist of the following.

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Energy Saving Practices

- Automatic Control of Power factors through APFC Relay controlled capacitor Panel.
- Use of solar energy for external lighting.
- Purchase of energy efficient appliances, motors & pumps.
- Use of Energy Efficient lighting i.e. LED, 9/18W and T-5 fixtures. T5- 21/28W fluorescent lights will be used in basement parking instead of conventional 40W tube lights to save a lot of energy as compared with 40W TL.
- Constant monitoring of energy consumption and defining targets for energy conservation.

Architectural design

- Maximize the use of natural lighting through design
- Passive solar cooling utilizing building shading through overhangs.
- Glazed areas on the façade are limited to 40% of the total façade area which will be provided with single glazed units.
- Over deck insulation on roof meeting thermal conductivity as defined under ECBC along with the reflective surface on roof top with High Solar Reflectance Index.

Urban Heat Island Impact

In order to reduce impact of urban Heat Island and improving the microclimate at site, following measures are being undertaken:

- Reduced surface parking
- Light colored paving materials for hard paved areas at pedestrian level
- Grass lawn with shrubs in the center of the Project
- Provision of Trees to shade open surface areas

Behavioral change on consumption

- Promoting awareness on energy conservation
- Training staff & occupants on methods of energy conservation and to be vigilant to such opportunities.

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9.2 What type and capacity of power backup do you plan to provide?

Air cooled DG set will be used. Backup power units will be provided by 05 Nos. of DG sets of total capacity of 8,250 KVA (3×2,000 KVA + 1×1,250 KVA+ 1×1,000 KVA) The DG sets will be operated only during power failure.

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?

Glass plays a unique and important role in building design and the environment. It affects design, appearance, thermal performance and occupant comfort. The selection of the right glass is a crucial component of the design process.

India being a tropical country, we need to be careful while selecting a glass. Selection of glass has become more complex since a variety of glasses are available to choose from, ranging from performance to aesthetics.

Key factors which play an important role in designing the building envelope with glass are as follows.

- Solar Factor (SF) / Solar Heat Gain Co-efficient (SHGC)-
- U-Value-
- Relative Heat Gain (RHG)
- Visual Comfort

Solar Factor (SF) /Solar Heat Gain Co-efficient (SHGC)

A combination of the directly transmitted solar and radiant energy and the proportion of the absorbed solar energy that enters into the building are interior..

U-Factor (U-Value)

This is the measurement of air-to-air thermal conductance or insulation between indoors and outdoors through the glass.

Relative Heat Gain (RHG)

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RHG is calculated as follow = (Solar heat gain factor (ASHRAE) 630° W/m² X shading coefficient of the glass) + (Temperature Difference x U value)

- Heat gain due to Solar Factor contributes to 80% of RHG value
- Heat gain due to U-value contributes to 20% of RHG value

As we have proposed for low U-value and low SF/SHGC value, thus RHG value will remain low.

Visual Comfort

Visual Light Transmission

It is defined as the percentage of light transmitted through the glass. It does not determine the color of the glass.

We will use Glass that should provide for optimum daylight inside as per the outside condition. Excessive daylight creates glare and makes the occupant uncomfortable.

9.4 What passive solar architectural features are being used in the building? Illustrate the applications made in the project.

Passive solar technique:-

Building design and envelope has been optimized through selection of appropriate wall and roof construction and through adoption of solar passive measures after studying the sun path analysis to design shading devices.

- Proximately N/S orientation, opening in favorable wind direction.
- Optimizing building envelope & window design to reduce cooling load(selection of energy efficient low U value materials for envelope is application of high reflecting white china mosaic tiles to terrace).
- Day light integrated to reduce artificial lighting demand.

Adopting low energy passive cooling strategies:

Landscaping to alter micro climate for better condition-peripheral plantation and avenue plantation is provided to shed the hard areas & reduce heat island effect, reduction of noise & air pollution.

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9.5 Does the layout of street & building 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 the building complex? Substantiate with details.

Layout of buildings has been done as per the sun path analysis so that the design cuts off direct radiations of critical hours which are specific to the orientation.

Solar energy will be harnessed to meet various energy requirements of the project such as:

- Solar street lights.
- Solar blinkers.
- Solar power packs/inverters.
- We will be installing 40 KWp Solar PV which will reduce energy drawn from grid.
- **Total saving achievable is 20%**

9.6 Is the 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?

Plantation in and around the Group housing buildings project would also be act as shield which will reduce the cooling load. Passive solar architecture measures have been adopted to provide shades to windows and roof which would effectively reduce heating of building envelope. Sunshades & Buffer space designed on external façade will protect external façade from heat gain & reduce heat gain/energy consumption. **Total saving achievable is 20%.**

Providing corridors all around the building to reduce the direct sunlight on glass.

9.7 Do the structures use energy-efficient space conditioning, lightening and mechanical systems? Provide technical details. Provide details of the transformers and motor efficiencies, lightening intensity and air conditioning load assumption? Are you using CFC and HCFC free chillers? Provide specifications.

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Suitable energy optimization will be adopted during the calculation of energy load of proposed project. The space heating load will be minimized using solar structure and suitable buildings envelop material. Uses of incandescent lamp and halogen lamps have been avoided and energy efficient LED shall be used for all common area.

The diesel generator sets shall be automatically controlled to optimize their usage based on the actual load requirements at any time. Space conditioning will be provided as per national Building Code – 8; lighting intensity will be done as per the National Building Code Guidelines. **No, we are not using any chillers as this is group housing building project.**

9.8 What are the likely effects of the building activity in altering the micro-climates? Provide a self assessment on likely impacts of the construction on creation of heat island & inversion effects?

Heat emissions from the construction may be from the following sources:

- Heat absorbed from the paved and concrete structures
- Heat generated from equipment/appliances
- Heat increase due to population increase in the Group Housing Project.

However, the heat generated will not be significant and will be dissipated in the greens and open areas provided within the project area.

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 value or the R values of the individual components.

The roof tops of the buildings will be planned with puffing/bricks for water proofing and thermal insulation. Roof tops will also have partly landscaped area/gardens.

External wall-external opening will have regular door windows with slightly tinted glass. Regular walls have some cladding/fixture paints.

9.10 What precautions & safety measures are against fire hazards? Furnish details of emergency plans.

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Fire fighting measures shall be adopted as per the guidelines of NBC. External yard hydrants installed around all buildings in the complex and galvanized steel fire hose boxes/cabinet (weather proof). All external yard hydrants shall be at one meter height from finished ground level as per NBC at a distance of 45 m along the road. External fire hydrants shall be located such that no portion of any building is more than 45 m from a hydrant and the external hydrants are not vulnerable to mechanical or vehicular damage.

Fire hydrant system will be provided within the buildings, fire escape staircases and refuge areas will be provided and the building structures will be planned as per NBC.

9.11 If you are using glass as wall materials, provide details and specifications including emissivity and thermal characteristics.

The project being a residential project i.e. proposed group housing buildings project will not involve use of glass as wall material. All fenestration with U-factors, SHGC, or visible light transmittance determined, certified and labeled in accordance with ISO 15099 shall be adopted.

9.12 What is the rate of air infiltration in to the building? Provide details of how you are mitigating the effects of infiltration.

This is not centrally air conditioned building project, Group housing buildings project which rely more on natural ventilation. However during extreme weather (Summer/Winter) it is essential to have control on air filtration. With use of modern building Materials & Technology it is possible to make air tight construction and control air infiltration rate. Application of sealants/weather-strips proposed shall take care of this aspect. Air infiltration rate is controlled within the limit prescribed in ECBC norms.

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 variedly used as:

- Solar street lights.
- Solar blinkers.
- Solar power packs/inverters.

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- We will be installing 40 KWp Solar PV which will reduce energy drawn from grid.

Green area is provided along with tree plantation which will result in natural air cooling and will reduce the load on conventional energy sources.

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SECTION-10: ENVIRONMENT MANAGEMENT PLAN

10.1 The Environment Management Plan (EMP) would consist of all mitigation measures for each component of the environment due to the activities increased during the construction, operation and the entire life cycle to minimize adverse environmental impacts resulting from 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 sites including fire.

A detailed environmental management plan is presented in **Table-6, 7 & 8** to mitigate all the identified environmental impacts that are found to be significant.

Table-6: Environmental Management Plan – Construction Phase

S. No	Environmental Impacts	Mitigation Measures	Implementing Agency	Monitoring Agency
(i)	Air pollution due to emissions from construction machinery and movement of vehicles.	a) Vehicles transporting construction materials prone to fugitive dust emissions should be covered. b) Trucks carrying sand should be provided with tarpaulin sheets to cover the bed and sides of the trucks. c) Idling of delivery trucks or other equipment should not be permitted during loading and unloading. d) All construction vehicles should comply with air emission	Building Contractor	Project proponent

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		standards and be maintained properly. e) Development of alternative access routes to the site by passing the Residential areas to avoid air pollution		
(ii)	Air pollution, noise and safety hazard due to movement of construction vehicles through internal roads of project premises.	a) Improvement of road surface to standards adequate to withstand movement of heavy construction vehicles b) Installing appropriate signage and deploying flagmen during peak traffic period to regulate the movement of traffic	Building Contractor	Project proponent
(iii)	Noise pollution due to operation of construction machinery at the site.	a) Construction contracts should specify that the construction equipment should meet the noise and air emission levels as per EPA Rules, 1986. b) Generator sets should be provided with noise shields around them. c) Vehicles used for transportation of construction material should be well maintained. d) The workers operating high noise machinery or operating near it should be provided with ear plugs e) The high noise generating stationary machinery should be located at the southern or central portion of the site	Building Contractor	Project proponent

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(iv)	Impact on community water resources (quality).	<p>a) All wastewater discharges from construction site will be received in septic tanks, adequate capacity and soak pits.</p> <p>b) Oil handling and storage area will be surfaced and provided with catch pit to intercept any accidental spillages.</p>	Building Contractor	Project proponent
(v)	Sanitation and healthcare at workers camp	<p>a) The contractor shall install adequate lavatories; soak pits and baths at the construction camp to cater to the requirements of the workers.</p> <p>b) The construction camp should be located on the south-west corner of the site.</p> <p>c) The contractor shall build septic tanks with adequate capacity at the workers colony and at construction yard.</p> <p>d) All organic waste generated at construction yard and worker camp should be composted in compost trench.</p> <p>e) Quarterly health check-ups of construction workers should be organized at workers colony.</p> <p>f) Adequate provision of water supply and fuel for cooking should be made at workers colony.</p>	Building Contractor	Project proponent
(vii)	Improvement of Access Roads to the site	<p>a) Improvement and widening of the existing access roads.</p> <p>b) Establishing road connection</p> <p>c) Relocation of the encroachments in temporary shelters if the</p>	Building Contractor	Project proponent

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		approach road along the boundary of the project site connecting the road is used for transportation of construction materials to the site.		
(viii)	Impact on Micro Climate	a) On-site planting of shading trees b) Planting of numbers of trees, of species suitable to the semi arid climatic condition and alluvial soil of the project site along the roads and on the designated open spaces to ensure the improvement of micro-climatic condition of the project site.	Building Contractor	Project proponent

Table-7: Environmental Management Plan - Operational Phase

S. No	Environmental Impacts	Mitigation Measures	Organizational / Monitoring Arrangements	Training Requirements	Implementing Arrangements
(i)	Unsanitary conditions in the rehabilitation site due to inadequate management of solid waste	1. Provision for door-to-door collection of waste from blocks and arrangement for its regular removal from the site	Formation of society by involving community voluntary groups and creation of a corpus funds that could be utilized for the solid waste management in the project site.	1. Training and awareness programs with the community members. 2. Training for the segregation of waste.	Staffs would monitor the solid waste collection and will be responsible for the disposal of the waste. Day to day functioning of waste collection and management of fund would be the responsibility of the society

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(ii)	Maintenance of adequate quality of life standard in the resettlement site	1. Provision of rainwater infiltration through shallow wells at the site to augment ground water resources	Association between the community group, society and project proponent for the maintenance and operation of the system	Training and awareness program with the community members for the proper maintenance of the facility	Staff through the community group
		2. Provision for regular potable water supply to meet the drinking water needs of the staff	project proponent forming a task force with the Local Municipal Corporation to monitor the consistency in supply of potable water	Awareness program with the resident's population for the conservation of potable water	--
		3. Provision for adequate maintenance of assets to ensure their smooth functioning	Association between the community group, society and project proponent for the maintenance and operation of the system	Training for the community groups on the maintenance needs.	Society with the Community group
		4. Development and maintenance of green-belt and green areas to	project proponent in association with the community monitoring	Training to the community group on plant maintenance	Society with the community group

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		overcome micro-climatic impacts	group		
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Table- 8: Summary of Potential Impacts and Remedial Measures

S. No.	Environmental components	Potential Impacts	Potential Source of Impact	Controls Through EMP & Design	Impact Evaluation	Remedial Measures
1.	Ground Water Quality	Ground Water Contamination	<u>Construction Phase</u> Wastewater generated from temporary labor tents.	• No surface accumulation will be allowed.	No significant impact as majority of labors would be locally deployed	
			<u>Operation Phase</u> Discharge from the project.	• Proponent will provide the STP to treat the discharge of Group Housing buildings project.	No negative impact on ground water quality envisaged. Not significant.	
2.	Ground Water Quantity	Ground Water Depletion	<u>Construction Phase</u> Use of treated water from nearest DLF Site for construction	• No abstraction & thereby use of ground water during construction & STP treated water from	No significant impact on ground water quantity envisaged.	

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			activity.	nearest DLF Site shall be sourced.		
			<p><u>Operation Phase</u></p> <p>The source of water during operation phase is DLF Water Tanks.</p>	<ul style="list-style-type: none"> • Rain water harvesting shall be done to recharge the ground. • Black and Grey water recycling and reuse such that fresh water will be less. • Percolation well to be introduced in landscape plan. • Awareness Campaign to reduce the water consumption 	No significant impact on surface/ground water quantity envisaged.	In an unlikely event of non-availability of water supply, water will be brought using tankers.
3.	Surface Water Quality	Surface water contamination	<p><u>Construction Phase</u></p> <p>Surface runoff from site during construction activity.</p>	<ul style="list-style-type: none"> • Silt traps and other measures such as additional on site diversion ditches will be constructed to control 	No off-site impact envisaged as no surface water receiving body is present in the core	

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				surface run-off during site development	zone.	
			<u>Operation Phase</u> Treatment of domestic wastewater in STP proposed on site.	<ul style="list-style-type: none"> Domestic water will be treated in nearest common STP of DLF. 	No off-site impact envisaged	Excess treated water will be either used for irrigation purposes outside the project site after proper treatment or disposed off in the sewer. CPCB standards for usage of treated wastewater will be followed.
4.	Air Quality	Dust Emissions	<u>Construction Phase</u> All heavy construction activities. Storage of construction material at site. Site excavation.	<ul style="list-style-type: none"> Suitable control measures will be adopted for mitigating the PM_{2.5}& PM₁₀ level in the air as per air pollution control plan. 	Not significant because dust generation will be temporary and will settle fast due to dust suppression techniques.	During construction phase the labours will be provided masks. Water sprinklers will be used for suppression of dust during construction

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						phase.
		Emissions of PM _{2.5} & PM ₁₀ , SO ₂ , NO ₂ and CO	<p><u>Construction Phase</u></p> <p>Operation of construction equipment and vehicles during site development.</p> <p>Running D.G. set (back up)</p>	<ul style="list-style-type: none"> •Rapid on-site construction and improved maintenance of equipment 	Not significant.	Regular monitoring of emissions and control measures will be taken to reduce the emission levels.
			<p><u>Operation Phase</u></p> <p>Power generation by DG Set during power failure</p> <p>Emission from vehicular traffic in use</p>	<ul style="list-style-type: none"> •Use of low sulphur diesel if available •Providing Footpath and pedestrian ways within the site to suppress the dust •Green belt will be developed with specific species to help to reduce PM_{2.5}& PM₁₀ level 	<p>Not significant</p> <p>DG set would be used as power back-up (approx 6 hours)</p> <p>No significant increase in ambient air quality level is expected from the project's activities.</p>	<p>Stack height of DG set above the tallest building as per CPCB standards</p>

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				<ul style="list-style-type: none"> • Proper maintenance of equipment • Stack height of DG sets will be provided sufficiently high as per CPCB standards. 	There are no sensitive receptors located within the vicinity of site.	
5.	Noise Environment		<p><u>Construction Phase</u></p> <p>Noise from construction activities</p> <p>Noise from heavy machineries, DG sets, etc.</p>	<p>Construction activity will be limited to day time hours only</p> <p>Provision of noise shields near the heavy construction operations and acoustic enclosures for DG set.</p>	Minimal or no impact is envisaged	Use of Personal Protective Equipment (PPE) like earmuffs and earplugs during construction activities.

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			<u>Operation Phase</u> Noise from vehicular movement Noise from DG set operation	<ul style="list-style-type: none"> • Green Belt Development • Development of silence zones to check the traffic movement • Use of equipment fitted with silencers • DG set rooms will be equipped with acoustic enclosures 	No significant impact due to suitable width of Greenbelt.	
6.	Land Environment	Soil contamination	<u>Construction Phase</u> Disposal of construction debris	Construction debris will be collected and suitably used on site as per the solid waste management plan for construction phase	No significant impact. Impact will be local, as waste generated will be reused for filling of low lying areas etc.	

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			<p><u>Operation Phase</u></p> <p>Generation of municipal solid waste Used oil generated from D.G. set</p>	<ul style="list-style-type: none"> • The solid waste generated will be managed as per Solid Waste Management Rules, 2016. • Collection, segregation, treatment and disposal will be done as per Solid Waste Management Rules, 2016 by the authorized agency • Used oil generated will be sold to authorized recyclers 	<p>Since biodegradable waste will be treated at site & other solid waste will be handled by the authorized agency, waste dumping will not be allowed. Hence, No significant impact is expected.</p> <p>Negligible impact.</p>	
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7.	Biological Environment (Flora and Fauna)	Displacement of Flora and Fauna on site	<u>Construction Phase</u> Site Development during construction	<ul style="list-style-type: none"> • Important species of trees, if any, will be identified and marked and will be merged with landscape plan 	The site has vegetation at site.	
			<u>Operation Phase</u> Increase in green covered area	<ul style="list-style-type: none"> • Suitable green belts will be developed as per landscaping plan in and around the site using local flora 	Beneficial impact.	
8.	Socio-Economic Environment	Population displacement and loss of income	<u>Construction Phase</u> Construction activities leading to relocation	Group Housing Building project as per the Gurugram- Maneser urban complex- 2031 Master Plan.	No negative impact.	
			<u>Operation Phase</u> Site operation	<ul style="list-style-type: none"> • Project will 	Beneficial impact	

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				<p>provide employment opportunities to the local people in terms of labor during construction and service personnel (guards, securities, gardeners etc) during operations</p> <ul style="list-style-type: none"> • Providing quality-Integrated infrastructure. 		
9.	Traffic Pattern	Increase of vehicular traffic	<p><u>Construction Phase</u></p> <p>Heavy Vehicular movement during construction</p>	<ul style="list-style-type: none"> • Heavy Vehicular movement will be restricted to daytime only and adequate parking facility will be provided 	No negative impact	
			<p><u>Operation Phase</u></p>			

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			<p>Traffic due to residents and visitors once the project is operational</p>	<ul style="list-style-type: none"> • Vehicular movement will be regulated inside the project with adequate roads and parking lots in the Project. 	<p>No major significant impact as green belt will be developed which will help in minimizing the impact on environment.</p>	
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**Proposed Group Housing Buildings in Zone 10, DLF 5
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INTRODUCTION

PROJECT INTRODUCTION:

The proposed project is Group Housing Buildings Project planned at, Sector-54, Gurugram, and Haryana by **M/s DLF Ltd.** The project had received License from the Directorate of Town & Country Planning, Haryana with 8 Licenses for 7.574 Acres (License No. 38, 52, 53 of 1996 dated 16/04/1996 which is valid up to 15/04/2024, License No. 129, 131, of 1995 dated 29/12/1995 which is valid up to 28/12/2024 and License No. 02, 04, 06 of 2002 dated 25/10/2002 which is valid up to 24/10/2024). The zoning plan is obtained from DTCP dated.20.11.2020 for 476.6015Acres for group housing colony in DLF 5, Gurugram Haryana

The various land use, FAR and ground coverage permitted as per zoning plan vis-à-vis achieved & proposed is given Table No. 1 & 2. Total plot area of Phase-V Group Housing is 476.6015 Acres (19, 28,738.00 Sq.mt) out of which 7.574 Acres (30,653.317 Sq.mt) are to be developed for this particular Group Housing Buildings Project.

Table No. 1 Proposed & Achieved Ground Coverage and FAR of DLF City Phase-V Group Housing Scheme

S. No	Type of Land Use	Ground Coverage (in Acres)			FAR (in sqm)		
		Permissible	Achieved & Proposed	Balance	Permissible	Achieved & Proposed	Balance
1.	Group Housing	110.214	40.063	70.141	3,122,119.7	2,119,341.3	1,002,778.4
2.	Shopping/Commercial	7.744	7.532	0.212	188,050.2	186,368.3	1,683.5
3.	Cultural, Recreational & Amusement Activities	No regulation			No regulation		

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**Table No. 2 Proposed & Achieved Ground Coverage and FAR of DLF City Phase-V
Group Housing Scheme**

S. No	Type of Land Use	Ground Coverage (in sqm)			FAR (in sqm)		
		Permissible	Achieved & Proposed	Balance	Permissible	Achieved & Proposed	Balance
1	Group Housing	446,016.5	162,127.9	283,848.2	3,122,119.7	2,119,341.3	1,002,778.4
2	Shopping/Commercial	31,338.6	30,480.7	857.9	188,050.2	186,368.3	1,683.5
3	Cultural, Recreational & Amusement Activities	4,821.8	4,030.6	791.2	28,930.7	5,422.7	23,508.0

Now we are proposing another group housing buildings project with total land area of 7.574 Acres /30,653.317 Sq.mt and Built up area for the same comes out to be **2,33,377.998 m²**.

SITE LOCATION AND SURROUNDINGS:

The proposed project site is located in Zone-10, DLF-5, Sector-54, Gurugram, Haryana which is easily approachable through NH-148A which is ~3.5 Km away from the project site towards North direction and NH-48 which is ~5.5 Km away from the project site towards NW direction and nearest railway station is Gurgaon Railway Station at a distance of ~11 Km from project site in NW direction. Nearest airport is Indira Gandhi International Airport at a distance of ~10.3 Km from the project site in North direction.

The Co-ordinates of the project site are as follows:

Latitude- 28°26'44.55"N

Longitude-77°06'48.93"E

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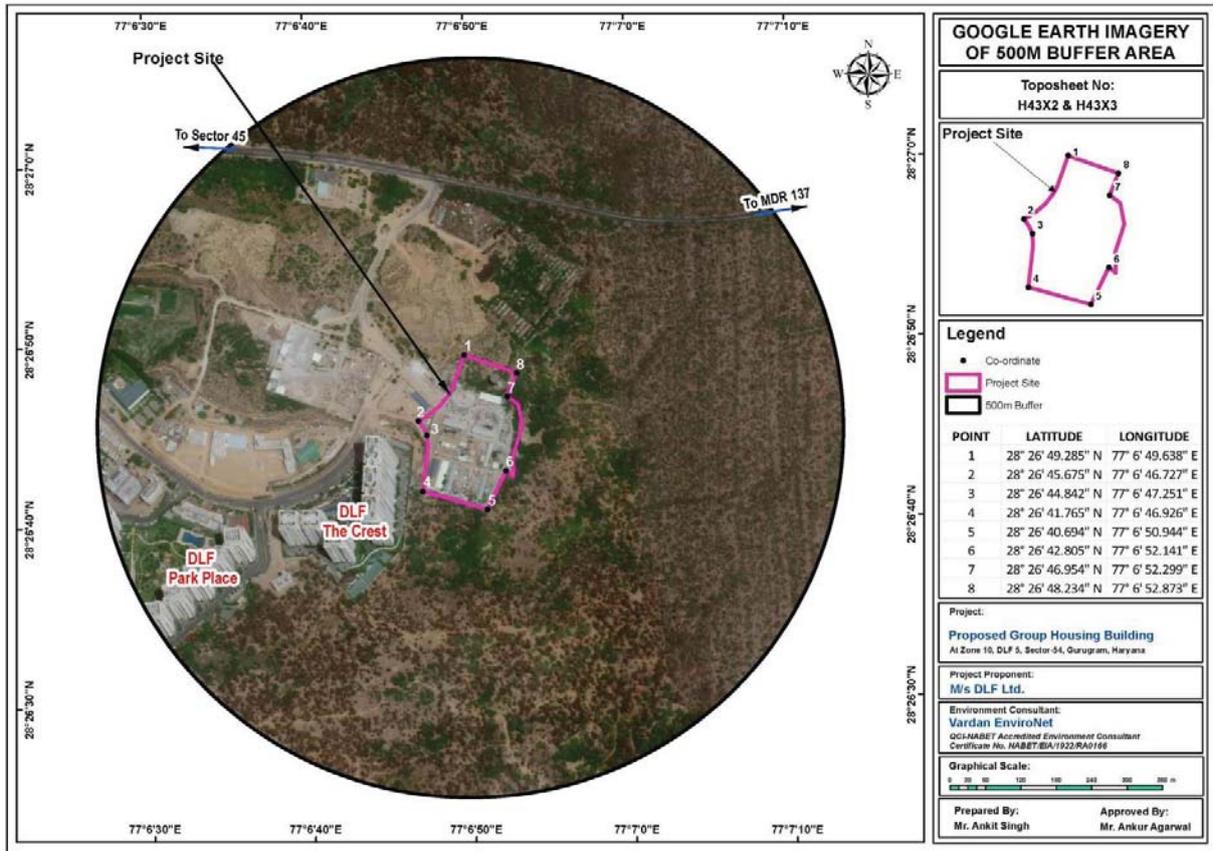


Figure-1: Google image showing the project site with site co-ordinates

PROJECT SITE SURROUNDING INFRASTRUCTURE

Nearest Road –

- NH-148A – ~3.5 Km towards North direction
- NH-48 – ~5.5 Km towards NW direction

Nearest Railway station- Gurgaon Railway Station – ~11 km towards NW direction

Nearest Airport- Indira Gandhi International Airport – ~10.3 km towards N direction

Nearest Village-

- Wazirabad – ~Adjacent from the project side
- Chakkarpur – ~3.7 Km towards NW direction
- Behrampur – ~4.2 Km towards South direction

Nearest School-

- R.B.P School – ~3.7 Km towards NW direction
- Agarsen School – ~7.2 km towards WSW direction

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Nearest Hospital-

- d) Narayan Hospital~4.1 Km towards N direction
- e) Sanvit Hospital – ~7.6 Km towards W direction

Nearest Temple-

- f) Hanuman Temple - ~7.7 Km towards West
- g) Shiromani Naam Dev Temple- ~7.9 Km towards NNW direction

SALIENT FEATURES & AREA DETAILS

Table 3: Area Statement

S.No.	Particular	Total Area(Sqm.)
1.	Total Plot Area	30,653.317 (7.574 Acres)
2.	Proposed Ground Coverage	6,369.381
3.	Proposed Residential FAR (Including Community Building)	1,43,937.510
4.	Total FAR (Residential+ Community Building)	1,43,937.510
5.	Mumty Machine Room	1,112.604
6.	Stilt area	2,700.018
7.	Meter Room & Guard Room	18.000
8.	Surface Staircase	38.175
9.	Stairs	3,460.908
10.	Basement	82,110.783
11.	Non FAR (Mumty Machine Room+ Stairs Area & Stilt Area+ Meter Room & Guard Room+Basement+ Surface Staircase)	89,440.488
12.	Built up Area (FAR+Non FAR)	2,33,377.998
13.	Green Area (30% of plot area)	9,195.995

*FAR=Floor Area Ratio

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Salient Features

S. No.	Particulates	Total
1	Total Population	4508
2	Total Water Requirement	391 KLD
3	Total Fresh Water Requirement	255 KLD
4	Total Wastewater Generated	294 KLD
5	Solid Waste Generation. Kg/day	2069 kg/day
6	Maximum Building Height (meters)	109.350
7	No. of DG Set	5 DG sets of tota capacity 8,250 KVA (3×2000 KVA + 1×1250 KVA+ 1×1000 KVA).
8	Total Power Requirement & Source	5874 KW (DHBVN)
9	No. of Block	4 nos
10	Main Dwelling Units	520
11	Service personnel units	52
12	No. of Floors	S+ 33
13	No. of Basement	4 nos
14	Parking provided	1,615 ECS

POPULATION DENSITY

The total population of the project will be **4,508 persons**. The detailed Tower wise population breakup is given below in the following **Table- 4**

Table 4: Population Details

S. No.	Occupancy Type	PPU	Unit or Area (Sq.mt)	Total Population
1	Main Dwelling Units (4-BHK)	@7 Persons	520	3640
2	Service Personnel units	@2 Persons	52	104
3	Community Building	lumpsum	--	300
4	Visitors	@ 10% of total population		364
5	Security & Maintenance staff	lumpsum		100
	Total Population			4508

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WATER REQUIREMENT

The water will be supplied through DLF Water Tanks. Total water requirement for the project will be approximately **391 KLD**, out of which 255 KLD is fresh water requirement and 136 KLD is treated water requirement which will be used for flushing and horticulture. The total water requirement of proposed project is given below in **Table- 5**.

Table-5(a): Calculations for Water Demand (Summer season)

S.No	Unit Type	Population	Rate of water Demand	Water Requirement (KLD)			Waste water Generated
				Domestic	Flushing	Total	Total
1	Main Dwelling Units	3640	86	236.60	76.44	313.04	265.72
2	Service Personnel units	104	86	6.76	2.18	8.94	7.59
3	Community Building	300	45	7.50	6.00	13.50	12.00
4	Visitors	364	15	1.82	3.64	5.46	5.10
5	Security & Maintenance staff	100	45	2.50	2.00	4.50	4.00
6	Horticulture (Area 9195.995sqm)		5L/Sq.m			45.98	
	Total	4508		255.18	90.26	391.42	294.41
				Say 255	Say 90	Say 391	Say 294

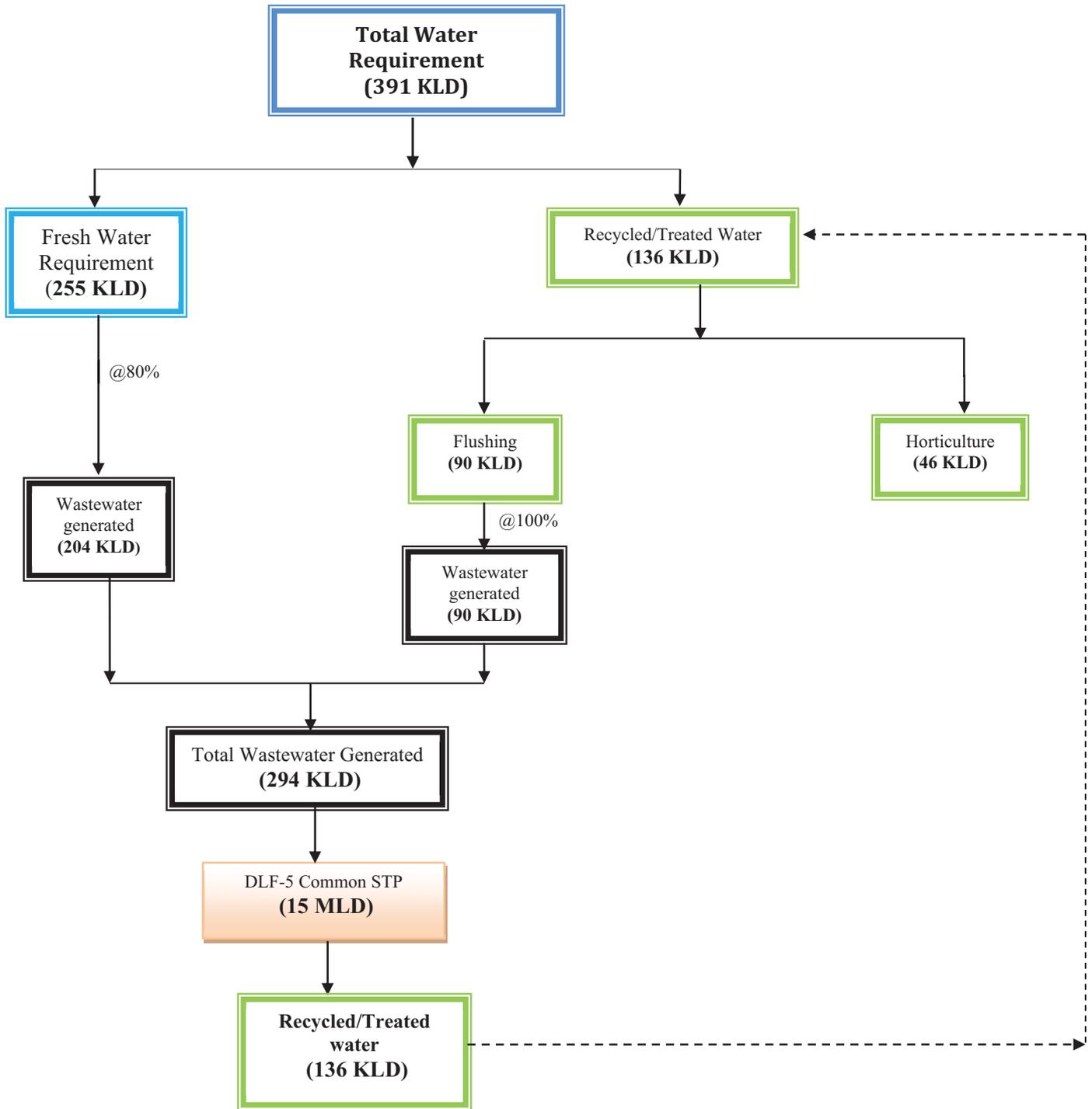


Figure 2(a): Water Balance Diagram during Summer Season

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Table-5(b): Calculations for Water Demand (Winter Season)

S.No	Unit Type	Population	Rate of water Demand	Water Requirement (KLD)			Waste water Generated
				Domestic	Flushing	Total	Total
1	Main Dwelling Units	3640	86	236.60	76.44	313.04	265.72
2	Service Personnel units	104	86	6.76	2.18	8.94	7.59
3	Community Building	300	45	7.50	6.00	13.50	12.00
4	Visitors	364	15	1.82	3.64	5.46	5.10
5	Security & Maintenance staff	100	45	2.50	2.00	4.50	4.00
6	Horticulture (Area 9195.995sqm)		3L/Sq.m			27.59	
	Total			255.18	90.26	373.03	294.41
				Say 255	Say 90	Say 373	Say 294

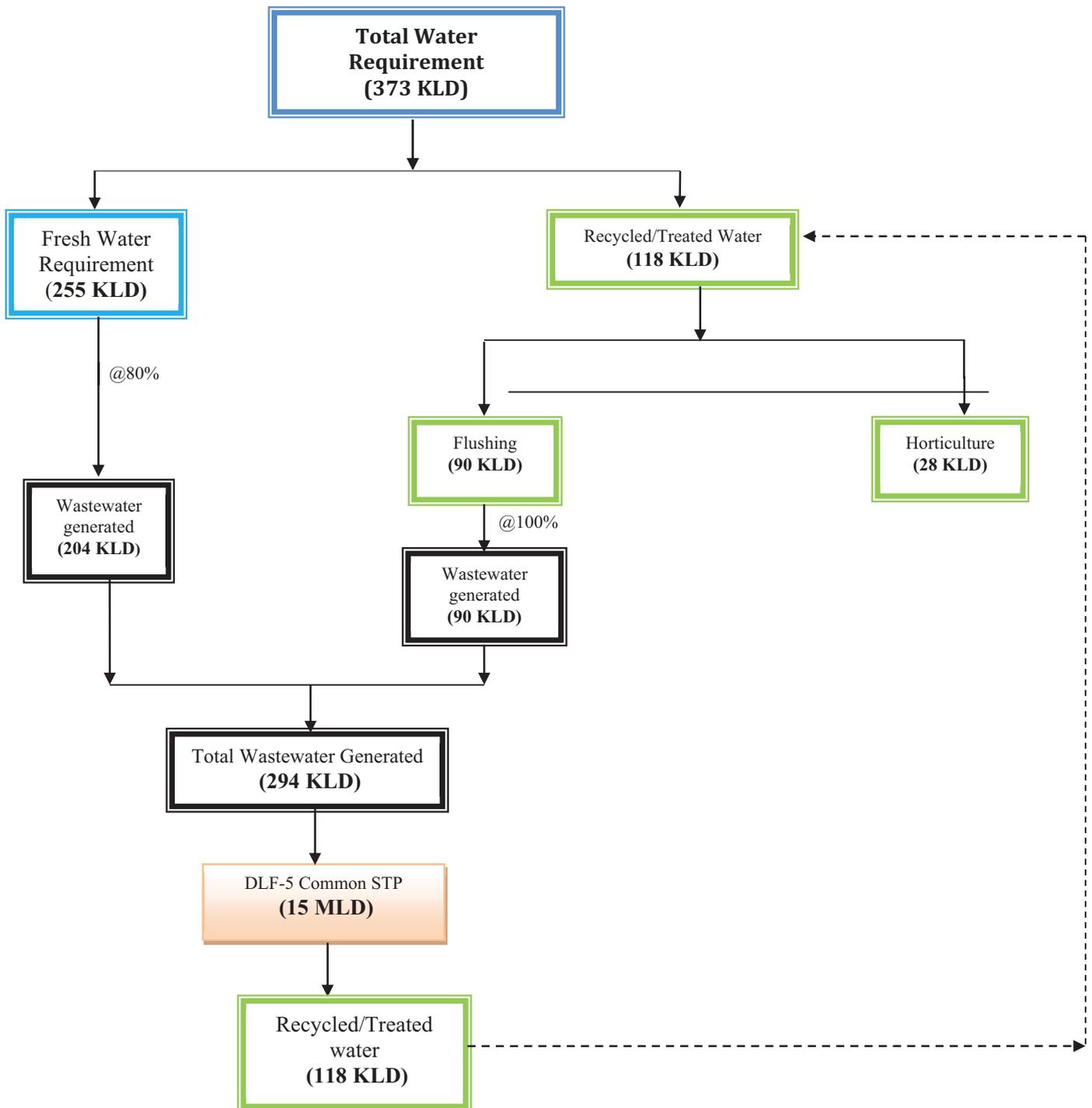


Figure- 2 (b): Water Balance Diagram during Winter Season

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Table-5(c): Calculations for Water Demand (Monsoon Season)

S.No	Unit Type	Population	Rate of water Demand	Water Requirement (KLD)			Waste water Generated
				Domestic	Flushing	Total	Total
1	Main Dwelling Units	3640	86	236.60	76.44	313.04	265.72
2	Service Personnel units	104	86	6.76	2.18	8.94	7.59
3	Community Building	300	45	7.50	6.00	13.50	12.00
4	Visitors	364	15	1.82	3.64	5.46	5.10
5	Security & Maintenance staff	100	45	2.50	2.00	4.50	4.00
6	Horticulture (Area 9195.995sqm)		1L/Sq.m			9.55	
	Total			255.18	90.26	354.64	294.41
				Say 255	Say 90	Say 355	Say 294

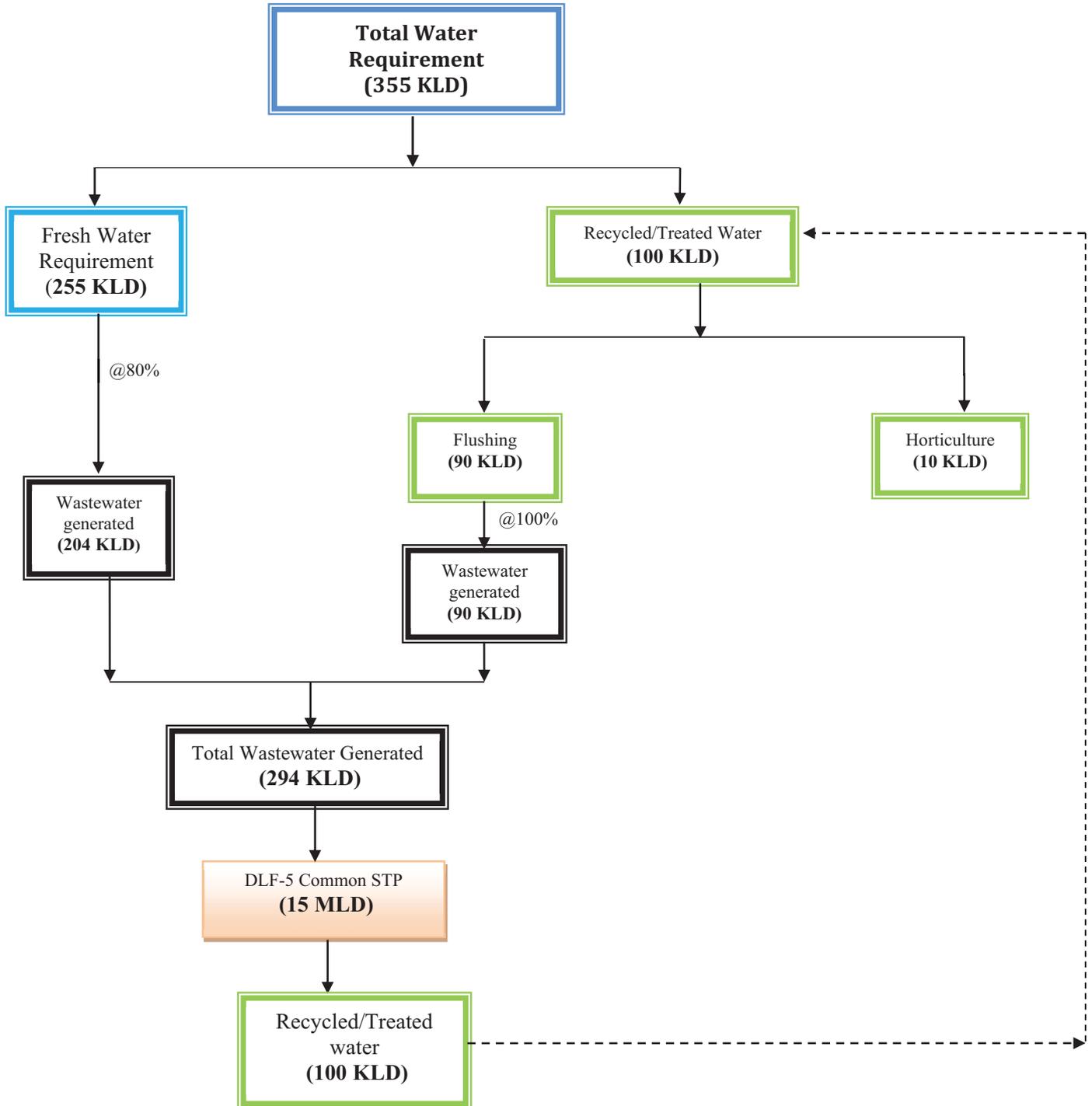


Figure- 2 (c): Water Balance Diagram during Monsoon Season

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Wastewater Generation & Treatment:

The wastewater will be treated in DLF-5 common Sewage Treatment Plant of total capacity of 15 MLD (9 MLD based on SBR technology & 6 MLD based on MBR technology) nearby the project premises. 136 KLD treated water from common STP of DLF Phase-5 will be reused for flushing and horticulture within our site.

Table-6: Calculation of Wastewater Generation

Details	Water (KLD)
Water requirement for domestic purpose	255 KLD
Wastewater generated from domestic use (@ 80% of domestic water requirement)	204 KLD
Water requirement for Flushing Purpose	90 KLD
Wastewater generated from Flushing (@ 100% of flushing requirement)	90 KLD
Total wastewater generated	294 KLD
Use of Recycled Water (136 KLD recycled treated water will be reused for flushing and horticulture)	1. Flushing :90 KLD 2. Horticulture :46 KLD

SEWAGE TREATMENT TECHNOLOGY

The STP adequacy details are as under:

S. No	Description	Quantity
1	Total wastewater generated from DLF 5 projects	6.518 MLD
2	Capacity of Common STP at DLF5	15 MLD
3	Balance Capacity still available for treating Wastewater from DLF5 projects	8.482 MLD
4	Wastewater generation from proposed Group Housing Buildings in Zone 10, DLF 5, Sector-54, Gurugram, Haryana	294 KLD

- ❖ Therefore the existing common STP of capacity 15 MLD is having sufficient capacity in addition to the existing projects to treat the wastewater generated from the proposed Group Housing Buildings in Zone 10, DLF 5, Sector-54, Gurugram, Haryana. Details of Common STP of capacity 15 MLD is **attached as Annexures No.33 at page no.411-422.**

RAIN WATER HARVESTING

The storm water disposal system for the premises shall be self-sufficient to avoid any collection/stagnation and flooding of water. The amount of storm water run-off depends upon many factors such as intensity and duration of precipitation, characteristics of the tributary area and the time required for such flow to reach the drains. The drains shall be located near the carriage way along either side of the roads. Taking the advantage of road camber, the rainfall run off from roads shall flow towards the drains. Storm water from various plots/shall be connected to adjacent drain by a pipe through catch basins. Therefore, it has been calculated to provide **8 nos.** rainwater harvesting pits at selected locations, which will catch the maximum run-off from the area.

- 1) Since the existing topography is congenial to surface disposal, a network of storm water pipe drains is planned adjacent to roads. All building roof water will be brought down through rain water pipes.
- 2) Proposed storm water system consists of pipe drain, catch basins and seepage pits at regular intervals for rain water harvesting and ground water recharging.
- 3) For basement parking, the rainwater from ramps will be collected in the basement storm water storage tank. This water will be pumped out to the nearest external storm water drain.
- 4) Peak Hourly rainfall of 90 mm/hr. shall be considered for designing the storm water drainage system. Rain water harvesting has been catered to and designed as per the guideline of CGWA. At the bottom of the recharge well, a filter media is provided to avoid choking of the recharge bore. Design specifications of the rain water harvesting plan are as follows:
 - Catchments/roofs would be accessible for regular cleaning.
 - The roof will have smooth, hard and dense surface which is less likely to be damaged allowing release of material into the water. Roof painting has been avoided since most paints contain toxic substances and may peel off.
 - All gutter ends will be fitted with a wire mesh screen and a first flush device would be installed. Most of the debris carried by the water from the rooftop like leaves, plastic bags and paper pieces will get arrested by the mesh at the terrace outlet and to prevent contamination by ensuring that the runoff from the first 10-20 minutes of rainfall is flushed off.
 - No sewage or wastewater would be admitted into the system.
 - No wastewater from areas likely to have oil, grease, or other pollutants has been connected to the system

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By M/s DLF Limited*

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Table- 7: Rainwater Harvesting Calculation

S. No.	Type of Surface	Catchment's Area (m ²) [A]	Runoff Coefficient [C]	Rainfall Intensity m/hr [I]	Discharge (Run Off) [Q=CIA] m ³ /hr
1.	Rooftop Area	6369.381	0.9	0.09	515.92
2.	Green Area	9195.995	0.2	0.09	165.53
3.	Road & Paved Area (including parking area)	15087.941	0.7	0.09	950.54
	Total	30,653.317			1631.99

Taking 20 minutes retention time, total volume of storm water $1631.99 \times 0.33 = 538.55 \text{ m}^3$

Taking the effective diameter and depth of a Recharge pit 4 m and 2.8 m respectively,

Volume of twin bore Recharge pit ($2 \times \pi r^2 h$) = ($2 \times 3.14 \times 2 \times 2 \times 2.8$) = 70.33 m^3

Hence No. of pits required = $538.55 / 70.33 = 7.65$, Say 8 Pits.

Total **8 nos.** of Rain Water Harvesting pits are being proposed for artificial rain water recharge within the project premises.

We will provide digital water level recorder (DWLR) at the RWH pits.

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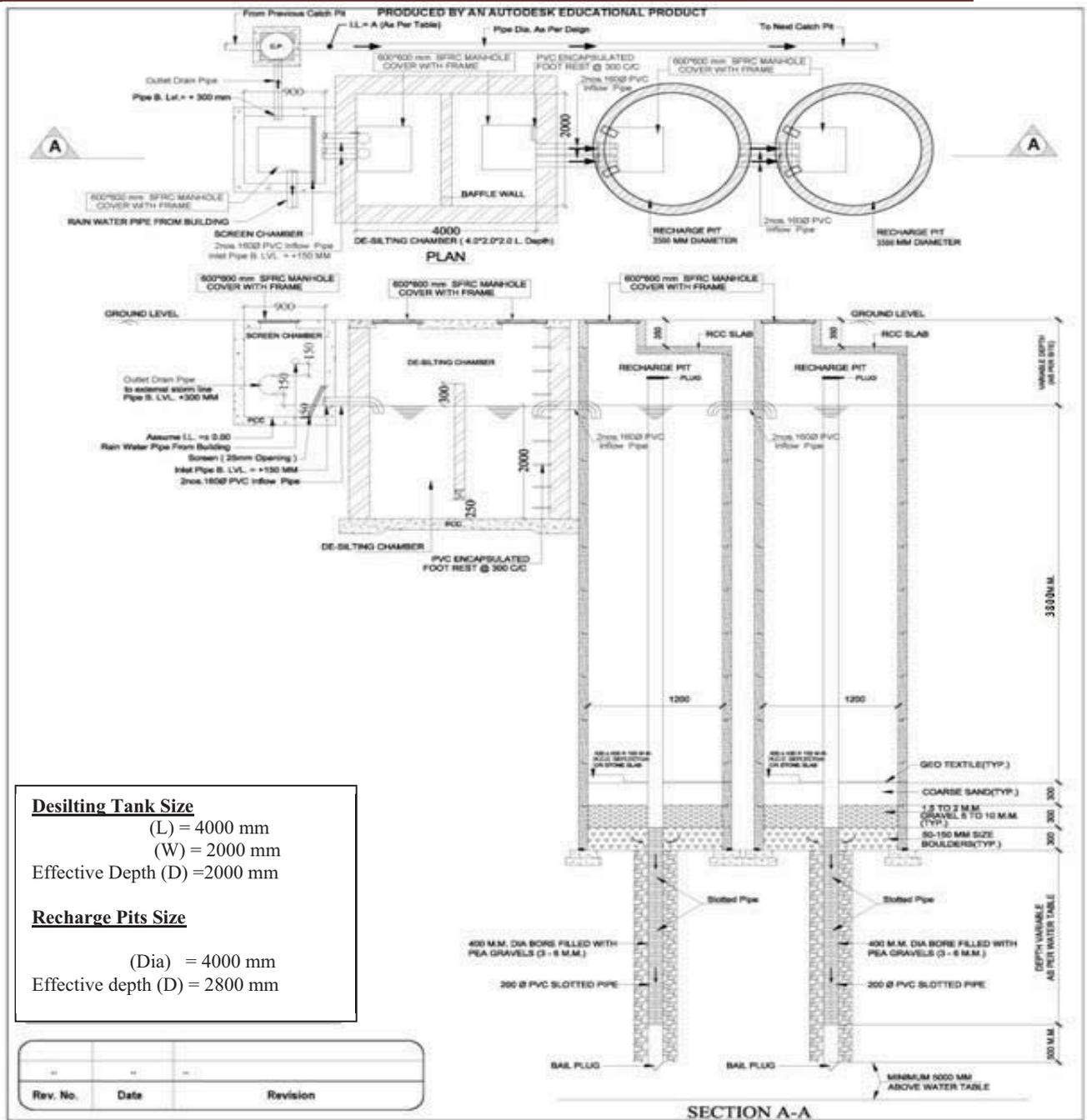


Figure-3: Rain Water Harvesting Pit Design

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Maintenance Plan for RWH Pit:

Table No 8: RWH pit maintenance plan

Routine Maintenance Tasks	Frequency
Remove leaves and debris from gutters and downspouts	On interval of 04 month
Remove any algae growth	On interval of 04 month
Inspect and clean prescreening devices and first flush diverters	Quarterly
Inspect and clean storage tank lids	Annually
Inspect for and repair any clogging	Annually
Inspect and repair mosquito screens	Annually
Inspect pit and remove sediment build up	Annually
Clear overhanging vegetation and trees over roof	On every six months
Check integrity of backflow preventer	Annually
Inspect structural integrity of tank, pump, pipe, and electrical system and repair any damage	On every six months
Replace damaged or defective system components	As needed

VEHICLE PARKING FACILITIES

Adequate provision will be made for car/vehicle parking at the proposed project site. There shall also be adequate parking provisions for visitors so as not to disturb the traffic and allow smooth movement at the site.

Required Car Parking for Main Units = 1.5 ECS/Unit = 520 x 1.5 = 780 ECS

Proposed Car Parking For Main Units = 1,615 ECS

Proposed Car Parking	
Surface	52
Basement-1	389
Basement-2	392
Basement-3	391
Basement-4	391
Total	1,615

POWER REQUIREMENT

The power supply shall be supplied by Dakshin Haryana Bijli Vitran Nigam (DHBVN). The required power load for group housing building project will be approx. 5,874 KW.

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Details of D.G Sets:

Total 05 Nos. of DG sets of total capacity of 8,250KVA (3×2000 KVA + 1×1250 KVA+ 1×1000 KVA) will be operated during power failure. The DG sets will be air cooled and equipped with acoustic enclosure to minimize noise generation and adequate stack height for proper dispersion.

SOLID WASTE GENERATION

Solid waste would be generated both during the construction as well as during the operation phase. The solid waste expected to be generated during the construction phase will comprise of excavated materials, used bags, AAC Blocks, concrete, MS rods, tiles, wood etc. The following steps are proposed to be followed for the management of solid waste:

- Construction yards are proposed for storage of construction materials.
- The excavated material such as soil and stones will be stacked for reuse during later stages of construction
- Excavated top soil will be stored in temporary constructed soil bank and will be reused for landscaping of the proposed Group Housing Buildings project.
- Remaining soil shall be utilized for refilling / road work / rising of site level at locations/ selling to outside agency for construction of roads etc.

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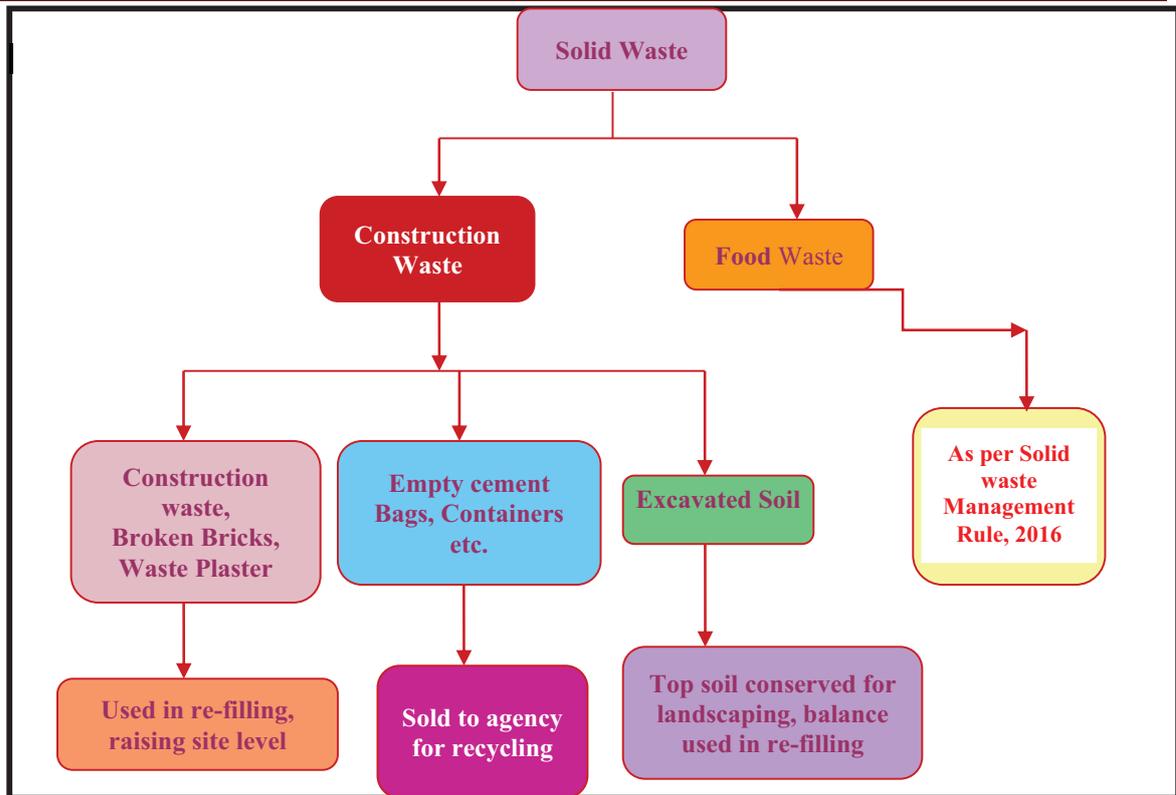


Figure-4: Solid Waste Management Scheme during Construction Phase

During the operation phase, the solid waste generated from Group housing buildings project will be generating approx. **2,069 kg/day**. Detailed calculation is shown in **Table: 9**.

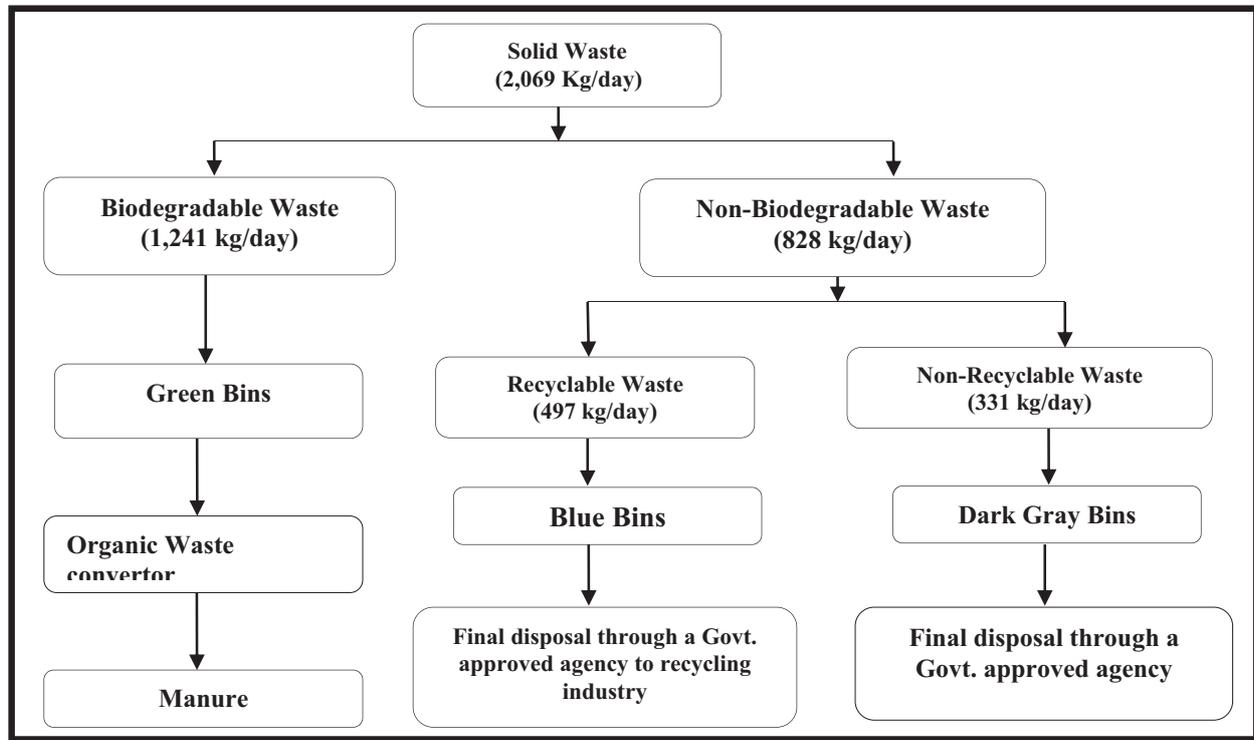
Table- 9: Solid Waste Generation during Operation Phase

S.No	Unit Type	Population	Rate(Kg/Cap/Day)	Waste Generated
1	Main Dwelling Units	3640	0.5	1820
2	Service Personnel units	104	0.5	52
3	Community Building	300	0.3	90.00
4	Security & Maintenance staff	100	0.3	30.00
5	Visitors	364	0.15	54.60
6	Horticulture waste(2.272 Acre)	0.2 kg/acres/day	2.272	0.45
7	Sludge from STP	294	7.51 % of waste water	22.08
	Total			2069.13
				Say 2069 kg/day

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(Source: For Waste Collection, Chapter 3, Table 3.6, Page no. 49, Central Public Health & Environment Engineering Organization, Ministry of Urban Development, (Government of India, May 2000))



Note: we will be abide by plastic & E-waste management (Amendment) rule 2018

Figure 5: Solid Waste Management Scheme during Operation Phase

Following arrangements will be made at the site in accordance to Solid Wastes Management Rules, 2016.

1 Collection and Segregation of waste

1. A door to door collection system will be provided for collection of domestic waste in colored bins from Dwelling units, Servant units, Community building, etc.
2. Adequate number of colored bins (Green and Blue bins for bio-degradable and non-biodegradable respectively) is proposed to be provided.
3. Litter bin will also be provided in open areas like parks etc.

2 Treatment of waste

Bio-Degradable wastes

1. Bio-degradable waste will be treated in Organic Waste Converter and the compost will be used as manure.
2. STP sludge is proposed to be used for horticulture as manure.

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-
3. Horticultural Waste is proposed to be composted and will be used for gardening purposes.

Recyclable wastes

1. Grass Recycling – The cropped grass will be spread on the green area. It will act as manure after decomposition.
2. Recyclable wastes like paper, plastic etc. will be sold off to recyclers.
3. Hazardous wastes such as waste oil will be sold off to authorized recyclers.
4. Buy back arrangement will be made for batteries.

3 Disposal

The Municipal Solid Waste Management will be conducted as per the guidelines of Solid Waste Management Rules, 2016. The inert non-recyclable wastes will be disposed through government approved agency for land filling. A solid waste management scheme is depicted in the above figure for proposed Group Housing buildings Project.

Organic waste management by automatic composting machine

- This is highly compact solution for organic and biodegradable/wet waste.
- Decentralized waste management solution aesthetically designed just take less than a single car park space for a 250 kg unit capable to treat wet waste generated.
- It reduces labor cost because of safe handling system, as no pathogens generated due to operations in high temperature thereby reducing health risks significantly.
- Very fast Waste to manure processing duration i.e. 1-3 days in comparison of traditional composting methods
- No transport cost as machine can operate at on site without any multi-step process by just provide input, plug and start operation
- Designed to keep rodents at bay so cleanest technology with negligible odour.
- Life span 25-30 years and AMC to ensure 24X7 days of uninterrupted operation
- Microbes present within incubator feed on the organic matter and convert in to compost.
- Moisture content and temperature automatically regulated using sensors at the bottom of the tank whenever organic waste is added.
- Fully aerobic digestion is facilitated by the periodic and intermittent rotation of the mixing blades (no crushing/grinding) to maximize microbe activation.
- The final decomposition is done by specialized thermophilic microbes which thrive in high temperature and high acidic or salty atmospheres.
- The final product in the form of compost can be used as manure in to landscape area management.

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- The wet waste reduced in volume by 90 % and 100 kg waste converted in to 10-15 kg compost which can be removed in 10-15 days and expenditure to process per kg of waste is less than 01 INR.
- The output compost from OWC can be mixed with soil in the ratio of 1:10 before using as manure.
- Care to be taken to only moisten the waste and not make it dripping wet.
- Clear the compost once it reaches the red level because excess compost might spoil the machine by entering the motor assembled.
- A buffer of 3-6 days on composting of pure garden waste necessarily to be taken due to direness of such waste in comparison of other food waste.

Technical Specification

Operation	Fully Automatic
Output	Organic Manure
Installation Requirements	Almost Plug and Play. Vent to be connected outdoors or storm water lines. No need of water inlet. Water may be required, only to clean the machine externals and any piled waste.
Control Systems	PLC Based
Composting Tank	SS
Housing	M.S with Powder coating or SS panels as a variant
Input / Output	Door for waste input Separate door for getting out compost
Heater	Insulated oil heating chamber or Heating pads as a variant
Other Features	<ul style="list-style-type: none"> • Provided with waste overload function • Indicators for Power mode, heater & power saving mode • Stainless steel (SS304) shaft & mixing blades • Safety feature: Internal mixing blades automatically stop when hopper door is opened (in auto mode) • Can be run in auto mode or manual mode • Internal shaft turns and sends out compost, when the compost door is opened
Doors	Separate door for waste input & separate door for compost removal
Preferred Location for installation	Can be a garden, area adjacent to garden, car park, preferably with a connection to the drainage
Life of the Machine	Expected around 25 years
Capacity Available	<ol style="list-style-type: none"> 1. 1,250 Kg/day 2. 500 Kg/day 3. 250 Kg/day 4. 150 Kg/day 5. 100 Kg/day 6. 40 Kg/day
Required Capacity	Ideally should be 20 % higher capacity of OWC to be selected as per estimated volume of wet/organic waste.
Proposed Capacity	20% more than OW

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	<p>Organic Waste = 1,241 Kg Final OWC = 1,241 + 248 (20% of 1,241) = 1,489 Kg i.e. Total 2 nos. of Organic waste converters of capacity 1,500 Kg/day (1×1,250 Kg/day+1× 250Kg/day)</p>
--	--

1. Organic Waste

Organic waste, includes kitchen waste and garden waste generated from the dwelling units, will be treated by Organic waste compost machine on site. The compost is then used for landscaping on the site. The OWC machine will be placed at a designated area.

2. Type of Waste to be Treated

- Kitchen waste will be collected from units and lobbies of the Blocks. This waste will be stored in garbage room which is located at the basement of the towers and further send to organic waste converter for treatment.
- Landscape waste is bio-degradable waste and will be composted in Organic waste converter. After post occupancy, horticulturist will collect garden waste and store in basement area, where organic waste converter is located. The treated organic waste will be used on site as manure for the landscape at the site.

3. Organic Waste Treatment System

OWC (Organic Waste Converter) is an easy to use Decentralized Waste Management System to turn large amounts of organic waste such as kitchen waste, garden waste, food processing waste etc. into compost. The system is designed to eliminate odour and also to remove the problem of irritants such as flies and rats.

The OWC is a bio-mechanical Composting System which consists of the OWC machine, Curing System and a number of optional accessories for specific waste challenges. The machine takes organic waste and Bioculum as input and to create manure starter. In just one week of curing the processed waste is transformed into manure that can be used on site in gardens or agriculture.

4. Process Description of Organic Waste Converter

4.1 Organic waste collection

The organic waste from the kitchens in general contains food waste from the pre-cooking operation and post cooking remnant or excess food. Waste from garden containing pruning's and small branches of the trees up to 2 cm diameter and/or bones, will be passed through the Shredder before it is placed into the container of the OWC.

4.2 Organic Waste Treatment

Organic waste fed into OWC is mixed, aerated & fluidized and crushed for 5 minutes. Then container of the OWC is opened and observations are noted. If the crushed material has more

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moisture content which can be seen by visual observation, then absorbing media is added into the container up to 20% of the weight of the waste depending on the moisture content in the waste. The odour control powder “Bioculum” is added at the dosage rate of 1 gm. of Bioculum/kg of waste. Then the lid of the container is closed and again the OWC is operated for 5 minutes. After the completion of 5 minutes, the system will give audio-video indication by a beep-beep sound and indication of light. The lid is then opened and the processed material is observed. If it is turned to granular free flowing material, then lid is closed and the system is restarted. The bottom valve is opened for draining of the material. The raw compost is collected in the trolley/crates placed underneath of OWC System.

4.3 Curing of Raw Compost

For maturing and curing the raw compost, the material from the trolley is shifted in the crates which have perforation for aeration and then crates are placed in the curing system. Depending on the waste generation capacity, number of curing systems has to be proposed. Single Curing System has 100 kg/day capacity whereas Double Curing System has 200 kg/day capacity. After 10 days curing period, the compost from the tray can be used for application to the plants or any other mode of usage of manure in the agriculture.



Figure-6: Curing of raw compost in perforated crates

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GREEN AREA

Total green area measures **9,195.995 m²** i.e. **30 %** of the plot area which will be area under tree plantation along the periphery of the project, in the lawns and along the roads. Evergreen tall and ornamental trees and ornamental shrubs have been proposed to be planted inside the premises. Lawns will also be developed by the management.

ENVIRONMENTAL MANAGEMENT SYSTEM AND MONITORING PLAN

For the effective and consistent functioning of the complex, an Environmental Management System (EMS) would be established at the site. The EMS would include the following:

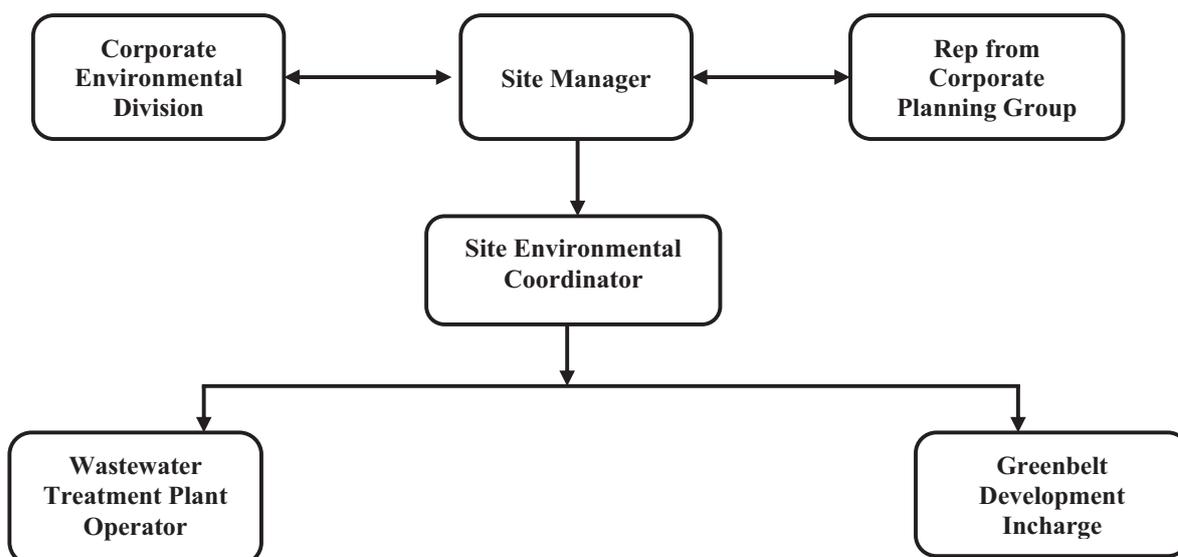
- An Environmental Management Cell
- Environmental Monitoring.
- Personnel Training.
- Regular Environmental audits and Correction measures.
- Documentation – standards operation procedures Environmental Management Plan and other records.

ENVIRONMENTAL MANAGEMENT CELL

Apart from having an Environmental Management Plan, it is also to have a permanent organizational set up charged with the task of ensuring its effective implementation of mitigation measures and to conduct environmental monitoring.

Hierarchical Structure of Environmental Management Cell:

Normal activities of the EMP cell would be supervised by a dedicated person who will report to the site manager/coordinator of the Group Housing. The hierarchical structure of suggested Environmental Management Cell is given in following **Figure-9**.



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Figure7: Environment Management Cell Structure

ENVIRONMENTAL MONITORING

The purpose of environmental monitoring is to evaluate the effectiveness of implementation of Environmental Management Plan (EMP) by periodic monitoring. The important environmental parameters within the impact area are selected so that any adverse effects are detected and time action can be taken. The project proponent will monitor ambient air Quality, Ground Water Quality and Quantity, and Soil Quality in accordance with an approved monitoring schedule.

Table- 10: Suggested Monitoring Program for proposed Group Housing Buildings Project

Monitoring	Frequency of Monitoring
<u>Air & Stack:</u> •Ambient Air Quality at appropriate location for PM ₁₀ , PM _{2.5} , SO ₂ , NO ₂ , HC •Stack emission for point sources PM, SO ₂ , NO ₂ , HC & CO	<ul style="list-style-type: none"> • Six monthly • Six monthly
<u>Water & Wastewater:</u> •Water Quality Monitoring for relevant parameters of IS – 10500 •Wastewater Quality (Treated & Untreated) for pH , TSS, Oil & Grease, •Wastewater quality pH, TSS, oil & Grease. BOD, COD, MLSS, TKN & Phosphate.	<ul style="list-style-type: none"> • Six Monthly • Daily till stabilization of STP. • Weekly till one month then annually
<u>Noise:</u> - Day & Night level Noise Monitoring	<ul style="list-style-type: none"> • Six Monthly
<u>Soil:</u> •Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity etc.	<ul style="list-style-type: none"> • Six Monthly

Awareness and Training: Training and human resource development is an important link to achieve sustainable operation of the facility and environment management. For successful functioning of the project, relevant EMP would be communicated to:

Staff and Contractors: Staff must be made aware of the importance of waste segregation and disposal, water and energy conservation. The awareness can be provided by periodic Integrated Society meetings. They would be informed of their duties.

Environmental Audits and Corrective Action Plans: To assess whether the implemented EMP is adequate, periodic environmental audits will be conducted by the project proponent's Environmental division. These audits will be followed by Correction Action Plan (CAP) to correct various issues identified during the audits.

VOLUME-II

INTRODUCTION

1.0 PREAMBLE

The purpose of EIA study is to assess the beneficial and adverse impacts of the project on the existing environmental parameters, so that suitable control measures could be taken to reduce the impacts. Thus the EIA report is a summarized presentation of base line information of air, water, soil, noise, flora, fauna, socio-economic study and the prevailing environmental scenario of the project activity and the likely impacts due to project, so as to decide the suitable mitigation measures for implementation to maintain healthy working environment and contain pollution within permissible limits.

1.1 GENERAL INFORMATION ON PROPOSED PROJECT

This project is located in Zone 10, DLF-5, Sector– 54, District Gurugram, Haryana. The project had received License from the Directorate of Town & Country Planning, Haryana with 8 Licenses for 7.574 Acres (License No. 38, 52, 53 of 1996 dated 16/04/1996 which is valid up to 15/04/2024, License No. 129, 131, of 1995 dated 29/12/1995 which is valid up to 28/12/2024 and License No. 02, 04, 06 of 2002 dated 25/10/2002 which is valid up to 24/10/2024). Total Plot area of the project is 30,653.317 m² / 7.574 Acres (which is part of Phase-V Group Housing Scheme of 476.6015 Acres). Thus, EIA study has been done for this project to get Environmental Clearance from SEIAA, Haryana. The project site has been earmarked for the residential land use according to Gurgaon Master Plan 2031.

1.2 ENVIRONMENTAL CLEARANCE PROCESS

As per EIA notification 2006, all building construction and area development projects covering an area of 50 Ha and/or built up area more than 1, 50, 000 sq.mt are designated as 8 (b) projects and are required to obtain prior environmental clearance from respective Environmental Impact Assessment Authority (EIAA). The application for environmental clearance shall comprise submission of Form1, Form 1A, Conceptual Plan, approved Term of Reference (TOR) and Environmental Impact Assessment Report to the authorities.

1.3 TERMS OF REFERENCE (TOR)

An approved Terms of Reference (ToR) has been issued for the proposed project by SEIAA, Haryana Vide Letter No. SEIAA(137)/HR/2022/733, dated 08/04/2022 on the basis of application submitted along with Form-I and supplementary Form - IA. The EIA/EMP report has been prepared considering the point of ToR.

1.4 VALIDITY OF ENVIRONMENTAL CLEARANCE

The period of granted environmental clearance granted is for seven years from the date of issuance as per the latest amended notification vide F.No.22-27/2015-IA-III dated 12/04/2016

1.5 POST ENVIRONMENTAL CLEARANCE MONITORING

The Project management shall submit half-yearly compliance report in respect of the stipulated prior environmental clearance terms and conditions on 1st June and 1st December of each calendar year as per point 10(i) in the notification published in the Gazette of India, Extraordinary, Part-II, and Section 3, Sub-section (ii) by Ministry of Environment, Forest and Climate Change. All such compliance reports submitted by the project management shall be public documents.

1.6 TRANSFERABILITY OF ENVIRONMENTAL CLEARANCE

A prior environmental clearance granted for a specific project or activity to an applicant may be transferred during its validity to another legal person entitled to undertake the project or activity on application by the transfer or the transferee with a written “no objection” by the transferor to and by the regulatory authority concerned, on the same terms and conditions under which the prior environmental clearance was initially granted, and for the same validity period.

1.7 GENERIC STRUCTURE OF ENVIRONMENTAL IMPACT ASSESSMENT

In terms of EIA notification, the generic structure of EIA should be as per the MoEF dated 14th September 2006 (Appendix III). Hence, this EIA Report is structured accordingly. Various chapters of the EIA Report are as follows:

- **Chapter 1- Introduction:** This chapter contains the general information on the project.
- **Chapter 2- Project Description:** This chapter contains detailed description of the proposed project, such as the type of the project, need of the project, project location, land availability, utilities and infrastructure facilities such as roads and other requirement
- **Chapter 3- Description of the Environment:** This chapter covers baseline data in the project area.
- **Chapter 4- Anticipated Environmental Impacts & Mitigation Measures:** Anticipated positive and negative impacts as a result of the construction and operation of the proposed project are covered as a part of this section. The section attempts to forecast the future environmental conditions of the project area that might be expected to occur as a result of the construction and operation of the project.
- **Chapter 5- Analysis of Alternatives (Technology and site):** This chapter includes the options, details of the alternatives of materials that are to be used in building construction and energy conservation methods to be adopted.
- **Chapter 6- Environmental Monitoring Program.** This chapter covers the technical aspects of monitoring the effectiveness of mitigation measures (including measurement methodologies, data analysis, reporting schedules, emergency procedures, detailed budget and procurement schedules)both during the construction and operational phase and also includes details of the post monitoring scheme. This chapter also gives technical aspects of monitoring the effectiveness of mitigation measures.
- **Chapter 7- Additional Studies:** This chapter covers the details of the additional studies required, which are necessary for specific issues applicable to the project.
- **Chapter 8- Project Benefits:** This chapter covers the benefits accruing to the locality, neighborhood. It also brings out details of benefits by way of improvement in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.
- **Chapter 9- Environmental Cost Benefit Analysis:** This chapter covers the environmental cost benefit analysis, if recommended at the scoping stage.
- **Chapter 10- Environmental Management Plan:** This chapter covers comprehensively present the Environment Management Plan (EMP), which includes the administrative and

technical setup, summary matrix of EMP, the cost involved to implement the EMP, both during the construction and operational phase.

- **Chapter 11- Summary & Conclusion:** The overall justification for implementation of the project and explain how the adverse effects have been mitigated.
- **Chapter 12- Disclosure of Consultants engaged:** This chapter includes the name of the consultant engaged with their brief resume and nature of consultancy rendered.

1.8 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

1.8.0 Identification of Project

This project is located in Zone 10, DLF-5, Sector-54, District-Gurugram, Haryana. The GPS Co-ordinates of the project site ranges from 28° 26' 40.694" N & 77° 6' 46.727" E to 28° 26' 49.285" N & 77° 6' 52.873" E which is covered by Survey of India toposheet no. H43X3, H43X2 of 1:50,000 scale.

1.8.1 Project Proponent

The project proponent is M/s DLF Limited. and mainly involved in promoting the real estate developers, promoters, infrastructure developers & financiers. The company is having its office at Gurgaon.

Address:

Mr. Alok Kumar
Authorized Signatory
At DLF Shopping Mall. 3rd Floor.

Arjun Marg, DLF City, Phase-1.

Gurugram-122002 Haryana

1.9 BRIEF DESCRIPTION OF PROJECT

M/s DLF Limited proposes a proposed Group Housing Buildings in zone 10, DLF-5, Sector- 54 District Gurugram, Haryana. The Plot area of the project is. 30,653.317 m² / 7.574 Acres (which

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By M/s DLF Ltd*

Final EIA Report (Chapter-1)

is part of Phase-V Group Housing Scheme of 476.6015 Acres. Details are mentioned in Table-1.1 below:

Table-1.1: Summary of Project

S.No.	Particular	Total Area(Sqm.)
1.	Total Plot Area	30,653.317 (7.574 Acres)
2.	Proposed Ground Coverage	6,369.381
3.	Proposed Residential FAR (Including Community Building)	1,43,937.510
4.	Total FAR (Residential+ Community Building)	1,43,937.510
5.	Mumty Machine Room	1,112.604
6.	Stilt area	2,700.018
7.	Meter Room & Guard Room	18.000
8.	Surface Staircase	38.175
9.	Stairs	3,460.908
10.	Basement	82,110.783
11.	Non FAR (Mumty Machine Room+ Stairs Area & Stilt Area+ Meter Room & Guard Room+Basement+ Surface Staircase)	89,440.488
12.	Built up Area (FAR+Non FAR)	2,33,377.998
13.	Green Area (30% of plot area)	9,195.995

*FAR = Floor Area Ratio

Silent Features

S. No.	Particulates	Total
1	Total Population	4,508
2	Total Water Requirement	391 KLD
3	Total Fresh Water Requirement	255 KLD
4	Total Wastewater Generated	294 KLD
5	Solid Waste Generation. Kg/day	2,069 kg/day
6	Maximum Building Height (meters)	109.350
7	No. of DG Set	5 DG sets of tota capacity 8,250 KVA (3×2000 KVA + 1×1250 KVA+ 1×1000 KVA).
8	Total Power Requirement & Source	5,874 KW (DHBVN)

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At Sector-54, Gurugram, Haryana
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Final EIA Report (Chapter-1)

9	No. of Block	4 nos
10	Main Dwelling Units	520
11	Service personnel units	52
12	No. of Floors	S+ 33
13	No. of Basement	4 nos
14	Parking provided	1,615 ECS

1.10 CENTRE/STATE/LOCAL REGULATIONS & STANDARDS APPLICABLE TO THE PROJECT

In 1972, UN Conference on Human Development at Stockholm influenced the need for a well-developed legal mechanism to conserve resources, protect the environment and ensure the health and well-being of the global population. Over the years, the government of India has framed several policies and promulgated numbers of Acts, Rules and Notification aimed at management and protection of the environment. The environment legislation aimed to ensure the development process meets the overall objective of promoting sustainable development. Following legislation is applicable to the projects:

Table 1.2: Summary of Environmental Legislation, Policy and Guidelines as Applicable On Proposed Project

Legislation	Areas / Activities Covered	Applicability
Water (Prevention and Control of Pollution) Act, 1974 with Rules.	<ul style="list-style-type: none"> Protection of Water Quality Discharge of sewage Obtaining Consent to Establish for establishing and Consent to Operate for activities causing water pollution from SPCB and for the discharge of effluents 	Applicable, involves generation of sewage
Air (Prevention and Control of Pollution) Act, 1981 with Rules.	<ul style="list-style-type: none"> Protection of Air Quality Consent to Establish (NOC) for establishing and Consent to Operate (CTO) for activities causing air 	Applicable, involves emissions of flue gases due to operation of DG sets

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Legislation	Areas / Activities Covered	Applicability
	<p>pollution from SPCB</p> <ul style="list-style-type: none"> Compliance to National Ambient Air Quality Standard 	
Environment (Protection) Act, 1986 with Rules.	<ul style="list-style-type: none"> Overall Environment Protection Compliance to environmental (Air, Water, Noise) Standards issued under EPR 	Applicable.
The Motor Vehicles (Amendment) Act, 2019 with Rules.	<ul style="list-style-type: none"> Lay down restriction for vehicles not having Pollution Under Control Certificate (PUCC) or proper labeling to enter premises 	Applicable
Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000 (as amended)	<ul style="list-style-type: none"> Notifying regulatory authority (in this case, the State Factories Inspectorate) of storage of hazardous substances like HSD Follow guidelines on such storage, maintain updated MSDS, submit annual Safety Report to authority Prepare Onsite Emergency Plan 	Applicable, storage of some quantity (below threshold limit as mentioned in schedule 2 & 3) of HSD for operating Dg sets
Noise Pollution (Regulation and Control) Rules, 2000	<ul style="list-style-type: none"> Compliance with Ambient Noise and emission Standards in accordance to use classification for the area 	Applicable, involves generation of noise due to operation of DG sets & pumps and vehicular movement
EIA Notification, 2006 and amendments	<ul style="list-style-type: none"> Prepare EIA / EMP report Obtain Environmental Clearance from MoEF/SEIAA 	Applicable and covered under Activity 8 (b),

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Legislation	Areas / Activities Covered	Applicability
		Category (B) Built-up area of project is more than 50 ha and less than 150 ha are classified.
Wildlife Protection Act, MoEF 1972, amended 2010	<ul style="list-style-type: none"> Lays down rules and regulations pertaining to Wildlife Sanctuaries, National Parks. Obtain NBWL Clearance if site is within 10 km radius of WLS/NP/ Protected Areas 	Not applicable, no eco-sensitive zone protected area is within 10 km radius from the project boundary.
Corporate Environment Responsibility 2018	<ul style="list-style-type: none"> Each business entity should formulate a CSR policy to guide its strategic planning and provide a roadmap for its CSR initiatives 1% of total project cost shall be allocated for CSR activities. 	Applicable
Construction & Demolition Waste Management Rules, 2016	<ul style="list-style-type: none"> Procedure of collection, segregation of concrete, soil and others Procedure of storage of construction and demolition waste generated 	Applicable
E-Waste (Management) Rules, 2016	<ul style="list-style-type: none"> Procedure of collection, storage and transportation of E-waste. E-waste will be generated from commercial Amenities in Residential Group housing project which will be given to vendors. 	Applicable

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Legislation	Areas / Activities Covered	Applicability
Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.	<ul style="list-style-type: none"> Obtaining Authorization from SPCB for handling and storing of hazardous waste like waste oil and lubricants Following guidelines for handling and storing of such hazardous waste Management (Collection, Handling, Intermediate Storage) of domestic waste from residences 	Applicable, generation of small quantity of used oil from DG sets Applicable, involves generation of municipal solid waste
Plastic Waste Management Rules, 2016	<ul style="list-style-type: none"> Procedure of segregation, collection, storage, transportation, processing and disposal of plastic waste Plastic waste will be generated from households which will be given to vendors. 	Applicable
Haryana Building Bye Laws	<ul style="list-style-type: none"> Obtain permits and sanction for land Development of project in accordance with Land-use and Master plans 	Applicable
State Groundwater Regulation	<ul style="list-style-type: none"> Conform to restriction for drawing of groundwater Arrange for recharge through Rainwater Harvesting Schemes (as applicable) 	Applicable, if ground water is utilized

1.11 LITIGATION

No any litigation and/or any directions or orders passed by any Court of Law/any Statutory Authority is pending against the project.



2.0 GENERAL

M/s **DLF Limited** proposes a proposed **Group Housing Buildings in zone 10, DLF-5, Sector– 54 District Gurugram, Haryana**. The purpose and objective of the report is as follows:

2.0.1 GOALS AND OBJECTIVES OF THE PROPOSED PROJECT

The objective of the project is as follows:

- To serve the state of art facility to live in Gurgaon.
- To provide the good infrastructure and amenities for the good social life.
- Maximize local employment and educational opportunities

2.0.2 SIGNIFICANCE OF THE PROJECT

Increase in population in the country and rapid development in the Cities, specially the metro cities resulting in large number of migration of population for employment opportunity in the Cities. The developments are mostly city centric and hence the influx of people leading to huge gap between demand and supply of three main thing viz. water, energy and habitat. To cater the need of the people with a state of art facility to live in comfort with luxury the proposed project is planned.

2.1 DESCRIPTION OF THE PROJECT SITE

Project description is as follows:

2.1.1 LOCATION & ACCESSIBILITY

Proposed Group housing Buildings is to be developed by **M/s DLF Limited**. This project is located in zone 10, DLF-5, Sector– 54 District Gurugram, Haryana. The project had received License from the Directorate of Town & Country Planning, Haryana with 8 Licenses for 7.574 Acres (License No. 38, 52, 53 of 1996 dated 16/04/1996 which is valid up to 15/04/2024, License No. 129, 131, of 1995 dated 29/12/1995 which is valid up to 28/12/2024 and License No. 02, 04, 06 of 2002 dated 25/10/2002 which is valid up to 24/10/2024). Total Plot area of the

project is 30,653.317 m² / 7.574 Acres (which is part of Phase-V Group Housing Scheme of 476.6015 Acres)

This project is located at Sector-54, District-Gurugram, Haryana. The GPS Co-ordinates of the project site ranges from 28° 26' 40.694" N & 77° 6' 46.727" E to 28° 26' 49.285" N & 77° 6' 52.873" E which is covered by Survey of India toposheet no. H43X3, H43X2 of 1:50,000 scale. The nearest highway is NH-148A which is ~3.5 Km away from the project site towards North direction and NH-48 which is ~5.5 Km away from the project site towards NW direction and nearest railway station is Gurgaon Railway Station at a distance of ~11 Km from project site in NW direction. Nearest airport is Indira Gandhi International Airport at a distance of ~10.3 Km from the project site in North direction. The location and accessibility map of Group Housing buildings is shown in Figure- 2.1,

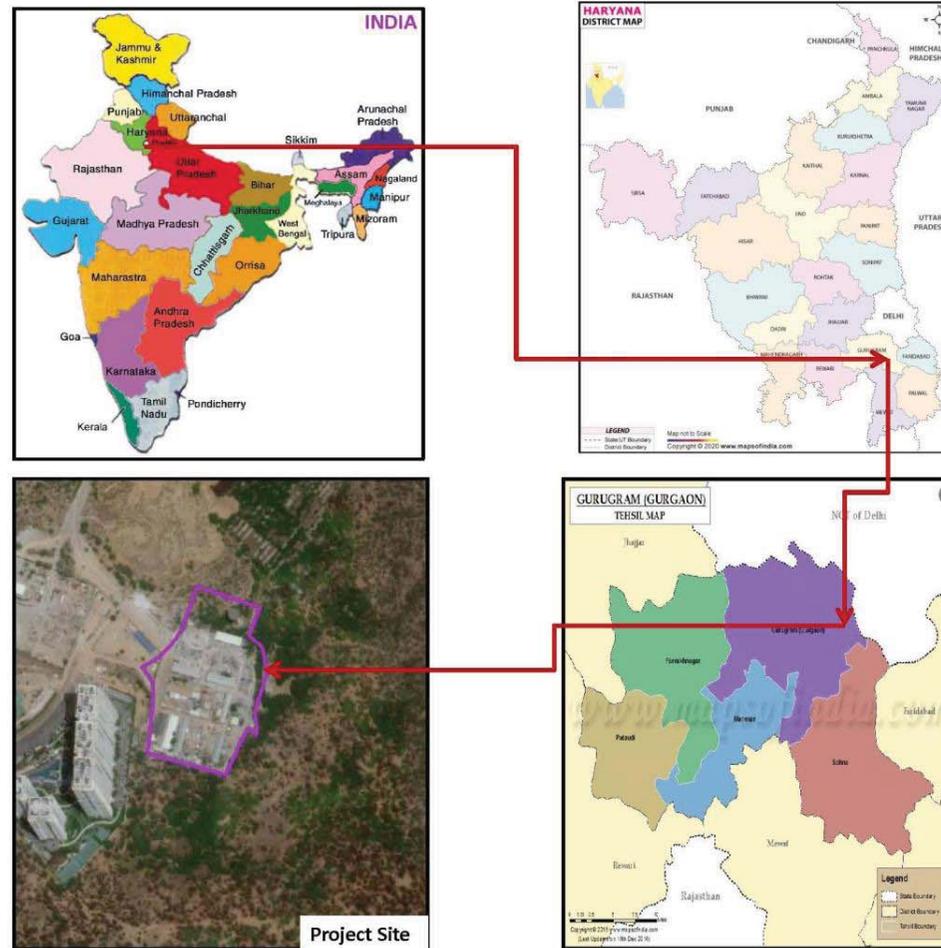


Figure-2.1: Location and Accessibility Map of proposed Project Site

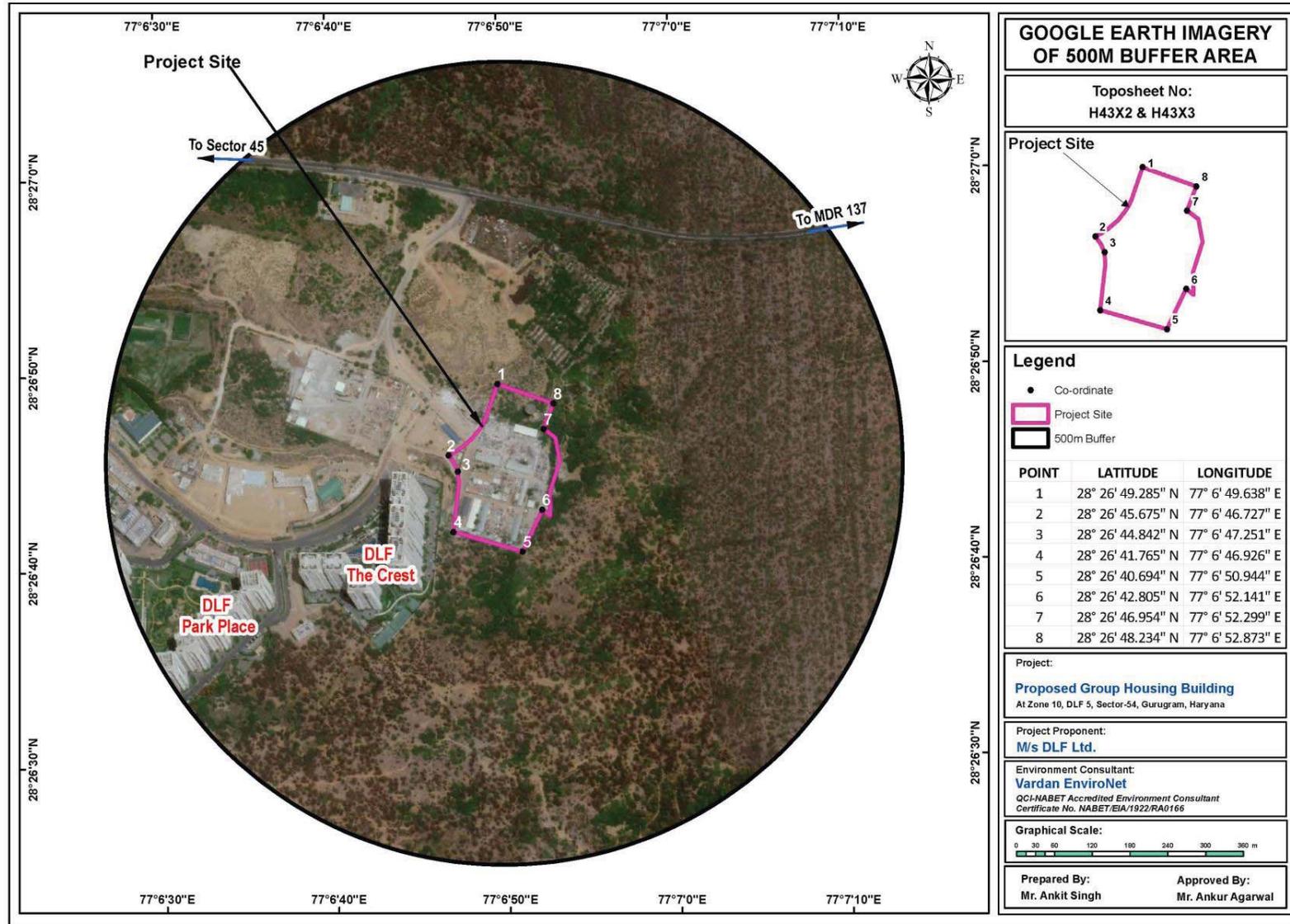


Figure-2.2: Buffer Map of 500 meter radius of Project Site

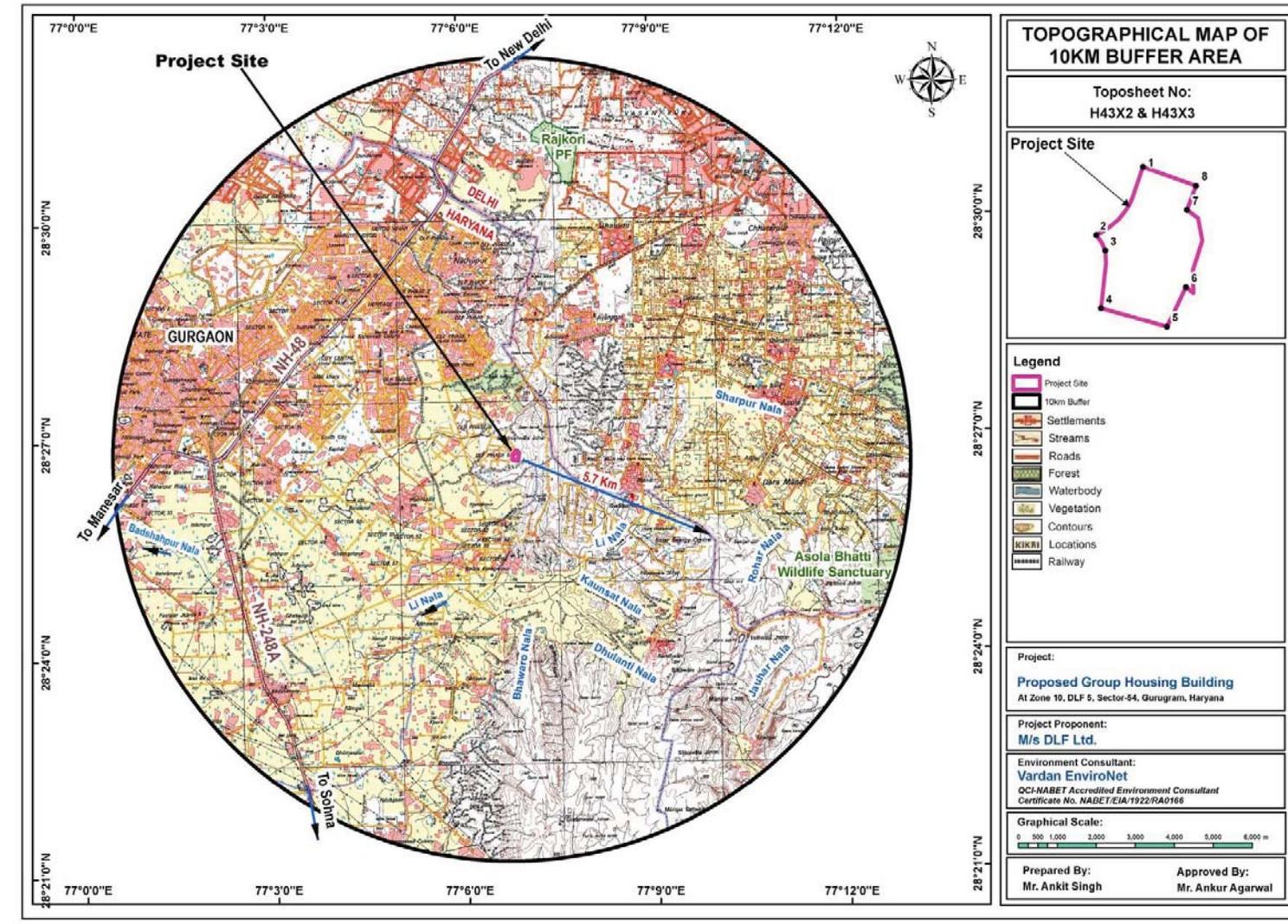


Figure-2.3: Buffer Map of 10 Kilometer radius of Project Site

2.2 AREA DETAIL

This project proposes a proposed Group Housing Buildings in zone 10, DLF-5, Sector– 54 District Gurugram, Haryana. The Plot area of the project is. 30,653.317 m² / 7.574 Acres (which is part of Phase-V Group Housing Scheme of 476.6015 Acres)

Table-2.1: Area Statement

S.No.	Particular	Total Area (Sqm.)
1.	Total Plot Area	30,653.317 (7.574 Acres)
2.	Proposed Ground Coverage	6,369.381
3.	Proposed Residential FAR (Including Community Building)	1,43,937.510
4.	Total FAR (Residential+ Community Building)	1,43,937.510
5.	Mumty Machine Room	1,112.604
6.	Stilt area	2,700.018
7.	Meter Room & Guard Room	18.000
8.	Surface Staircase	38.175
9.	Stairs	3,460.908
10.	Basement	82,110.783
11.	Non FAR (Mumty Machine Room+ Stairs Area & Stilt Area+ Meter Room & Guard Room+Basement+ Surface Staircase)	89,440.488
12.	Built up Area (FAR+Non FAR)	2,33,377.998
13.	Green Area (30% of plot area)	9,195.995

*FAR = Floor Area Ratio

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Silent Features

S. No.	Particulates	Total
1	Total Population	4,508
2	Total Water Requirement	391 KLD
3	Total Fresh Water Requirement	255 KLD
4	Total Wastewater Generated	294 KLD
5	Solid Waste Generation. Kg/day	2,069 kg/day
6	Maximum Building Height (meters)	109.350
7	No. of DG Set	5 DG sets of tota capacity 8,250 KVA (3×2000 KVA + 1×1250 KVA+ 1×1000 KVA).
8	Total Power Requirement & Source	5,874 KW (DHBVN)
9	No. of Block	4 nos
10	Main Dwelling Units	520
11	Service personnel units	52
12	No. of Floors	S+ 33 F
13	No. of Basement	4 nos
14	Parking provided	1,615 ECS

(Source: Conceptual Plan)

2.3 POPULATION DENSITY:

The Total population of the project will be **4,508 Person**. During construction phase, 50-100 numbers of labour will be engaged. The detailed population breakup is given in table 2.2:

Table 2.2: Details of Population Break up

S. No.	Occupancy Type	PPU	Unit or Area (Sq.mt)	Total Population
1	Main Dwelling Units (4-BHK)	@7 Persons	520	3640
2	Service Personnel units	@2 Persons	52	104
3	Community Building	lumpsum	--	300
4	Visitors	@ 10% of total population		364
5	Security & Maintenance staff	lumpsum		100
	Total Population			4508

(Source: Conceptual Plan)

2.4 WATER REQUIREMENT

The water requirement for proposed Group Housing Buildings will be met from nearest DLF Water Tanks. So no ground water will be abstracted. Total water requirement been estimated as **391 KLD**. Total Fresh water requirement of the Group housing buildings will be **255 KLD** and 136 KLD is recycled/treated water .The calculations of daily water requirement for project are given below in **Table 2.3**

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Table 2.3: Calculation for Daily Water Demand (summer season)

S.No	Unit Type	Population	Rate of water Demand	Water Requirement (KLD)			Waste water Generated
				Domestic	Flushing	Total	Total
1	Main Dwelling Units	3640	86	236.60	76.44	313.04	265.72
2	Service Personnel units	104	86	6.76	2.18	8.94	7.59
3	Community Building	300	45	7.50	6.00	13.50	12.00
4	Visitors	364	15	1.82	3.64	5.46	5.10
5	Security & Maintenance staff	100	45	2.50	2.00	4.50	4.00
6	Horticulture (Area 9195.995sqm)		5L/Sq.m			45.98	
	Total	4508		255.18	90.26	391.42	294.41
				Say 255	Say 90	Say 391	Say 294

(Source: Conceptual Plan)

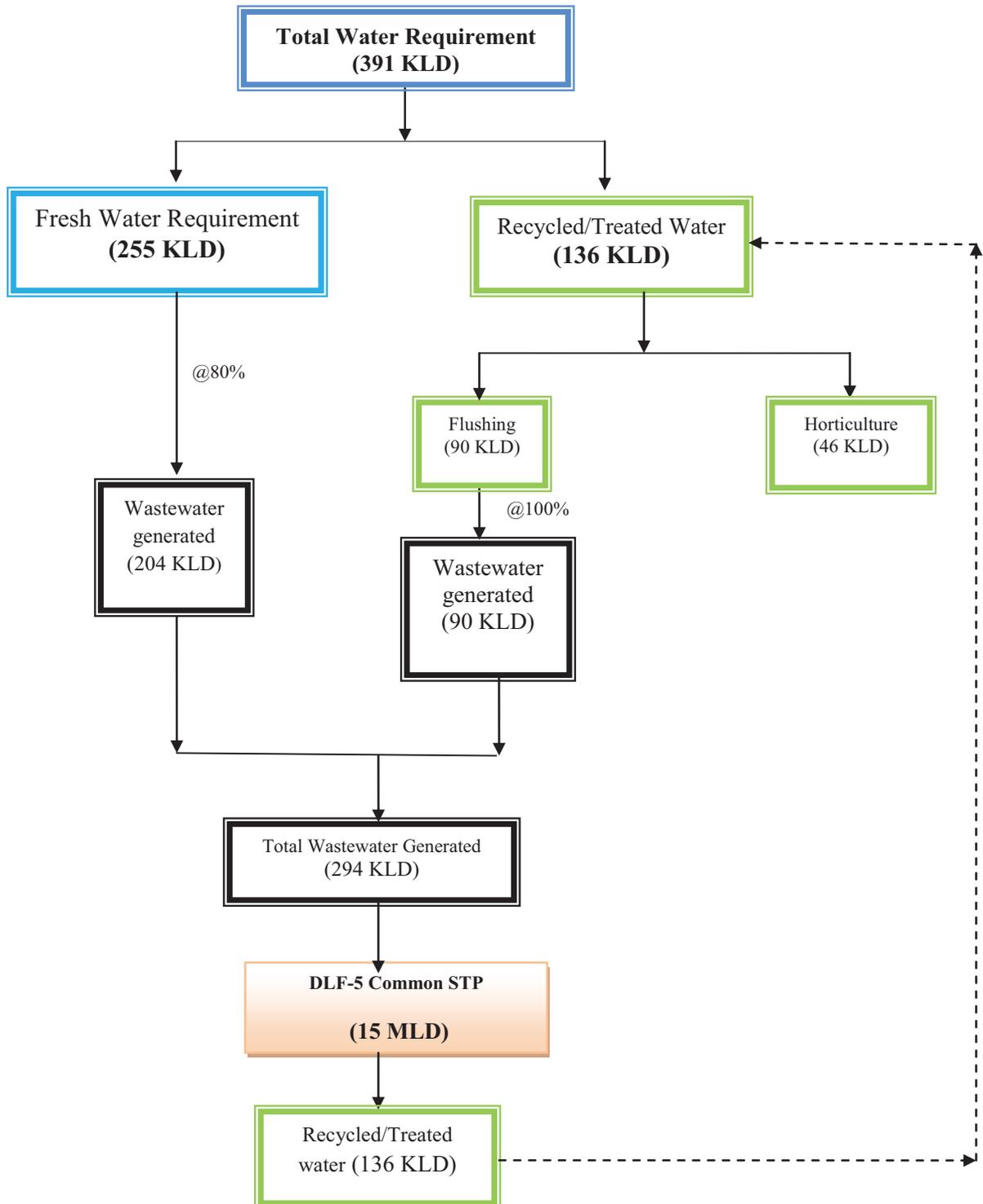


Figure 2.4: Water Balance Diagram (Summer Season)

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Table 2.4: Calculations for Daily Water Demand (Winter Season)

S.No	Unit Type	Population	Rate of water Demand	Water Requirement (KLD)			Waste water Generated
				Domestic	Flushing	Total	Total
1	Main Dwelling Units	3640	86	236.60	76.44	313.04	265.72
2	Service Personnel units	104	86	6.76	2.18	8.94	7.59
3	Community Building	300	45	7.50	6.00	13.50	12.00
4	Visitors	364	15	1.82	3.64	5.46	5.10
5	Security & Maintenance staff	100	45	2.50	2.00	4.50	4.00
6	Horticulture (Area 9195.995sqm)		3L/Sq.m			27.59	
	Total			255.18	90.26	373.03	294.41
				Say 255	Say 90	Say 373	Say 294

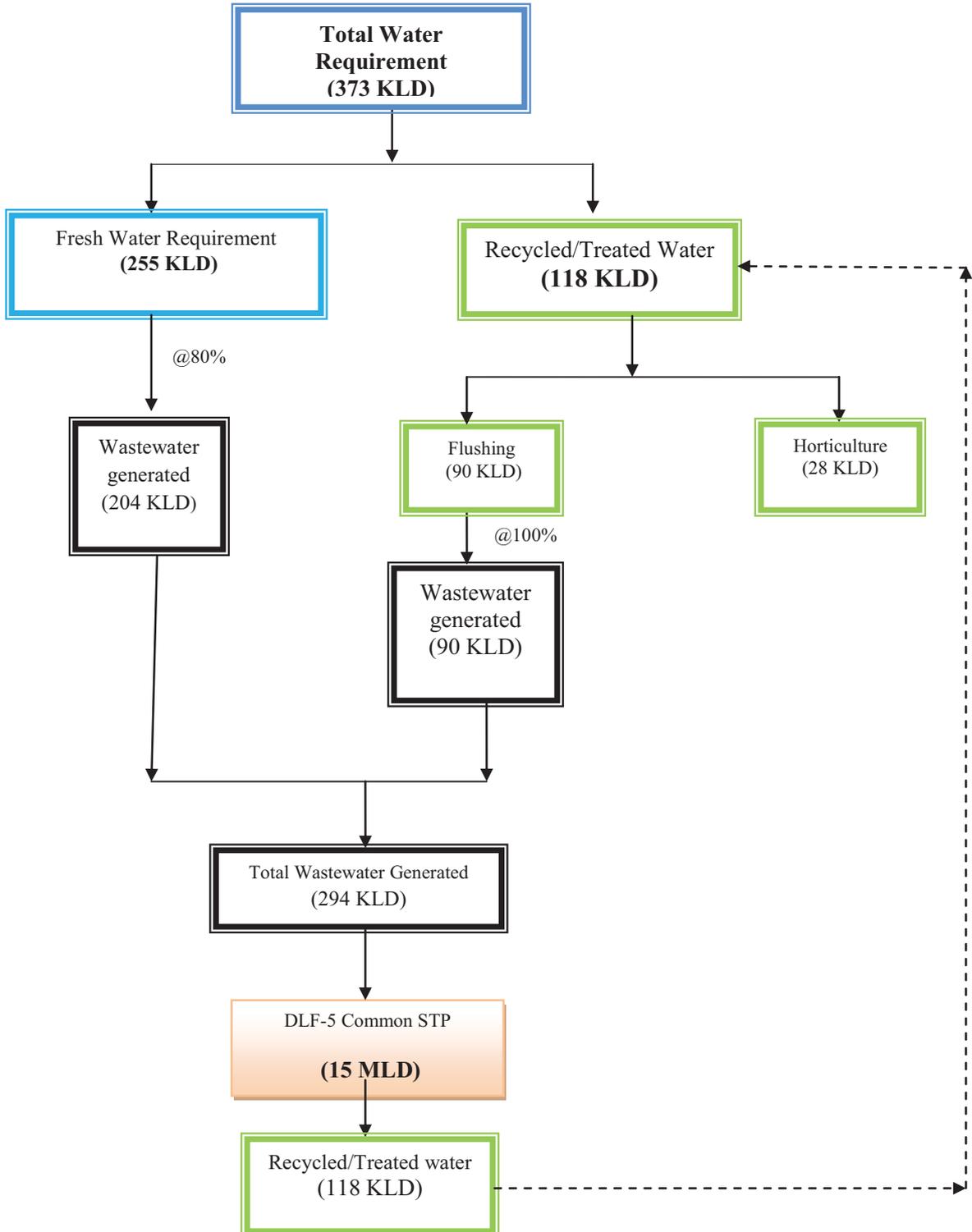


Figure 2.5: Water Balance Diagram during Winter Season

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Table 2.5: Calculations for Daily Water Demand during Monsoon Season

S.No	Unit Type	Population	Rate of water Demand	Water Requirement (KLD)			Waste water Generated
				Domestic	Flushing	Total	Total
1	Main Dwelling Units	3640	86	236.60	76.44	313.04	265.72
2	Service Personnel units	104	86	6.76	2.18	8.94	7.59
3	Community Building	300	45	7.50	6.00	13.50	12.00
4	Visitors	364	15	1.82	3.64	5.46	5.10
5	Security & Maintenance staff	100	45	2.50	2.00	4.50	4.00
6	Horticulture (Area 9195.995sqm)		1L/Sq.m			9.55	
	Total			255.18	90.26	354.64	294.41
				Say 255	Say 90	Say 355	Say 294

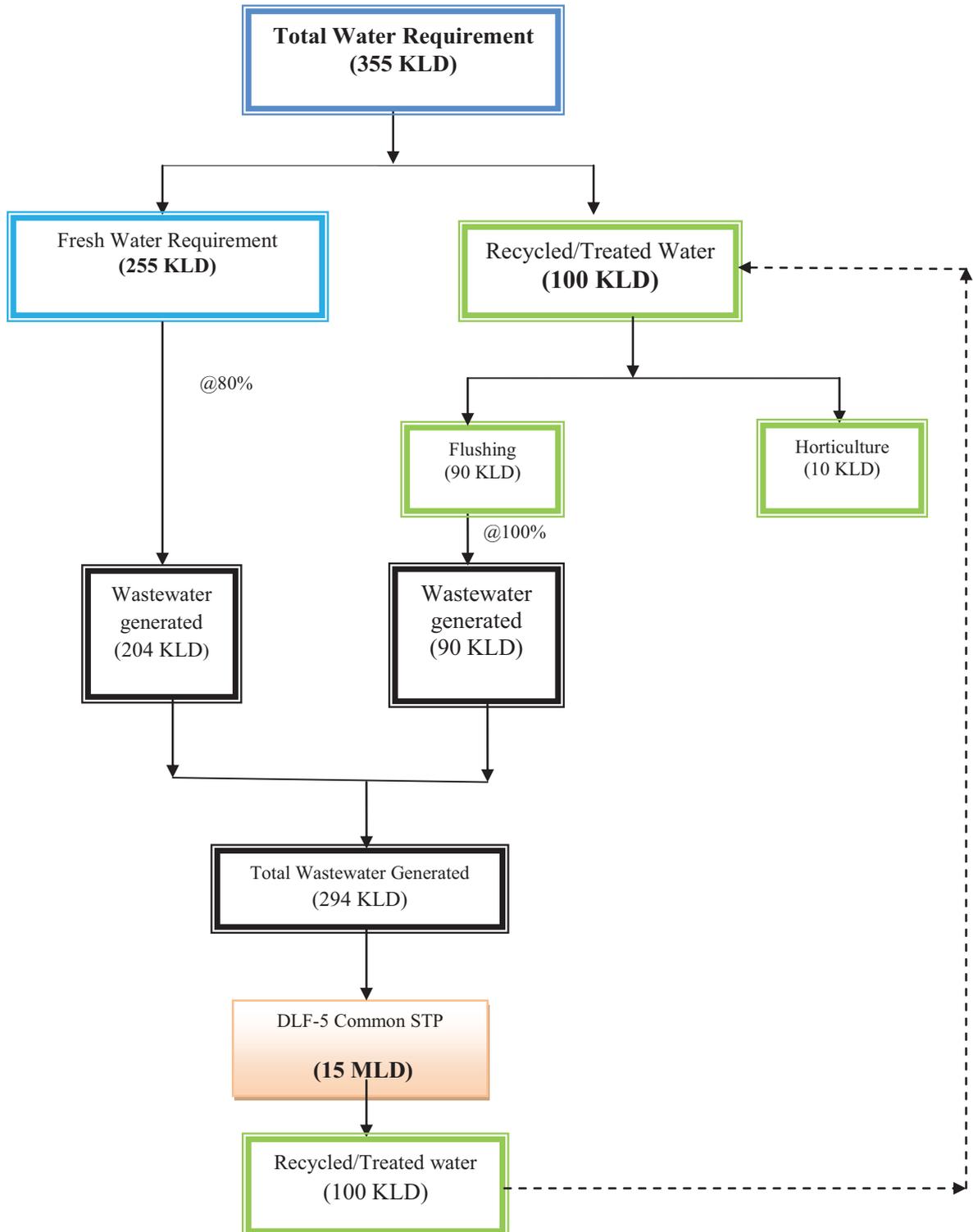


Figure 2.6: Water Balance Diagram during Monsoon Season

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Table- 2.6: Wastewater Generation Calculation

Details	Water (KLD)
Water requirement for domestic purpose	255 KLD
Wastewater generated from domestic use (@ 80% of domestic water requirement)	204 KLD
Water requirement for Flushing Purpose	90 KLD
Wastewater generated from Flushing (@ 100% of flushing requirement)	90 KLD
Total wastewater generated	294 KLD
Use of Recycled Water (136 KLD will be reused for flushing and horticulture)	1. Flushing :90 KLD 2. Horticulture :46 KLD

(Source: Conceptual Plan)

2.5 POWER REQUIREMENT

The power shall be supplied by Dakshin Haryana Bijli Vitran Nigam (DHBVN). The connected load for the group housing project will be approx. 5,874 KW.

Details of D.G Sets:

Total 05 Nos. of DG sets of total capacity of 8,250KVA (3×2000 KVA + 1×1250 KVA+ 1×1000 KVA) will be operated during power failure. The DG sets will be air cooled and equipped with acoustic enclosure to minimize noise generation and adequate stack height for proper dispersion.

2.6 PARKING REQUIREMENT

Adequate provision will be made for car/vehicle parking at the proposed project site. There shall also be adequate parking provisions for visitors so as not to disturb the traffic and allow smooth movement at the site.

Required Car Parking for Main Units = 1.5 ECS/Unit =520 x 1.5=780 ECS

Proposed Car Parking For Main Units = 1,615 ECS

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Proposed Car Parking	
Surface	52
Basement-1	389
Basement-2	392
Basement-3	391
Basement-4	391
Total	1,615

2.6 TYPE OF BUILDING MATERIAL

List of building materials will use at site:

- | | |
|---------------------------------------|---|
| 1. Course sand | 2. Fine sand |
| 3. Stone aggregate | 4. Stone for masonry work |
| 5. Cement | 6. Reinforcement steel |
| 7. Pipe scaffolding (cup lock system) | 8. Bricks |
| 9. CLC fly ash blocks | 10. Crazy (white marble) in grey cement |
| 11. P.V.C. conduit | 12. MDS, MCBs |
| 13. PVC overhead water tanks | 14. 2 1/2" thick red color paver tiles |
| 15. PPR (ISI marked) | 16. PVC waste water lines |
| 17. S.W. sewer line up to main sewer | 18. PVC rain water down take |
| 19. Stainless steel sink in kitchen | 20. Joinery hardware- ISI marked |

2.7 MATERIALS USED FOR CONSTRUCTION WITH THEIR U & R VALUES

S. No	Building Material Proposed with U & R Values	'R' Values (in Sq m. Deg C/ Watts)	'U' Values (in Watts/ Sq m. Deg C)
1.	WALL Brick wall (230 mm thick), both side thick sand cement plaster (12-18mm) with insulation	1.284	0.688
2.	ROOF 200 mm RCC slab with mud phuska & clay tiles with 75 mm insulation	1.038	0.81

Source: Energy Conservation Building Code; 2007

2.8 PHYSIOGRAPHY

Gurgaon district is situated on South eastern part of Haryana state has an area of 1258 km². In the North, it is bordered by the Union Territory of Delhi, in the east by Faridabad, in the North West by Jhajjar and Rewari districts of Haryana and in the west by the Alwar district of Rajasthan state and south by the Mewat district of Haryana state. Administratively, the district is divided in to four Blocks, namely, Gurgaon, Pataudi, Farrukhanagar, Sohna, and one sub – divisions, Gurgaon, Gurgaon town is the headquarter of the district.

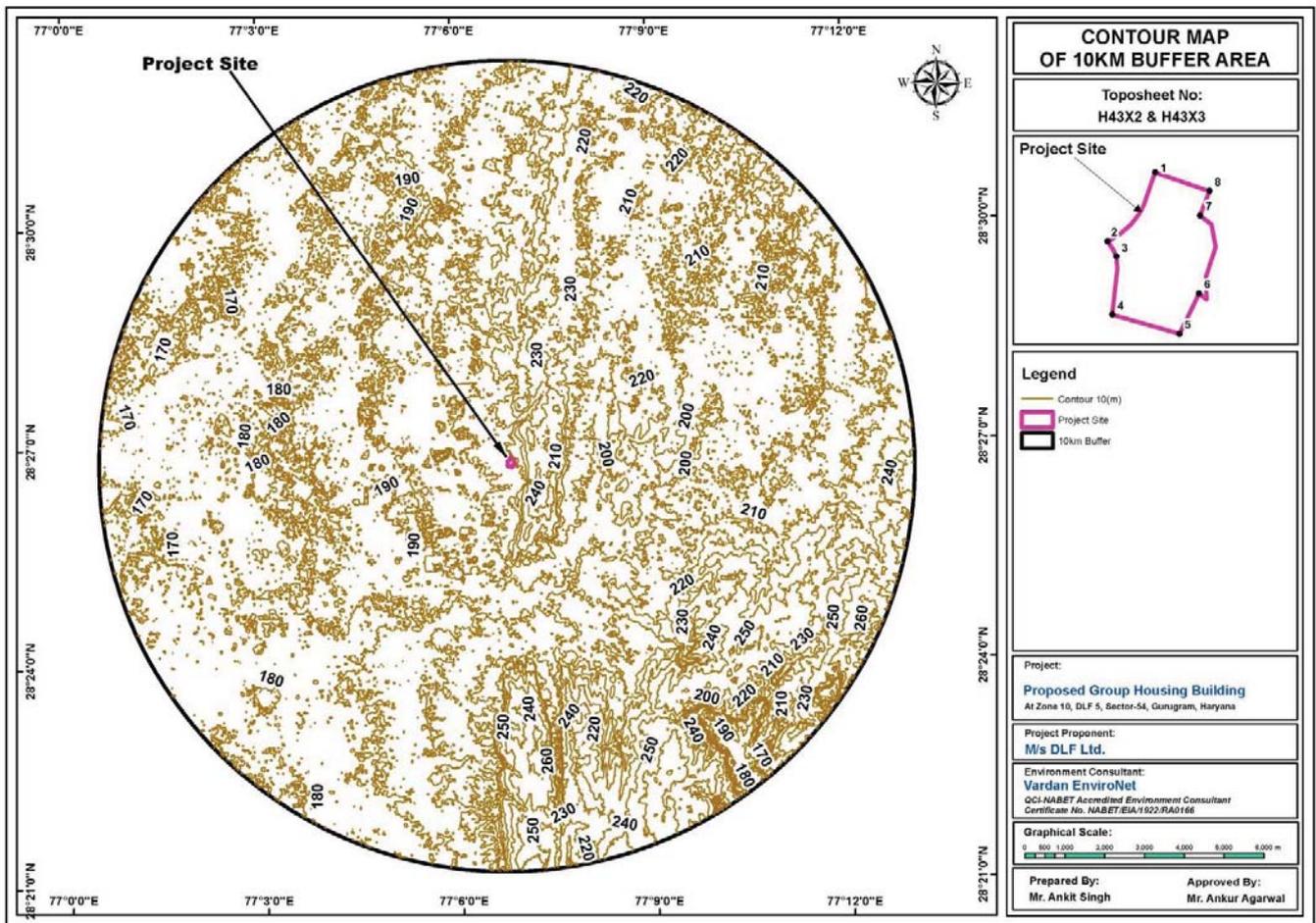


Figure 2.7- Contour map of project site

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2.10 DRAINAGE PATTERN

The drainage of the district is typical of the arid and semi-arid areas. It comprises of large depressions and streams. The drainage is peculiarly complex owing to most of the streams tending to converge towards inland depressions instead of flowing into Yamuna. The important depressions in the level of the district in this region are Khalipur, Chandaini, Sangel-Ujina, Kotla, Dahar, Jheels and Najafgarh lake. Sahibi and Indrani are two important seasonal streams of the district. shows drainage pattern of district Gurgaon, Haryana.

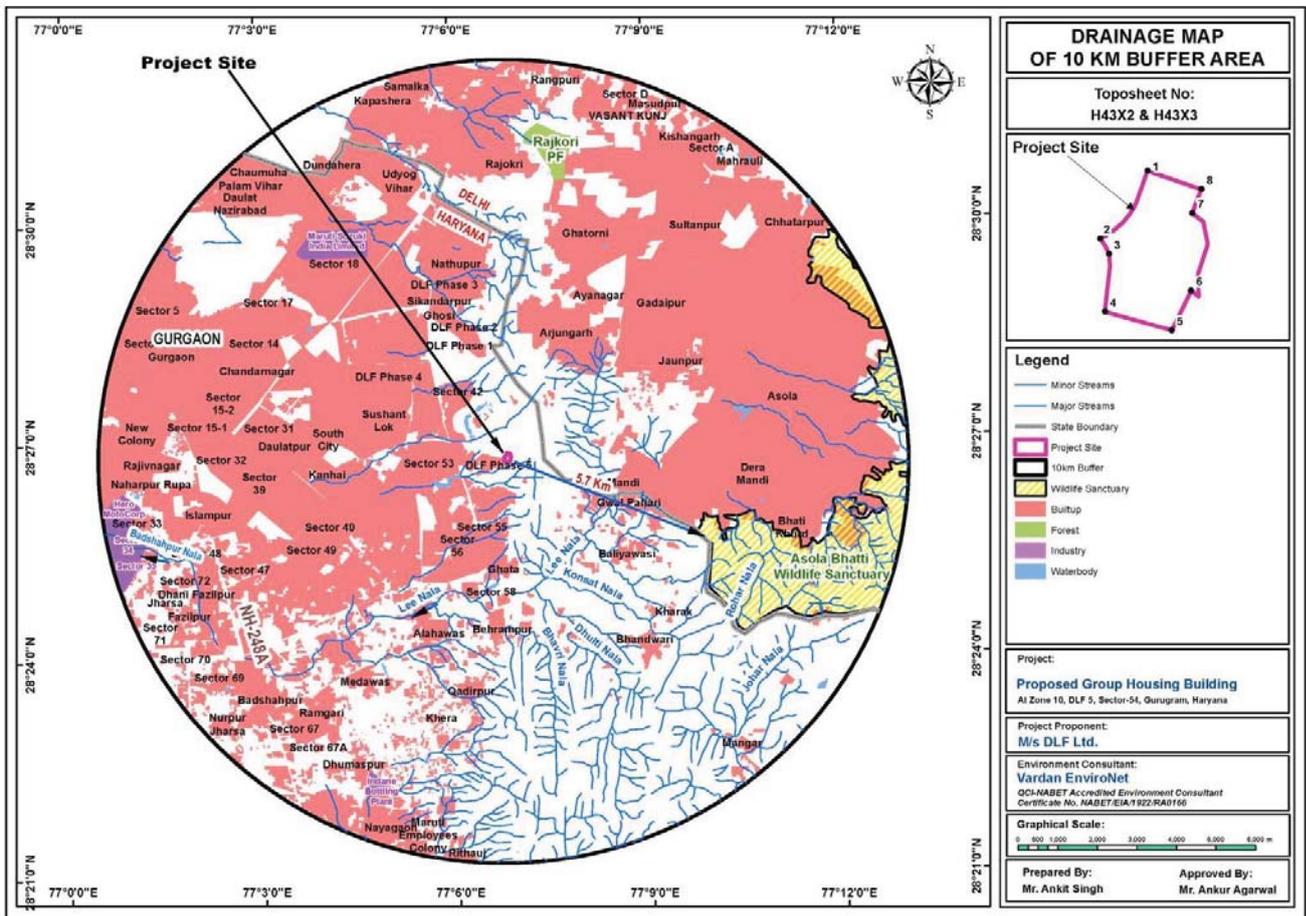
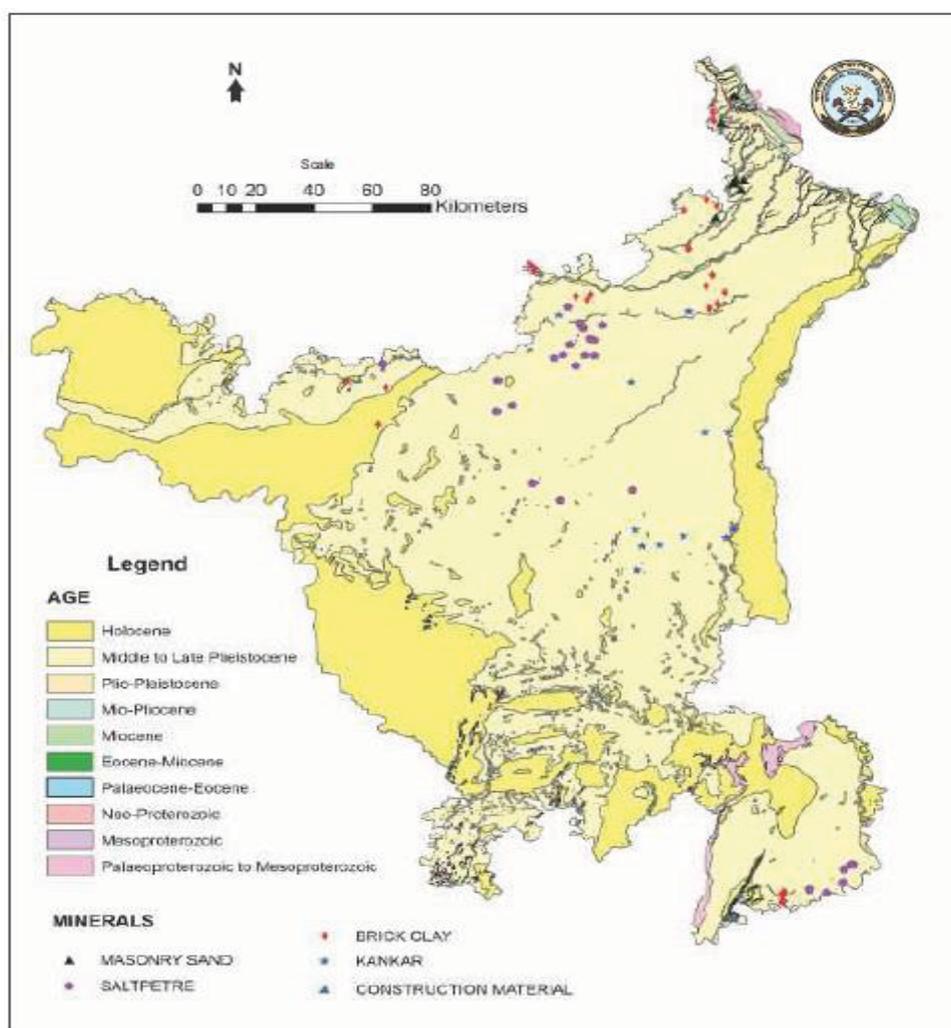


Figure 2.8- Drainage Pattern Diagram of Gurgaon

2.11 GEOLOGY

The area is conspicuously flat topography; however, in the north-eastern part small isolated hillocks of Precambrian rocks are exposed. The alluvial plain is formed by the Sahibi River which is tributary of River Yamuna. Soils of the Gurgaon district are classified as tropical and brown soils, existing in the north western extreme, northern and north eastern parts of the district and water logged and salt affected soils in the southern parts of the district. The soils are medium textured loamy sand is the average texture in Gurgaon and Sohna blocks. In Pataudi and Sohna blocks the organic content of soils is lowest, just up to 0.20 per cent (very low category). In the rest of the district, organic contents are 0.2 to 0.40 percent and falls in low category.



(Source: Geological Survey of India)

Figure 2.9: Geological and Mineral Map of Haryana

2.12 CLIMATE

Under the Köppen climate classification, Gurgaon experiences a monsoon-influenced humid subtropical climate. The city experiences four distinct seasons - spring (February - March), summer (April - August), fall/autumn (September - October) and winter (November - January), along with the monsoon season setting in towards the latter half of the summer. Summers, from early April to mid-October, are typically hot and humid, with an average daily June high temperature of 40°C (104°F). The season experiences heat indices easily breaking 43°C (109°F). Winters are cold and foggy with few sunny days, and with a December daytime average of 3°C (37°F). The Western Disturbance brings some rain in winters that further add to the chill. Spring and autumn are mild and pleasant seasons with low humidity. The monsoon season usually starts in the first week of July and continues till August. Thunderstorms are not uncommon during the Monsoon. The average annual rainfall is approximately 714 millimeter (28.1 in).

2.12.1 TEMPERATURE

The city experiences four distinct seasons - spring (February - March), summer (April - August), fall/autumn (September - October) and winter (November - January), along with the monsoon season setting in towards the latter half of the summer. Summers, from early April to mid-October, are typically hot and humid, with an average daily June high temperature of 40 °C (104 °F). The season experiences heat indices easily breaking 43 °C (109 °F). Winters are cold and foggy with few sunny days, and with a December daytime average of 3 °C (37 °F). The Western Disturbance brings some rain in winters that further add to the chill.

The climate of the district can be divided into following distinct seasons:

S. No.	Season	Time Period
1.	Winter Season	November to January
2.	Summer Season	April to August
3.	Monsoon Season	July to Mid-September
4.	Autumn	September to October

Source: India Meteorological Department (IMD)

2.12.2 HUMIDITY

The city experiences four distinct seasons - spring (February - March), summer (April - August), fall/autumn (September - October) and winter (November - January), along with the monsoon season setting in towards the latter half of the summer. Summers, from early April to mid-October, are typically hot and humid, with an average daily June high temperature of 40 °C (104 °F). The Western Disturbance brings some rain in winters that further add to the chill. Spring and autumn are mild and pleasant seasons with low humidity. Humidity varies from 30 to 100%. Relative humidity is high, about 95 per cent during the monsoon. During the rest of the year the atmosphere is generally dry. The driest part of the year is the summer season when during afternoons the relative humidity is lowest, about 4 per cent. Cloudiness.-The skies are generally moderately to heavily clouded and occasionally overcast during the monsoon season and for brief spells of a day or two in association with the passing western disturbances during the cold season. The skies are mainly clear or lightly clouded during the rest of the year. Winds.-Winds are generally light in the district. In the post-monsoon and cold seasons, winds are predominantly from the north-west. In March and April easterly to south-easterly winds also blow on some days. In the period May to September, easterlies and south-easterlies predominate but on many days, north-westerly winds blow in the afternoons.

2.12.3 RAINFALL

The normal annual rainfall in Gurgaon district is about 596 mm spread over 28 days. The south west monsoon sets in the last week of June and withdraws towards the end of September and contributes about 85% of the annual rainfall. July and August are the wettest months. 15% of the annual rainfall occurs during the non-monsoon months in the wake of thunder storms and western disturbances.

Normal Annual Rainfall	596 mm
Normal monsoon Rainfall	508 mm
Temperature	
Mean Maximum (May & June)	40 °C
Mean Minimum (January)	5.1 °C
Normal Rain days	28

2.13 EXISTING INFRASTRUCTURE

Many of the schools, hospitals, banks and temples are already exist at site. Detail of some of them is as follows:

S. No.	Particulars	Distance
Nearest Road		
1.	NH-148A	3.5 Km
2.	NH-48	5.5 Km
Nearest Railway station		
1.	Gurugram Railway Station	11 Km
Nearest Airport		
1	Indira Gandhi International airport	10.3 Km
Hospitals		
1.	Narayan Hospital	4.1 Km
2.	Sanvit Hospital	7.6 Km
Temples		
1.	Shiromani Naam Dev Temple	7.9 Km
2.	Hanuman Temple	7.7 Km
School/ College		
1.	R.B.P School	3.7 Km.
2.	Agarsen School	7.2 Km.



DESCRIPTION OF THE ENVIRONMENT

3.7.1.1 3.1 GENERAL

The baseline environmental status forms the basis for evaluation of anticipated impacts due proposed development on the existing conditions. This can be broadly grouped into physical, biological, social and economic environment. Physical environment includes air, meteorology, noise, water, soil, land, biological environment includes aquatic and terrestrial flora & fauna while social environment includes demographic details, civic infrastructure, public services, surrounding monuments, commercial facilities, employment levels, sources and levels of income, economic base of the area, land values, land ownership, etc. Baseline conditions at and around the project are described in following sections:

3.1.1 STUDY AREA

This project is located at Sector-54, District-Gurugram and Haryana. The GPS Co-ordinates of the project site ranges from 28° 26' 40.694" N & 77° 6' 46.727" E to 28° 26' 49.285" N & 77° 6' 52.873" E. Study area considered for EIA study is divided into core zone and buffer zone. Project site is considered as core zone and 10 km zone is buffer zone. Baseline monitoring study period is 1st December, 2021 to 28th February, 2022. Baseline study includes collection of primary and secondary data. Primary data on ambient air quality, soil quality, water quality and noise level were collected from site. Secondary data collected from various departments like Indian Meteorological Department (IMD), Central Ground Water Board, Geological Survey of India, State Ground Water Department, State Pollution Control Board, Census of India and Local Forest Department, Non -Governmental Agencies etc.

3.7.1.2 3.2 LAND ENVIRONMENT

LAND USE PATTERN

(A) DATA USED

Indian Remote Sensing satellite IRS-P6, LISS III, multi-spectral digital data has been used for the preparation of land use/ land cover map of present study. Survey of India reference map on 1:50,000 scales have been used for the preparation of base map and geometric correction of satellite data. Ground truth has been carried out to validate the interpretation accuracy and reliability of remotely sensed data, by enabling verification of the interpreted details and by supplementing with the information, which cannot be obtained directly on satellite imagery.

(B) METHODOLOGY

The methodology used for the study consists of following components.

(i) Base Map Preparation

Base map was prepared using Survey of India reference map on 1:50,000 scale. Interpreted thematic details were transferred on the base map. Besides, other supporting data like project reports and statistical data published by various Government departments have also been used.

(ii) Ground Truth Data Collection

Ground data on geo-environmental components of the study area was collected for verification of information about the different features on the study areas, which are responsible for the occurrence of specific spectral reflectance behavioural patterns. During the ground truth detailed information on agricultural practices, wastelands, mining, industrial area etc. were collected along with other land features.

(iii) Interpretation of Remote Sensing Data

A hybrid technique has been used i.e. visual interpretation and digital processing for identification of different land use /land cover classes based on the image characteristics like tone, size, shape, pattern, texture, location and association etc. An image interpretation keys

were developed based on such image characteristics, which enable interpretation of satellite images for land use/land cover features. Further, the land use / land cover and other baseline layers was put in GIS database for integration, analysis, statistics generation and final out in the form of land use land cover map.

(C) RESULTS

In the present study, both digital image processing and using visual interpretation technique were used to generate output of Land use / Land cover map of study area on 1: 50,000 scale.

Land use Pattern around 10 km radius from the project site is depicted as **Table No.3.1 & Figure- 3.1** and False Color Composite (FCC) is depicted as **Figure- 3.2**.

Table-3.1: Land Use Pattern

Land Use/ Land Cover	Area (In Ha)	% Area
Water Body	54	0.16
Industry	298	0.90
Built-up	16,918	51.34
Agriculture land	2,105	6.39
Open Scrub	10,854	32.94
Bare Land	2,625	7.97
Forest	97	0.30
TOTAL	32,951	100.0

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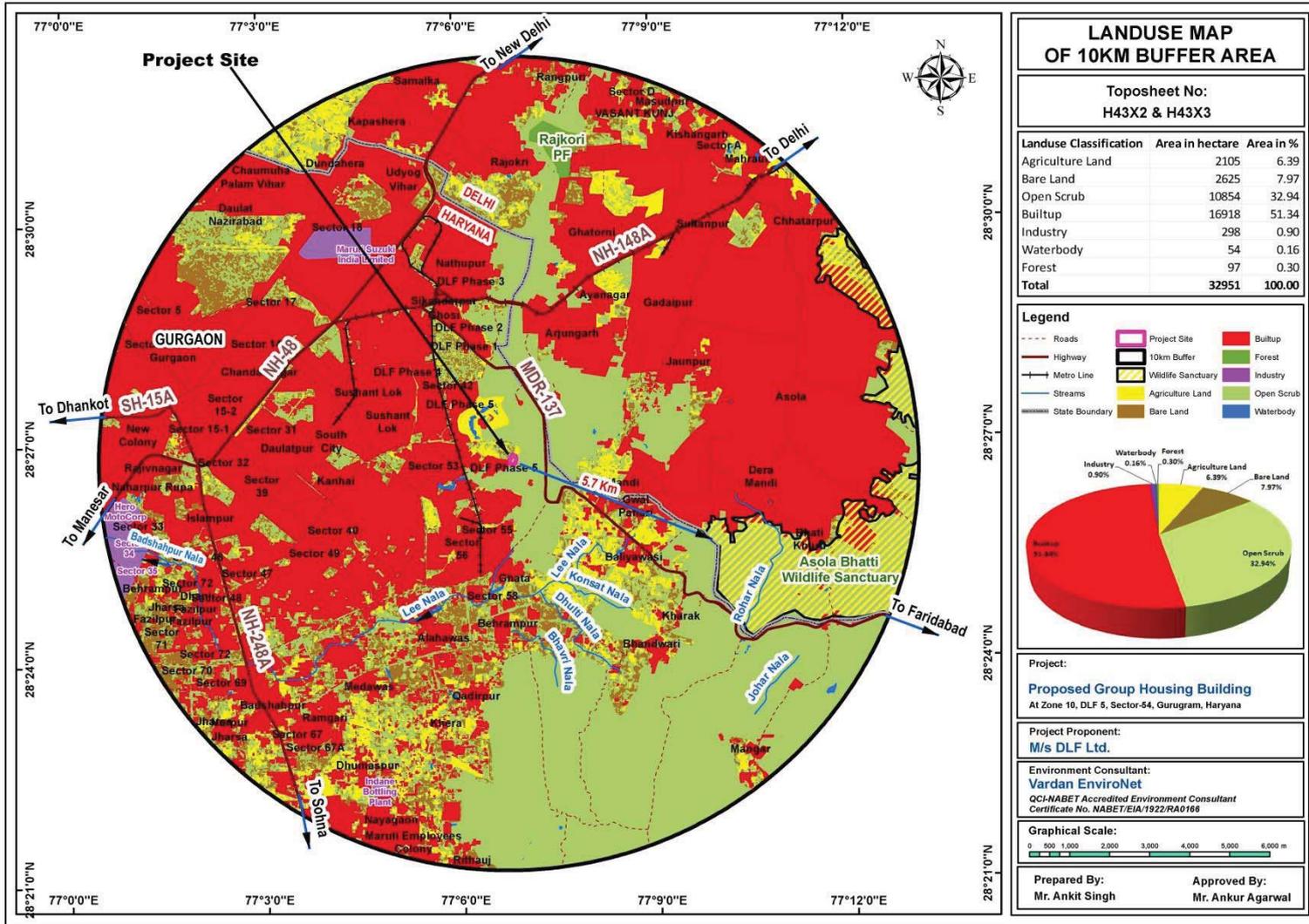


Figure- 3.1: LU/LC map of 10 km study area from Project boundary

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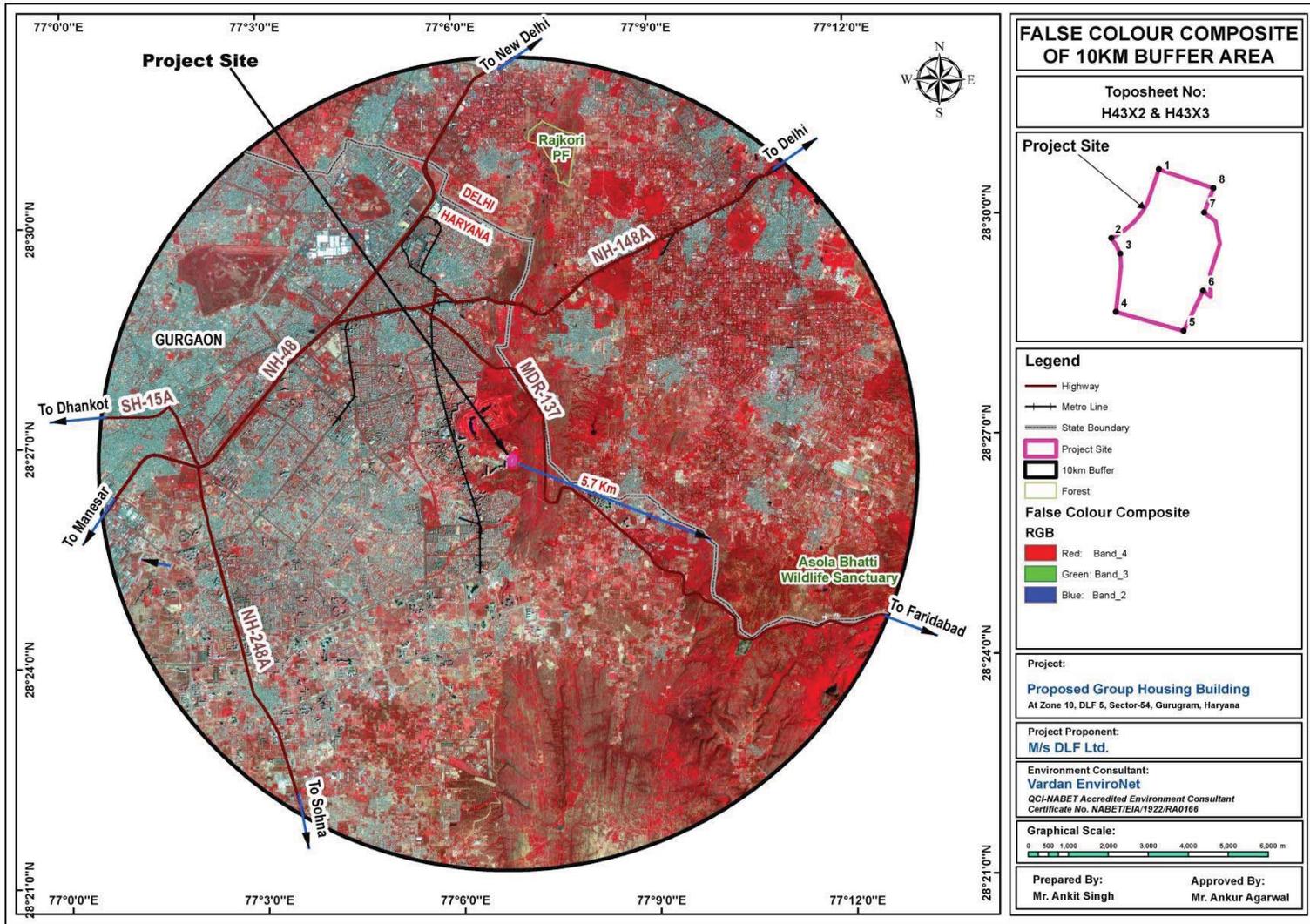


Figure 3.2: False Colour Composite (5.86 resolution) around 10 Km radius of Project

Site

3.3 SOIL ENVIRONMENT

The type of soil is an important factor for the growth of plants and crops in any area. The soil system has various criteria to classify the soils of a region such as geology, humidity, rainfall pattern, soil texture, soil salinity etc. The district are classified as tropical and brown soils, existing in the north western extreme, northern and north eastern parts of the district and water logged and salt affected soils in the southern parts of the district. The soils are medium textured loamy sand is the average texture in Gurgaon and Sohna blocks. In Pataudi and Sohna blocks the organic content of soils is lowest, just up to 0.20 per cent (very low category). In the rest of the district, organic contents are 0.2 to 0.40 percent and falls in low category. Soil quality study has been carried out at the site and in the study area of 10-km radius around the project site during 1st December, 2021 to 28th February, 2022, to understand the physicochemical nature of the soil. Soil found at site and surrounding study area has Sandy Loam texture and is yellowish brown in color. Soil sampling was carried out at 8 selected locations including project site.

The frequency and methodology of soil quality sampling process is given in **Table-3.2**. The soil quality sampling monitoring locations are given in **Table-3.3**. The soil analysis results and discussion is given in **Table-3.4**, and map showing the location of soil monitoring stations is depicted as **Figure-3.3**.

Table-3.2: Frequency and Methodology for Soil Sampling & Monitoring

Particulars	Details
Frequency	One sample from each station— once during the Study Period
Methodology	Soil Sample has been collected as per the CPCB standard and accordingly their analysis has been done.

3.3.1 METHODOLOGY

The soil samples were collected in the month of 1st December, 2021 to 28th February, 2022 from 8 locations as mentioned in **Table- 3.3** and **Figure 3.3**. At each of these locations 8 sub-locations were identified randomly from where soil was collected from 30 cm below the

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surface. The samples were filled in polythene bags, labeled in the field with number and site name and sent to laboratory for analysis.

Table- 3.3: Soil Sampling Locations

CODE	LOCATION	DISTANCE	DIRECTION	LATITUDE	LONGITUDE
S1	Project Site	-	-	28° 26' 44.653" N	77° 6' 49.741" E
S2	Near Village Haiderpur	1.14	SSW	28° 26' 11.903" N	77° 6' 28.736" E
S3	Near Village Wazirabad	2.53	W	28° 26' 35.665" N	77° 5' 19.071" E
S4	Near DLF Phase 5	1.97	NNW	28° 27' 44.666" N	77° 6' 25.493" E
S5	Near Village Behrampur	4.97	SSW	28° 24' 7.618" N	77° 6' 3.080" E
S6	Near Gwalpahari	5.16	SE	28° 25' 27.269" N	77° 9' 38.614" E
S7	Near Village Junapur	5.4	NE	28° 27' 33.843" N	77° 9' 40.856" E
S8	Asola Wildlife Sanctuary	9.41	ENE	28° 27' 33.306" N	77° 12' 32.656" E

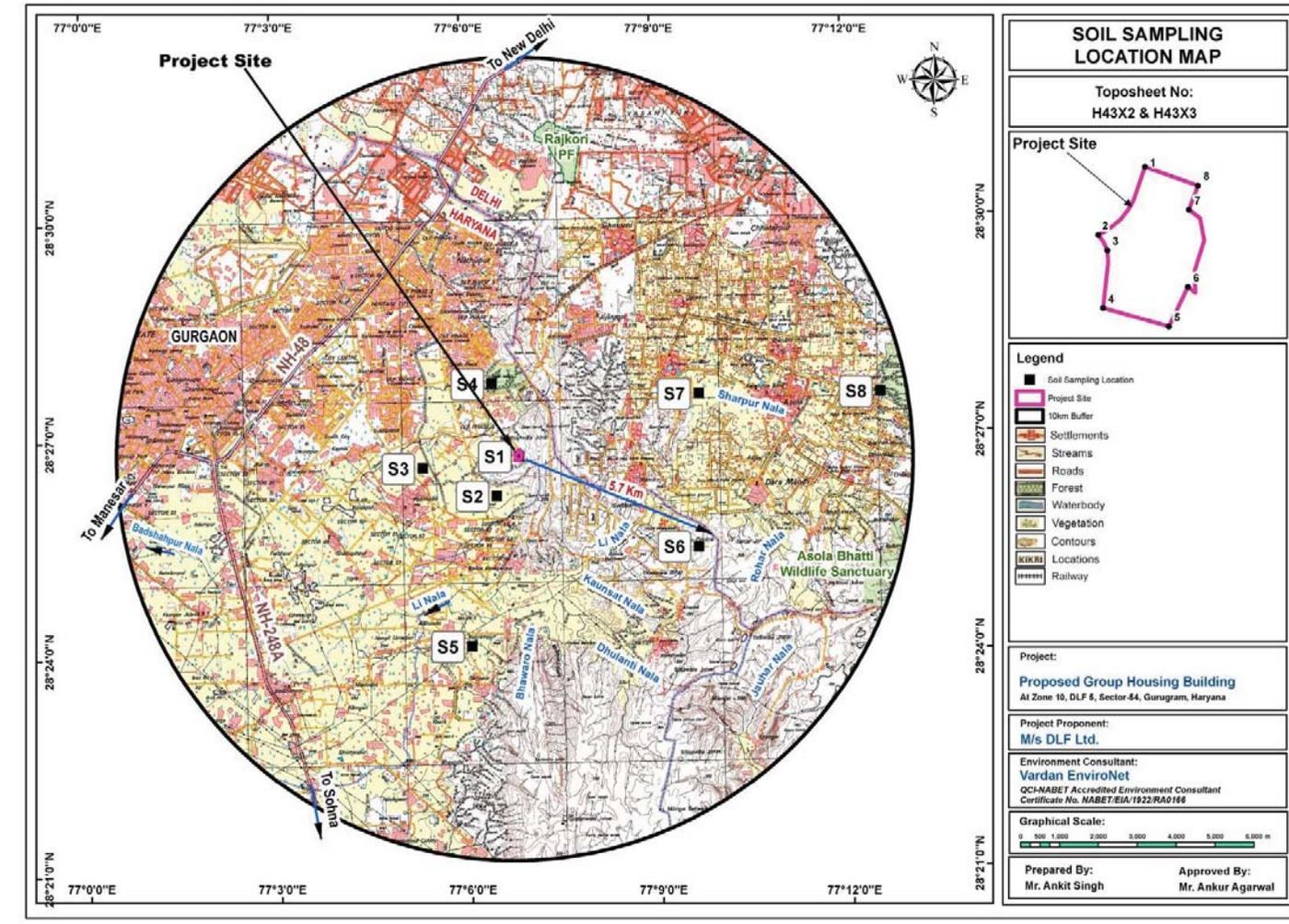


Figure- 3.3: Toposheet map showing Soil Monitoring Location

Table- 3.4 Soil Sample Analysis Results

S. No.	Parameters	Test-Method	Unit	Project Site	Haiderpur	Wazirabad	DLF Phase 5	Behrampur	Gwal Pahari	Junapur	Asola Wildlife Sanctuary
1	pH(at 25°C)	IS : 2720 (P-26,RA2011)	--	7.79	7.52	7.76	7.58	7.81	7.65	7.48	7.49
2	Conductivity	IS:14767-2000 Reaffirmed 2006	mS/cm	0.385	0.273	0.380	0.296	0.242	0.286	0.269	0.212
3	Soil Texture	IS : 2720 (P-4, RA1995)	%	Sand – 54	Sand – 50	Sand – 53	Sand – 51	Sand – 55	Sand – 52	Sand – 47	Sand – 48
				Silt - 30	Silt - 37	Silt - 32	Silt - 36	Silt - 29	Silt - 34	Silt - 39	Silt - 40
				Clay – 16	Clay – 13	Clay – 15	Clay – 13	Clay - 16	Clay – 14	Clay – 14	Clay – 12
4	Color	USDA Method, 1968	--	Yellowish Brown							
5	Water holding capacity	USDA Method, 1968	%	32.53	35.12	31.86	34.75	32.15	34.18	37.15	36.74

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S. No.	Parameters	Test-Method	Unit	Project Site	Haiderpur	Wazirabad	DLF Phase 5	Behrampur	Gwal Pahari	Junapur	Asola Wildlife Sanctuary
6	Bulk density	USDA Method, 1968	gm/cc	1.53	1.48	1.51	1.49	1.55	1.50	1.40	1.45
7	Chloride as Cl	USDA Method, 1968	mg/100 g	35.66	32.42	37.23	33.42	32.66	34.85	28.32	30.62
8	Calcium as Ca	USDA Method, 1968	mg/100 g	32.62	28.52	34.63	29.52	25.62	31.73	24.74	23.86
9	Sodium as Na	USDA Method, 1968	mg/kg	38.21	36.07	41.96	37.07	36.21	37.12	32.42	38.26
10	Potassium as K	USDA Method, 1968	kg/hect.	108.00	155.00	142.00	151.00	121.21	147.00	175.00	152.61
11	Organic Matter	IS:2720 (P-22, RA2009)	%	0.32	0.34	0.32	0.32	0.30	0.33	0.38	0.31
12	Magnesium as Mg	USDA Method, 1968	mg/100 g	10.13	14.15	11.23	13.45	9.13	12.45	15.18	14.74

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S. No.	Parameters	Test-Method	Unit	Project Site	Haiderpur	Wazirabad	DLF Phase 5	Behrampur	Gwal Pahari	Junapur	Asola Wildlife Sanctuary
13	Available Nitrogen as N	IS:14684, RA2006	kg./hec.	136.11	167.00	141.86	163.00	132.86	161.00	188.00	178.00
14	Available Phosphorus	USDA Method, 1968	kg./hec.	10.76	16.12	12.82	15.78	12.53	15.34	18.21	16.64
15	Zinc (as Zn)	USEPA 3050B	mg/kg	0.84	0.96	0.77	0.92	0.69	0.82	1.02	0.81
16	Manganese (as Mn)	USEPA 3050B	mg/kg	8.70	8.66	7.62	8.67	6.86	8.68	9.11	7.86
17	Lead (as Pb)	USEPA 3050B	mg/kg	0.50	0.46	0.49	0.47	0.51	0.48	0.43	0.45
18	Cadmium (as Cd)	USEPA 3050B	mg/kg	0.47	0.43	0.46	0.44	0.48	0.45	0.38	0.41
19	Chromium (as Cr)	USEPA 3050B	mg/kg	0.29	0.25	0.28	0.26	0.30	0.27	0.22	0.23
20	Copper (as Cu)	USEPA 3050B	mg/kg	0.80	0.76	0.68	0.81	0.62	0.78	0.89	0.75

3.3.2 SOIL ANALYSIS RESULTS AND DISCUSSIONS

The soil is in neutral range. The concentration of various physicochemical parameters indicates moderate productivity levels. In the study area, variations in the pH of the soil were found to be 7.42 to 7.81. Conductivity was observed in the range of 0.298 to 0.425 mS/cm. The bulk density of the soils was found in the range of 1.38 to 1.62-gm/cm³. Water Holding Capacity of soil in the study area was observed as 28.41 to 36.21 %. The organic matter of soil varied from 0.26 to 0.43% thereby implying that soils are low in organic matter contents. Available nitrogen content in the surface soils ranges between 164.02 & 216.00 kg/ha thereby indicates that soils are low in available nitrogen content. Available phosphorus content ranged between 12.49 & 22.19 kg/ha thereby indicating that soils are having medium in available phosphorus. Available potassium content in these soils ranges between 128 & 185 kg/ha thereby is indicating that the soils are with medium levels of available potassium content.

3.7.1.3 3.4 AIR ENVIRONMENT

This section documents the baseline scenario of the air environment in the study area and discusses both air resources and quality. Air quality assessment is one of the essential components of EIA study. Such assessment helps in evaluating the existing health of air and suggesting appropriate mitigation measures to minimize the potential impact from development projects. The water quality at site and other locations within a radius of 10 km was monitored during the study period.

Assessment of baseline ambient air quality status in the project area and its surrounding area is the essential aspect of the environment impact assessment studies. The metrological parameters such as temp, rainfall, humidity, wind direction, wind speed etc. control the dispersion and transport of air pollutants during different seasons. The post project air quality status will be predicated based on existing ambient air quality status in the project area. Meteorological data at project site during the study period is also an essential requirement for interpretation of baseline air quality status

3.4.1 CLIMATIC CONDITIONS

Gurgaon has a dry, semi-arid climate. The mean minimum and maximum temperature range from 2 °C to 44 °C during January (winter) and May–June (summer) respectively. The summer temperature can go up to 44 °C from April to July. Winter is from November to February and the temperature can fall to 2 °C in December and January.

Table 3.5: Onsite Meteorological Data

(December, 2021 –February, 2022)

Month	Temperature		Average Humidity %	Average Velocity (Km/hr.)
	Max °C	Min °C		
December, 2021	24	15	30	6.7
January, 2022	12	21	58	5.8
February, 2022	13	25	49	8.8

(1st December 2021 – 28th February 2022)

3.4.2 MICRO-METEOROLOGICAL DATA

3.4.2.1 Temperature

The mean minimum and maximum temperature range from 12 °C to 25 °C during study period. Maximum temperature was found in February and Minimum temperature was found in January.

3.4.2.2 Relative Humidity

The monthly average relative humidity recorded onsite during the said monitoring period varied between (30-49%).

3.4.2.3 Atmospheric Pressure

The overall minimum and maximum atmospheric pressures recorded on-site during the said monitoring period were 1012.9 m bar and 1017.5 m bar respectively. Such values compare well with the past IMD data.

3.4.2.4 Rainfall

The normal annual rainfall in Gurgaon district is about 430.8 mm mm recorded in 32 rainy days in a year. The south west monsoon sets in the last week of June and withdraws towards the end of September and contributes about 85% of the annual rainfall. July and August are the wettest months. 15% of the annual rainfall occurs during the non-monsoon months in the wake of thunder storms and western disturbances. The average rainfall data of last 5 years is given as:

Table 3.6: Average rainfall data of last 5 years

Month/ Year	2016	2017	2018	2019	2020
January	0.0	28.8	1.6	17.5	14.9
February	0.0	0.0	0.0	11.9	1.3
March	16.2	2.4	0.0	7.1	41.8
April	0.5	2.8	4.8	7.7	3.3
May	17.6	15.8	3.4	20.4	19.0
June	38.8	97.3	64.9	4.6	34.0
July	186.8	61.2	118.3	148.2	150.0
August	138.0	33.4	116.0	97.3	292.3
September	35.7	65.0	112.2	34.6	31.3
October	15.4	0.0	0.0	8.8	0.0
November	0.0	0.0	4.3	1.0	0.8
December	0.0	1.3	0.3	19.8	0.0
Total Rainfall	449 mm	308 mm	425.8 mm	378.9 mm	588.7 mm

(Source: [http://hydro.imd.gov.in/hydrometweb/\(S\(h4tm2zru1ke5mg3mvix4zwef\)\)/DistrictRaifall.aspx](http://hydro.imd.gov.in/hydrometweb/(S(h4tm2zru1ke5mg3mvix4zwef))/DistrictRaifall.aspx))

3.4.2.5 Wind Speed and Direction

During the said monitoring period, the monthly mean wind speed measured on-site varied between 5.8 km/hr to 8.8 km/hr for the monitoring period of December 2021 to February 2022 (Table-3.5). The secondary data of IMD station Gurgaon was taken to plot the Wind rose diagram of the study area to justify or select the monitoring station within the study area. The wind rose diagram for this period is shown in the Figure: 3.4. The overall mean wind speed during the period was 2.71 m/s. The most predominant wind direction was from North-West (NW) to SE and followed by North-West (NW) to SSE as per Wind rose.

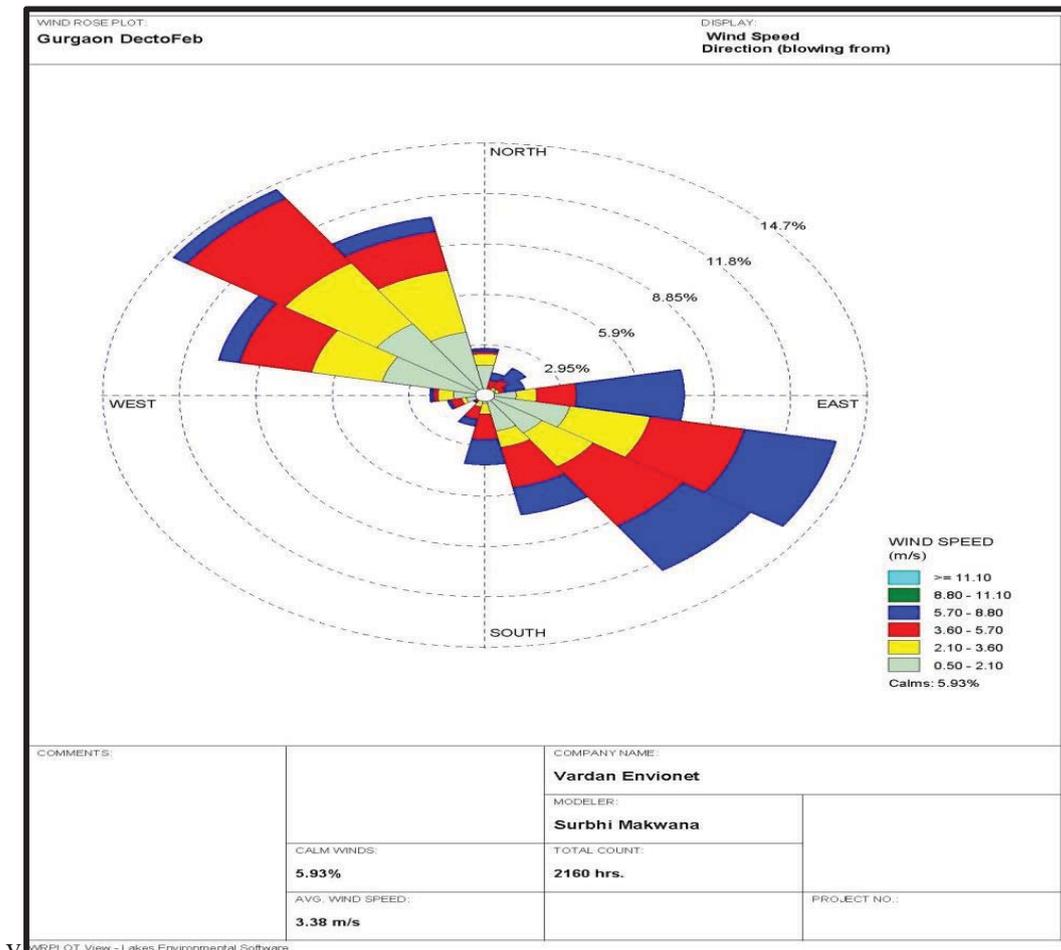


Figure 3.4: Wind Rose Diagram based on data recorded during the Study Period