Environmental and Social Impact Assessment for Hotel Development in Baghdad

Final Report

February 2026

Estithmar Holding QPSC

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1 Introduction

Estithmar Holding QPSC (hereinafter referred to as "Estithmar" or "Client" or "Company"), is currently developing a hotel in Bagdad, Iraq (hereinafter referred to as "Project"). Estithmar has engaged Deloitte & Touche - Qatar Branch ("Deloitte" or "we" or "our") to conduct an Environmental and Social Impact Assessment (ESIA) for the proposed Project.

This ESIA report identifies and assesses any potentially significant adverse environmental and social impacts associated with the proposed Project and determines the measures required to prevent, minimize, mitigate, and compensate adverse impacts in compliance with the Applicable Reference Framework (refer ***Section 1.2***).

1.1 Objective

The primary objective of the ESIA includes the following:

- Review and analyse the environmental and social baseline of the proposed site location and identify significant impacts due to proposed Project activities.
- Identify and map stakeholders involved in the project, including community, through suitable interactions, limited social consultations, survey using internationally acceptable tool/s such as Focused Group Discussion to identify expectations and concerns of project affected community and suggest suitable community development activities (if applicable), as applicable.
- Review the socio-economic status of the project affected community based on data collated through secondary as well as primary information.
- Assist in preparation of an inventory of biodiversity (flora and fauna) affected due to project activities.
- Assist in analysis of alternatives based on options provided by the client for the said project.
- Suggest mitigation measures for client's consideration - during pre-construction, construction, operation phases of the Project.
- Prepare Environmental and Social Management Plan (ESMP) for implementation & monitoring of the mitigation measures.
- Suggest mitigation measures and plans for implementation by providing the requisite avoidance and compensation measures of proposed Project activities, to minimize identified impacts associated with project lifecycle.
- Categorize the Project as per applicable reference framework, based on outcome of the ESIA study.

1.2 Applicable Reference Framework

Applicable reference framework for this assignment includes the following:

- Applicable local, national, and governorate level (E&S) laws, regulations, and standards
- IFC Performance Standards Framework, 2012
- IFC/WB Group General EHS Guidelines, April 2007
- IFC Environmental, Health, and Safety Guidelines for Tourism and Hospitality Development, April 2007

1.3 Scope of Work

The scope of work for the ESIA study of the Project includes the following:

- Site Appraisal Survey: Conduct a reconnaissance site survey of the proposed Project location to understand site settings, environmental and social condition and identify potential project specific impacts.
- Defining the study area/ Project description: Providing a project description focusing on understanding the environmental and social setting and sensitivities for the proposed hotel project. This would also include any related facilities that may be required (e.g., access roads, water supply arrangements, labour housing, etc.).
- Review of Project Information: Review all relevant Project documents and assess construction and operational activities, including project schedule, to identify potential environmental and social impacts and the project activities that may cause them.
- Review alignment with reference standards: Review the Social & Environmental compliance requirement with respect to the Applicable Reference Framework.
- Analysis of Baseline: Review environmental and social data collected from relevant agencies, authorities, and published secondary sources to establish the baseline conditions of the study area. The Client will support the Deloitte team in coordinating with local agencies for data collection. Land-use mapping includes a desk-based GIS review to identify environmental sensitivities and existing land-use patterns at the proposed project site.
- Stakeholder Consultation and Analysis: Conduct consultation and information-dissemination sessions with relevant stakeholders, government departments, workers and project representatives and with local community in general. The

purpose will be to inform stakeholders about the project objectives and potential impacts at the site. Suggest additional measures around stakeholder engagement and grievance mechanisms for the project.

- Impact Assessment and Mitigation Measures: Based on the Project details and baseline information related to site location, an assessment of impacts on the environmental and social components for the pre-construction, construction and operation phase of the project.
- Assistance in development of ESMP: Formulation of an Environmental and Social Management Plan that identifies economically feasible control measures and procedures and support in the development of key management plans such as the Stakeholder Engagement Plan, Waste Management Plan, and Grievance Redressal Plan for the Client's review and finalization.

1.4 Approach & Methodology

The approach and methodology for the ESIA study been provided in subsequent sections.

1.4.1 Project Kick Off

Deloitte organized a kick-off meeting with the Client to introduce team members and to obtain an overview of the project scope, timelines, and expectations. Following the discussion, Deloitte shared an initial information request list (IRL) aimed at gaining further clarity on the project status and accessing necessary project details. The indicative documents requested included (but were not limited to) project location on Google Earth imagery; project layout and associated infrastructure footprint; land details; status of land transfer, lease deed/sale deed documents for allotted land; contractor details; Detailed Project Report; Geotechnical Investigation Report; project schedule; and resource requirements for both construction and operational phases.

1.4.2 Desk Based Review of the Project Details and Site Settings

Following the kick-off meeting, a desk-based review was conducted using the information shared by the Client. Activities undertaken during this stage included:

- Review of key components of the project, proposed activities, and overall project footprint based on the details provided by client.
- Identification of environmental and social sensitivities within and around the proposed project area, with consideration of receptors that may be affected during the Project lifecycle.
- Determination of information gaps and specify any additional data requirements essential for meeting the scope and objectives of the assignment.
- Review of the baseline environmental and social information using secondary sources available in the public domain as well as documents shared by the client.
- Formulation of a plan for conducting the site reconnaissance visit, including prioritization of key focus areas based on initial desk-based findings.
- Undertook a preliminary stakeholder identification and consultation process to inform subsequent engagement planning.
- Reviewed applicable local regulations and relevant international standards, with the objective of assessing regulatory provisions, land transfer processes, and identifying any gaps in comparison to international best practices. Review of these regulatory standards formed the applicable reference framework and guided the methodology adopted for the ESIA.
- Conducted an external factors assessment to identify any locational or contextual sensitivities that may influence the establishment or operation of the Project.

1.4.3 Initial Screening and Scoping

Secondary data from published reports, government records, satellite imagery, and publicly available databases was reviewed to establish baseline environmental and socio-economic conditions. This analysis supported identification of sensitive receptors and informed the design of field assessments and impact evaluation.

1.4.4 Site Assessment & Consultations

Team comprising of environment, biodiversity and social experts conducted site visits to the project location during *8-12 December 2025* to screen project features, understand the site setting, environmental, ecological and social sensitivities and identify the relevant stakeholders.

1.4.5 Environmental and Social Impact Assessment

The ESIA report has been prepared by Deloitte based on the site assessment, documents made available by the client till ***27th January 2026***, consultation with representatives of clients, its contractors and information available on public domain. The structure of the ESIA has been presented below:

- Project Description: An overview of the project location and its associated facilities, site settings, resource requirements etc. are presented based on the data provided by the Estithmar and information collected as part of the ESIA study.
- Baseline Condition: A detailed baseline condition of the project area presented has been based on secondary data available for the study area
- Stakeholder Consultation and Analysis: Details on profile of the stakeholder groups identified as part of the ESIA (Refer ***Table*** 5-1), their key interests and concerns and the way they may be involved in the project lifecycle have been provided
- Impact Assessment: Based on the project details, outcomes of scoping exercise and baseline information collected, an assessment of impacts on the Environmental, Ecological and Social Components was undertaken which typically include:
    - Predicting and assessing the project's likely positive and negative impacts and assigning significance to each type of impact
    - Identifying mitigation measures and any residual negative impacts that cannot be mitigated
    - Evaluation of risks and impacts associated with the proposed Project

1.4.6 Environment and Social Management Plan (ESMP)

An Environmental and Social Management Plan (ESMP) suggesting economically feasible procedures to minimize any impact on environment and social receptors throughout the project life cycle have been developed and presented as part of the ESIA study. ESMP illustrates the appropriate level of management required to mitigate the impacts/ risk along with the responsibility and timeline.

1.5 Limitations

This report has been developed based on the Project level information provided by Client and professional judgment to certain facts with resultant subjective interpretation. This ESIA report has following limitations:

- The secondary data utilized for the purpose of baseline assessment is limited to that available in the public domain or made available by on-site contractor representative from International Design Consultant Company (IDCC) and Urbacon Trading & Contracting (UCC).
- The assessment is based on the project location shared by the client. Any changes in land area or project description will be considered a scope variation and will require discussion on effort and additional consultancy fee. Any data integrity, accuracy and completeness assessment will be the sole responsibility of Client.
- Ecological survey was conducted during the daylight hours and thus the avifaunal and faunal activities recorded were restricted to diurnal hours only.
- Project is located in High high-security zone, therefore a walkthrough survey around the project site was not possible due to restriction.
- The project is situated in green zone which is under tightened security. Due to site access constraints, certain surveys and consultations could not be conducted.
- The project is in the construction phase and approximately 50 % construction work has been completed. Therefore, pre-construction land use pattern of the project site cannot be evaluated during the Site visit.
- The project report is not intended for any regulatory submission (as part of any permitting process or otherwise).
- This is a non-assurance work with no audit/loan staffing services to be provided and there are no other client-side / other-side parties involved in this engagement.

1.6 Structure of the Report

Chapter 1	Introduction (This Section)
Chapter 2	Project Description
Chapter 3	Applicable Legislative Regulatory & Administrative Regime
Chapter 4	Environment & Social Baseline Conditions
Chapter 5	Stakeholder Identification & Engagement

Chapter 6	Analysis of Alternatives
Chapter 7	Impact Assessment & Mitigation Measures
Chapter 8	Environment & Social Management & Monitoring Plan
Chapter 9	Impact Summary & Conclusion
Appendix 1	Documents Reviewed
Appendix 2	Photolog

2 Project Description

This section provides an overview of proposed project, in terms of location, associated facilities, site settings, resource requirements, land details and status of the project.

2.1 Project Overview

The Baghdad Hotel & Residences Operator is a premium mixed-use hospitality development currently under construction within the Green Zone of Baghdad in Iraq, in proximity to the unknown soldier intersection and opposite the Prime Minister's Guest Palace. The project occupies an approximate footprint of 46,415 sq.m. and is being developed by Estithmar Holding in partnership with the international hotel brand operator. The proposed development is planned as a multi-storey structure with the following configuration: Basement + Ground Floor + Upper Ground Floor + Mezzanine + 24 (B+G+UG+M+24).

The project consists of multiple built components, including approximately 314 hotel rooms and suites, 174 branded apartments, and 9 hotel villas. Moreover, the development aims to establish a landmark luxury hospitality destination within Baghdad, providing enhanced accommodation capacity and supporting the city's broader tourism and economic development objectives. The salient features of the proposed hotel have been presented in ***Table*** 2-1***.***

Table 2-1: Salient features of the project

Sr. No.	Components	Description
General Details		
1	Project Name	Hotel & Residences Operator
2	Location	Green Zone, Baghdad, Iraq
3	Developer / Owner	Estithmar Holding (Iraq subsidiary) in collaboration with Hotel Operator
4	Project Type	Five-star luxury hotel, branded residences, and villas
5	Total Site Area	46,415 SQ.M.
6	Total Covered Area	18,979.52 SQ.M.
7	Total Floor Area	91,947.03 SQ.M.
8	Total Built-up Area	1,30,930.47 SQ.M.
9	Total Commercial Areas	11,769.21 SQ.M.
10	Total Residential Areas	53,846.60 SQ.M.
11	Key Facilities & Amenities	• Indoor & outdoor swimming pools • Wellness & spa centre • Ballroom • Fitness Gym • Kids Club • Multiple restaurants & cafés • Conference halls, banquet facilities • Recreational & landscaped outdoor areas
12	Project and Design Management Consultant	International Design & Consultant Company (IDCC)
13	Main construction contractor	Urbancon Trading and Contracting
14	Design Supervision and Consultant	Dara Engineering Consultants
15	Source of Water	Baghdad Municipality
16	Total Water Requirement during operation phase	628 m^3/day
17	Total Water Requirement for Irrigation (i.e landscaping activity)	195 m^3/day
18	Source of Power	Ministry of Electricity (MoE) • As understood during construction phase, although Project has received permission from MoE, the power requirement continues to be met through

Sr. No.	Components	Description
		diesel generators due to the absence of a reliable grid connection and frequent supply interruptions. • Power during operation phase will be sourced from MoE.
19	Total Power Requirement	• **Construction Phase:** 802,014 kWh • **Operation Phase:** 12.53 MW
20	Details of D.G. sets proposed for power back up	• **Construction phase**: 5 generators at the construction site/batching plant (4 x 650 KVA + 1 x 350 KVA). 3 generators at the camps (3 x 650 KVA). • **Operation Phase**: Total of 8 × 2250 kVA generators plus 1 × 2250 kVA generator as a spare/standby unit
21	Total waste generation (operation phase)	11,168 m^3
22	Proposed quantity of diesel storage (during operation phase)	227620.80 liters
23	Security Area	126.92 SQ.M.
24	Chiller yard	874.55 SQ.M.
25	Generator Room	762.50 SQ.M.
26	LPG storage tank	230.27 SQ.M.
27	Batching Plant Capacity	120 m^3/hr
28	Proposed number of parking	580 (including basement and ground floor)

Source: Estithmar

2.2 Project Location and Site Setting

The project site for Hotel & Residences Operator in Baghdad lies within the central zone of Baghdad specifically inside the fortified administrative area known as the Green Zone, in the Karkh district of the city. The site spanning approximately 46,415 m², is located in a fully urbanized, high-security administrative area characterized by established infrastructure, controlled access, and dense institutional land use. The surrounding setting includes federal ministries, diplomatic missions, public monuments, and major transport corridors, providing strong connectivity and integration with municipal utilities such as water supply, power distribution, sewage networks, and solid-waste management systems.

Hotel Operator benefits from access to key roads leading through and out of the Green Zone, facilitating connectivity with greater Baghdad, including the city's main thoroughfares and routes leading to important facilities, administrative offices, and transport nodes. Directly in front of the project location lies Oman Circle, from which the Qadissiya Expressway originates and continues through the International Zone toward Baghdad International Airport. The project site is approximately 16 km from Baghdad International Airport and is located ~1.6 kms from the Tigris River which traverses the city of Baghdad.

The area north of the project site hosts several key government facilities, including the Embassy of Egypt, the British Council Iraq, the Prime Minister's Guest House, and the General Secretariat Gas Station. Land use in the northern segment is predominantly residential, complemented by government and commercial establishments. To the west, prominent public landmarks such as the Unknown Soldier Monument, the Iraq Military Aviation Museum, and the Grand Festivities Square are located, with the surrounding land use comprising of parks, major road networks, and water bodies. The eastern segment transitions into central Baghdad and is characterized by dense commercial activity and government institutions, along with residential areas, open land, and the adjacent river. The southern segment includes additional government offices, educational institutions, administrative complexes, and mixed urban residential areas, with land use further comprising parks, government buildings, water bodies, and associated infrastructure.

The site location map for the project has been presented in ***Figure*** 2-1**.**

Figure 2-1: Project location Map

Source: Deloitte ArcGIS Mapping

2.3 Project Components

The project comprises of establishing 314 hotel rooms, 174 branded apartments and 9 villas. The details on the accommodation in hotel is provided in ***Table*** 2-2.

Table 2-2: Details of Accommodation

Hotels			Branded Apartments				Villas			Total
Standard Guest Rooms	1-Bedroom Suite	Presidential Suites	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom	4 Bedroom Duplex	5BR Villa	4BR Villa	
264	40	10	45	70	52	4	3	2	7	497

Source: Estithmar

2.3.1 Hotel Building Facilities

The Hotel is designed as a modern, high-end hospitality development located within the secure Green Zone of Baghdad. The hotel is developed at a plot area of 46,415 sq. m and a built-up area of 130,930.47 sq. m distributed into basement, ground floor, lobby floor, a technical floor at 7th floor, 23 upper floors and roof level. Internally, the hotel is functionally zoned to accommodate guest rooms and suites, food and beverage outlets, banquet and conference facilities, wellness and recreational amenities, and back-of-house operational areas. The hotel's functional layout ensures smooth internal circulation and efficient building services. Guest and service movements are clearly separated through dedicated elevators, corridors, and back-of-house routes. The master layout plan shows that essential utilities such as HVAC systems, water supply, firefighting systems, electrical networks, waste management, and energy-efficient features are well integrated to support operations. The design also complies with safety and accessibility standards, including emergency evacuation measures and facilities for people with disabilities. The master plan of the hotel is illustrated in ***Figure 2-2*** and ***Figure 2-3***.

2.3.1.1 Food and Beverages

The Project is proposed to have 2 speciality restaurants, all day dining space, cigar lounge, lobby café and 2 ballrooms. Details of Food and Beverage (F&B) are illustrated in ***Table*** 2-3.

Table 2-3: Details of Food & Beverage

Description	Level Location	Area (Sq. m)	Number of Seats
Specialty Restaurant 1	Ground Floor	831.12	140-150
All Day Dining	Lobby Level	890	200-210
Lobby Café	Lobby Level	727	100-110
Speciality Restaurant 2	Lobby Level	793	160-170
Cigar Lounge	Lobby Level	578	50-60
Ballroom 1	Ground Floor	1072.47	160-190
Ballroom 2	Ground Floor	1172.32	210-240

Source: Estithmar

2.3.1.2 Other Facilities

Other facilities proposed at the hotel includes convention centre, gym, kids club, business centre, salon, barber shop, etc. The floor-wise facilities of Hotel are outlined below:

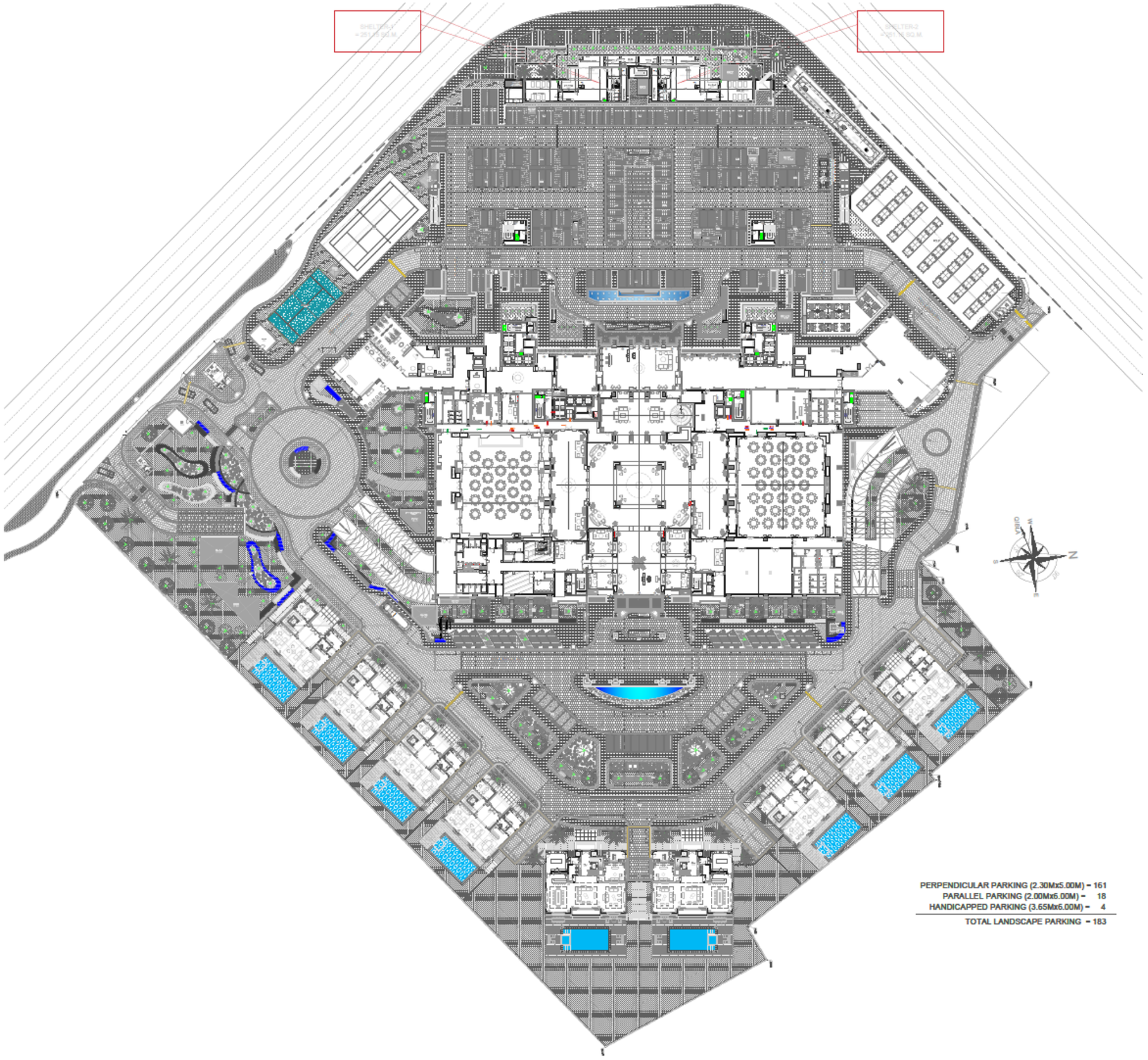
- The basement level is equipped with core operational facilities including the main kitchen, laundry unit, staff service areas, unloading dock, garbage handling area, shelter space, MEP rooms, convention centre, lift lobby, parking spaces with dedicated lifts for efficient circulation.
- Lobby Floor has the main public interaction zone with the central hotel lobby, administration and luggage-handling area, gym, spa, retail units, multiple F&B outlets, Kids Club, main swimming pool with stage, pool shop, and public male/female toilets.
- First Floor primarily accommodates guest rooms and premium services, including three one-bedroom suites, one deluxe suite, thirty standard rooms, an executive lounge, and a fully equipped business centre.

- Ground Floor segment integrates guest services and event facilities such as the female salon, barber shop, juice bar, main reception, prayer rooms, public toilets, two ballrooms, AV rooms, bridal lounge, specialty restaurant, back-of-house pantry areas, and parking spaces along with dedicated lifts.
- Second Floor**:** This level has high-end accommodation featuring two presidential suites, one deluxe suite, four one-bedroom suites, and fifty standard guest rooms.
- Fourth Floor**:** It has mixed luxury and standard accommodation with two presidential suites, four one-bedroom suites, one deluxe suite, and fifty standard guest rooms.
- Fifth & Sixth Floors**:** Each floor includes two presidential suites, five deluxe suites, four one-bedroom suites, and forty-two standard guest rooms, reflecting a combination of premium and standard lodging.
- Eighth Floor: The floor primarily possesses recreational and serviced apartment level with gym, multi-purpose room, male/female changing and shower areas, Kids Club, and serviced units comprising three-bedroom Types A/B/C, two-bedroom Types A-1/B, and one-bedroom Types A/B, along with three terrace areas.
- Ninth & Tenth Floors: The floor includes one 1-Bedroom Type A unit, four 1-Bedroom Type B units, two 2-Bedroom Type A1 units, two 2-Bedroom Type B units, two 3-Bedroom Type A units, one 3-Bedroom Type B unit, and one 3-Bedroom Type C unit.
- Eleventh Floor**:** It comprises of one 1-Bedroom Type A unit, two 1-Bedroom Type B units, one 2-Bedroom Type A unit, two 2-Bedroom Type A1 units, two 2-Bedroom Type B units, two 3-Bedroom Type A units, one 3-Bedroom Type B unit, and one 3-Bedroom Type C unit.
- Twelfth to Fifteenth Floors: Each level constitutes one 1-Bedroom Type A unit, four 1-Bedroom Type B units, two 2-Bedroom Type A1 units, two 2-Bedroom Type B units, two 3-Bedroom Type A units, one 3-Bedroom Type B unit, and one 3-Bedroom Type C unit.
- Sixteenth Floor: Includes one 1-Bedroom Type A unit, two 1-Bedroom Type B units, one 2-Bedroom Type A unit, two 2-Bedroom Type A1 units, two 2-Bedroom Type B units, two 3-Bedroom Type A units, one 3-Bedroom Type B unit, and one 3-Bedroom Type C unit.
- 17th to 18th Floor: Includes one 1-Bedroom Type A unit; two 2-Bedroom Type A units; two 2-Bedroom Type A1 units; two 2-Bedroom Type B units; two 3-Bedroom Type A units; one 3-Bedroom Type B unit; and one 3-Bedroom Type C unit.
- 19th Floor: Comprises one 1-Bedroom Type A unit, two 2-Bedroom Type B units, one 3-Bedroom Type B unit, one 3-Bedroom Type C unit, and two 4-Bedroom Type B units.
- 20th to 22nd Floor: This floor comprises of one 1-Bedroom Type A unit, two 2-Bedroom Type B units, four 2-Bedroom Type C units, one 3-Bedroom Type B unit, and one 3-Bedroom Type C unit.
- 23rd Floor: Includes two 2-Bedroom Type B units, one 3-Bedroom Type C unit, and one 4-Bedroom Type A unit.
- 24th Floor: Comprises one 4-Bedroom Duplex Type A unit, two 4-Bedroom Duplex Type B units, and one 4-Bedroom Type A unit.
- Roof Level: Accommodates one 4-Bedroom Duplex Type A unit and two 4-Bedroom Duplex Type B units.

Figure 2-2: Master Plan of Hotel on Google Earth Imagery

Source: Estithmar

Figure 2-3: Master Layout Plan of Hotel



Source: Estithmar

2.4 Area Statement

As stated, earlier plot area and BUA of the Hotel is 46,415 sq.m and 1,30,930 sq.m respectively. Ground coverage or % of covered area is 41. The detailed area statement of the Project is provided in ***Table*** 2-4.

Table 2-4: Area Statement

Parameters	Area	
Plot Area	46,415.00 SQ.M.	
Covered Area	18,979.22 SQ.M.	
% of Covered Area	41%.	
Floor Area Ratio	1.98	
Total Floor Area	91,947.03 SQ.M.	
Total Built-up Area	130,930.47 SQ.M.	
Balcony Total Area	17,051.65 SQ.M.	
Total Commercial Areas	11,769.21 SQ.M.	
Total Residential Areas	53,846.60 SQ.M.	
% of Commercial Areas	8.99%	
% of Residential Areas	41.13%	
Tower		**Balcony**
Hotel		**Area**
Basement Floor Level	32,777.03 SQ.M.	
Ground Floor Level	9,586.41 SQ.M	0.00 SQ.M.
Lobby Floor Level (UG)	7951.85 SQ.M.	7689.79 SQ.M.
Mezzanine Floor Level	955.54 SQ.M.	0.00 SQ.M.
1st Floor Level	4857.84 SQ.M.	272.30 SQ.M.
2nd Floor Level	4973.20 SQ.M.	324.86 SQ.M.
3rd Floor Level	4890.10 SQ.M.	324.86 SQ.M.
4th Floor Level	4700.25 SQ.M.	1120.01 SQ.M.
5th Floor Level	4655.75 SQ.M.	216.59 SQ.M.
6th Floor Level	4655.75 SQ.M.	216.59 SQ.M.
Hotel Sub total	**80,003.82 SQ.M.**	**10,165.00 SQ.M**
BRANDED RESIDENCES		
7th Floor (Technical Floor)	4532.57 SQ.M.	0.00
8th Floor Level	2,637.72 SQ.M.	2546.82 SQ.M.
9th Floor Level	2,583.08 SQ.M.	133.02 SQ.M.
10th Floor Level	2,583.08 SQ.M.	133.02 SQ.M.
11th Floor Level	2,583.08 SQ.M.	133.02 SQ.M.
12th Floor Level	2,583.08 SQ.M.	133.02 SQ.M.
13th Floor Level	2,583.08 SQ.M.	133.02 SQ.M.
14th Floor Level	2,583.08 SQ.M.	133.02 SQ.M.
15th Floor Level	2,583.08 SQ.M.	133.02 SQ.M.
16th Floor Level	2,583.08 SQ.M.	133.02 SQ.M.
17th Floor Level	2,583.08 SQ.M.	133.02 SQ.M.

Parameters	Area	
18th Floor Level	2,583.08 SQ.M.	133.02 SQ.M.
19th Floor Level	2,095.30 SQ.M.	583.93 SQ.M.
20th Floor Level	2,095.30 SQ.M.	117.37 SQ.M.
21st Floor Level	2,095.30 SQ.M.	117.37 SQ.M.
22nd Floor Level	2,095.30 SQ.M.	117.37 SQ.M.
23rd Floor Level	1284.17 SQ.M.	822.56 SQ.M.
24th Floor Level	1284.05 SQ.M.	63.79 SQ.M.
Roof Level	143.62 SQ.M.	1187.24 SQ.M.
Machine Room Level	162.25 SQ.M.	29.93 SQ.M.
Apartment Subtotal	**44,294.13 SQ.M.**	**6886.65 SQ.M.**
Tower Total Built-up Area	**124,297,95 SQ>M.**	**17,051.65 SQ.M.**
VILLAS		
Villa Type-1		
Ground Floor Level	375.95 SQ.M.	
First Floor Level	394.40 SQ.M.	
Penthouse	194.29 SQ.M.	
Villa Type 1 Built-up Area	964.64 SQ.M.	
Villa Type 1 Total Nos.	2 Nos.	
Villa Type 1 Total Built-up Area	1929.28 SQ.M.	
Villa Type 2		
Ground Floor Level	249.89 SQ.M.	
First Floor Level	269.35 SQ.M.	
Penthouse	134.52 SQ.M.	
Villa Type 2 Built-up Area	653.76 SQ.M.	
Villa Type 2 Total Nos.	7 Nos.	
Villa Type 2 Total Built-up Area	4576.32 SQ.M.	
Villas Total Built-up Area	**6505.60 SQ.M.**	
GROUND FLOOR LEVEL		
Security Area	126.92 SQ.M.	
Chiller Yard	874.55 SQ.M.	
LPG Tank	230.27 SQ.M.	
GRAND TOTAL BUILT-UP AREA	**130,930.47 SQ.M.**	
HOTEL AMENITIES		
Ground Floor Level	3782.80 SQ.M.	
Ballroom 1	1132.37 SQ.M.	
Ballroom 2	1165.12 SQ.M.	
Specialty Restaurant	530.85 SQ.M.	
Sazelli Restaurant	736.09 SQ.M.	
Paddle court	218.37 SQ.M.	
Lobby Floor Level (UG)	6021.46 SQ.M.	
SPA + Saloon	1087.21 SQ.M.	

Parameters	Area
Retails	462.82 SQ.M.
Outdoor Pool Area and pool bar	1515.80 SQ.M.
Specialty Restaurant 1	521.04 SQ.M.
Specialty Restaurant (Divan)	821.64 SQ.M.
All Day Dining	903.12 SQ.M.
Lobby Cafe	709.83 SQ.M.
1st Floor Level	734.98 SQ.M.
Executive Lounge	435.35 SQ.M.
Hotel Administration Office	299.63 SQ.M.
8th Floor (Apartments)	1039.33 SQ.M.
Swimming Pool and Facilities	1039.33 SQ. M.
AMENITIES SUB-TOTAL	**10,239.61 SQ.M.**

Source: Estithmar

2.5 Water Requirement

The project's water supply during both construction and operation will be sourced from the Baghdad Municipality. Water supplied by the Baghdad Municipality will be utilized on-site for various purposes without any additional treatment. The estimated water requirement during construction and operation phase is 48.72 m^3/day and 823 m^3/day respectively. Water during construction phase is required for construction activities including civil work and domestic purposes. Water during operation will be required for domestic purposes, swimming pool make-up, etc. The break-up of water requirement for construction and operation phases is tabulated below in ***Table*** 2-5 and ***Table*** 2-6.

Table 2-5 Break-up of Water Requirement for construction phase

Components	Total quantity of Water required (in cubic m.)	Total quantity of Water required (in cubic m.)/day	Source
Water requirement for Civil Work	14091.83	24.465	Baghdad Municipality Network
Water requirement for domestic and sanitation purposes	9690.65	16.824	
Water requirement for Drinking purpose (potable water)	4277.45	7.43	
Total	**28059.93**	**48.72**	

Source: Estithmar

Table 2-6: Break-up of Water Requirement for operation phase

Components	Approximate Quantity of water (in cubic m.)/day	Source
Hotel Guest Room - (1st to 6th Floor)	164	Baghdad Municipality Network
Apartments (7th to 23 Floor)	238	
Kitchen demand	100	
Laundry demand	80	
Outdoor pool (Make up water demand)	30	
Villas (with 2 bedrooms)	4	
Villas (with 7 bedrooms)	12	
Water requirement for landscaping	195	

Components	Approximate Quantity of water (in cubic m.)/day	Source
Total	823	

Source: Portable Water Storage Calculation by Dara Engineering Consultants.

2.6 Wastewater Management

Wastewater generated from the Project is planned to be discharged into municipal drain. Approval for discharge of wastewater into municipal drain has been obtained (refer ***Section 3.4***). Sewage generated at the site will be managed through small septic tanks installed beneath each portable toilet. The collected sewage will be periodically removed and disposed of through authorized municipal tanker services. In addition, the site will be provided with a main sewer line, with interconnected manholes ultimately connected to the municipal sewer network.

2.7 HVAC System

The HVAC system incorporates automated temperature, humidity, and fan-speed control through a PID-based algorithm integrated with thermostats and central monitoring systems. Temperature and humidity levels are maintained within preset limits, with refresh cycles activated in unoccupied rooms to manage excess humidity. Fan speeds adjust automatically based on room heat load, with options for guest-selected fixed speeds and programmable limits to minimize noise. The system supports multi-room suites through synchronized thermostat control. Energy conservation is achieved through occupancy-based setback strategies, automatic detection of room rental and occupancy status, and load-shedding sequences that prioritize non-rented and unoccupied rooms while minimizing guest inconvenience.

2.8 Power Requirement

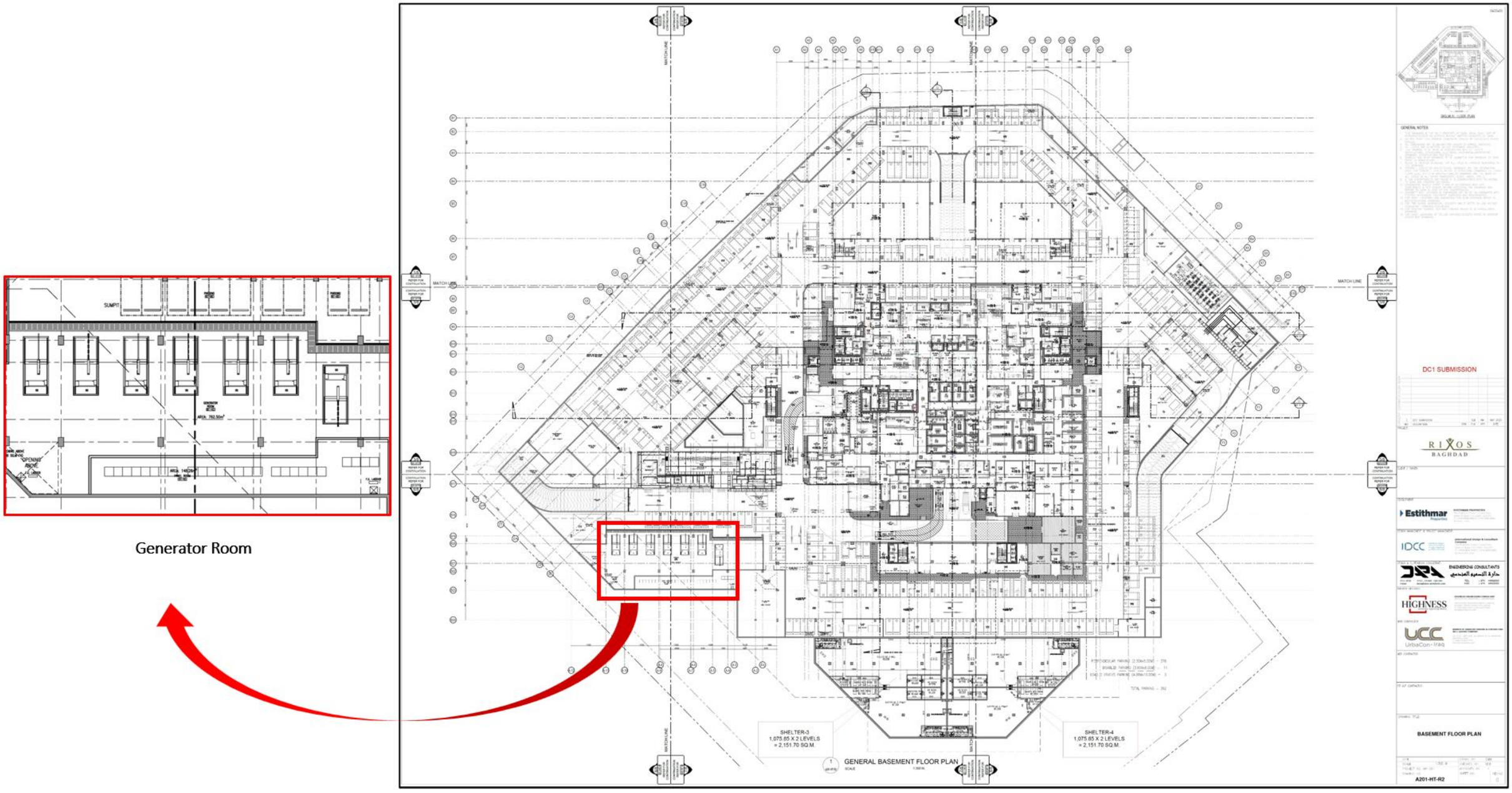
Construction Phase

UCC has obtained approval from the Ministry of Electricity to source power of 33 KV for the project during construction phase. The estimated total power requirement during the construction phase is approximately 802,014 kWh. However, due to frequent power outages in Baghdad, the EPC Contractor has arranged for diesel generator (DG) sets, which are primarily used to meet power needs during construction. The capacity and number of DG sets currently deployed are 4 Nos. of 650 kVA and 1 No. of 350 kVA at construction site for batching plant. Also, 3 generators of 650 kVA are deployed at camps. As understood, as on date D.G. sets are used as source of power but soon power from Ministry will be used on site for construction purpose.

Operation Phase

During the operational phase, electrical power will be supplied from the government grid through underground transmission lines. The total power demand of the project during operation is estimated at 12.53 MW. In order to ensure uninterrupted power supply, 100% power backup will be provided in the event of grid failure. Diesel generator (DG) sets will be installed to support essential and critical loads and will operate under a load-shedding and synchronization strategy. The backup system will comprise 8 × 2,250 kVA DG sets, along with 1 × 2,250 kVA DG set provided as a spare/standby unit, all connected through a synchronizing panel. The DG set room will be located in close proximity to the associated substation, and each DG set will be equipped with a 48-hour diesel storage tank to ensure operational reliability during extended power outages. The generator room situated in basement is illustrated in *Figure* 2-4.

Figure 2-4: Layout plan showing location of generator room in basement



Source: Estithmar

2.9 Fuel Requirement

Construction Phase

The average daily fuel requirement for operating eight DG sets ((4 x 650 KVA, 1 x 350 KVA and 3 x 650 KVA) during the construction phase is approximately 872 litres. Based on an estimated construction duration of 19 months, the total fuel requirement for the entire construction phase is projected to be around 502,088 litres.

Operation Phase

The estimated daily fuel requirement during the operational phase, assuming 8 hours of power backup through nine DG sets of 2,500 kVA capacity each, is approximately 34,488 litres. The project will maintain fuel storage sufficient for two days of operation. Additionally, smaller capacity fuel storage tanks will be installed for regular dispensing and operation of DG sets. Detailed calculations, including the number and capacity of fuel storage tanks, are presented in the ***Table*** 2-7 and ***Table*** 2-8. Details of fuel storage tanks is as presented in ***Table*** 2-7.

Table 2-7 Details of Fuel Storage Tank

Description	Quantity
Generator Set Capacity	2250 KVA
Total No. of Generators	8+1(stand-by unit)
No of hours of operation	24 hours
No of days of fuel to be stored	2 days
Fuel consumption of generators per hour	479 L/hour
Total volume of Fuel required per day	206928 liters (206.93 cubic m)
Required volume of fuel @10 % safety factor	227620.80 liters (227.62 cubic m)
Capacity of Fuel Tank	50,000 liters (2.4 m*6.3 m* 3.25 m)
No of Fuel tanks required to store diesel	5

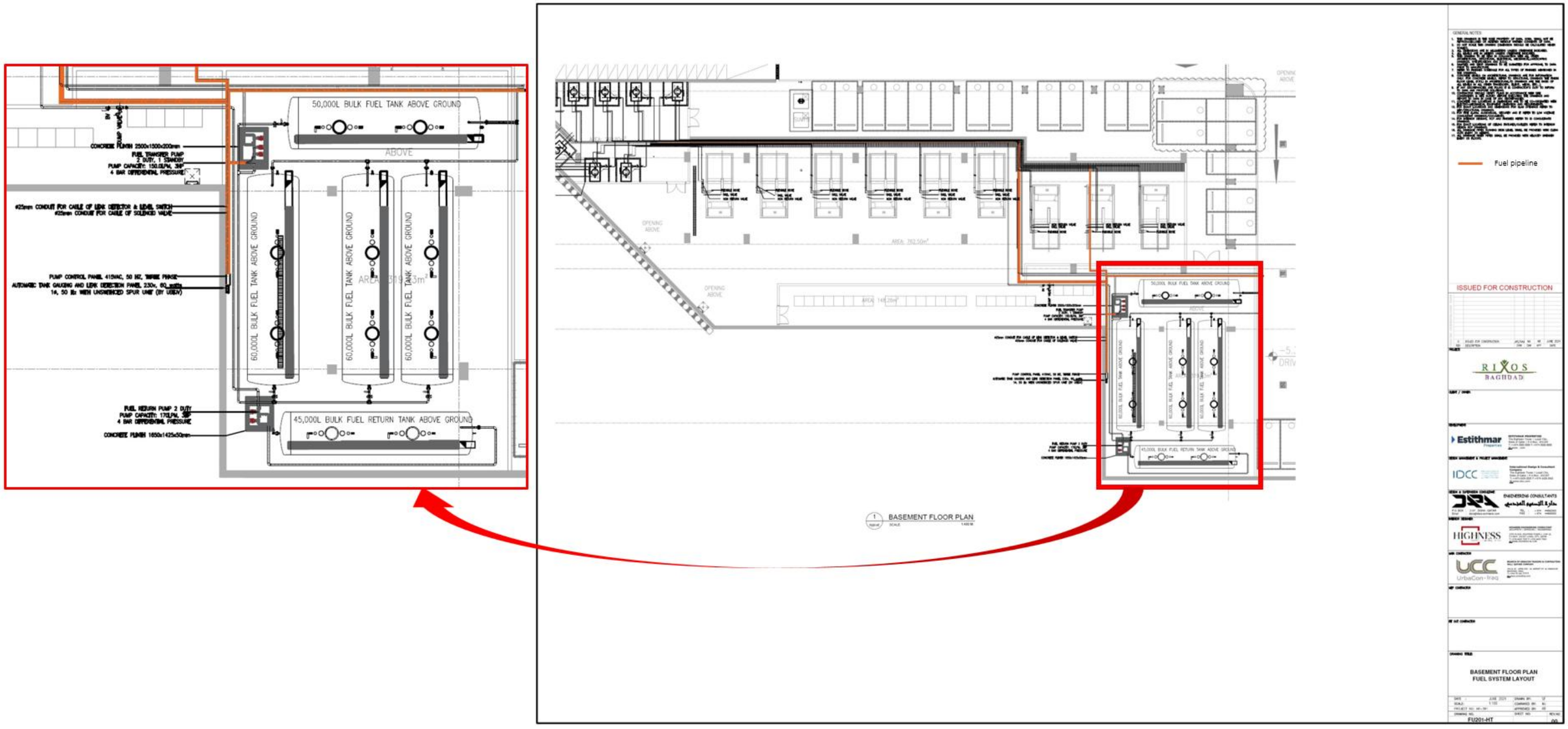
Source: Estithmar

Table 2-8 Details of Daily Storage and Dispensing Fuel Tanks

Description	Quantity
Generator Set Capacity	2250 KVA
Total No. of Generators	8+1(stand-by unit)
No of storage hours/day	8 hours/day
Fuel consumption of generators per hour	479 L/hour
Total volume of Fuel required per day	34488 liters (34.48 cubic m)
Required volume of fuel @10 % safety factor	37936.8 liters (37.93 cubic m)
Capacity of Fuel Tank	5400 liters (1.5 m*2.0 m* 1.8 m)
No of Fuel tanks required to store diesel	7

Source: Estithmar

Figure 2-5: Layout Plan showing location of fuel storage tank in basement

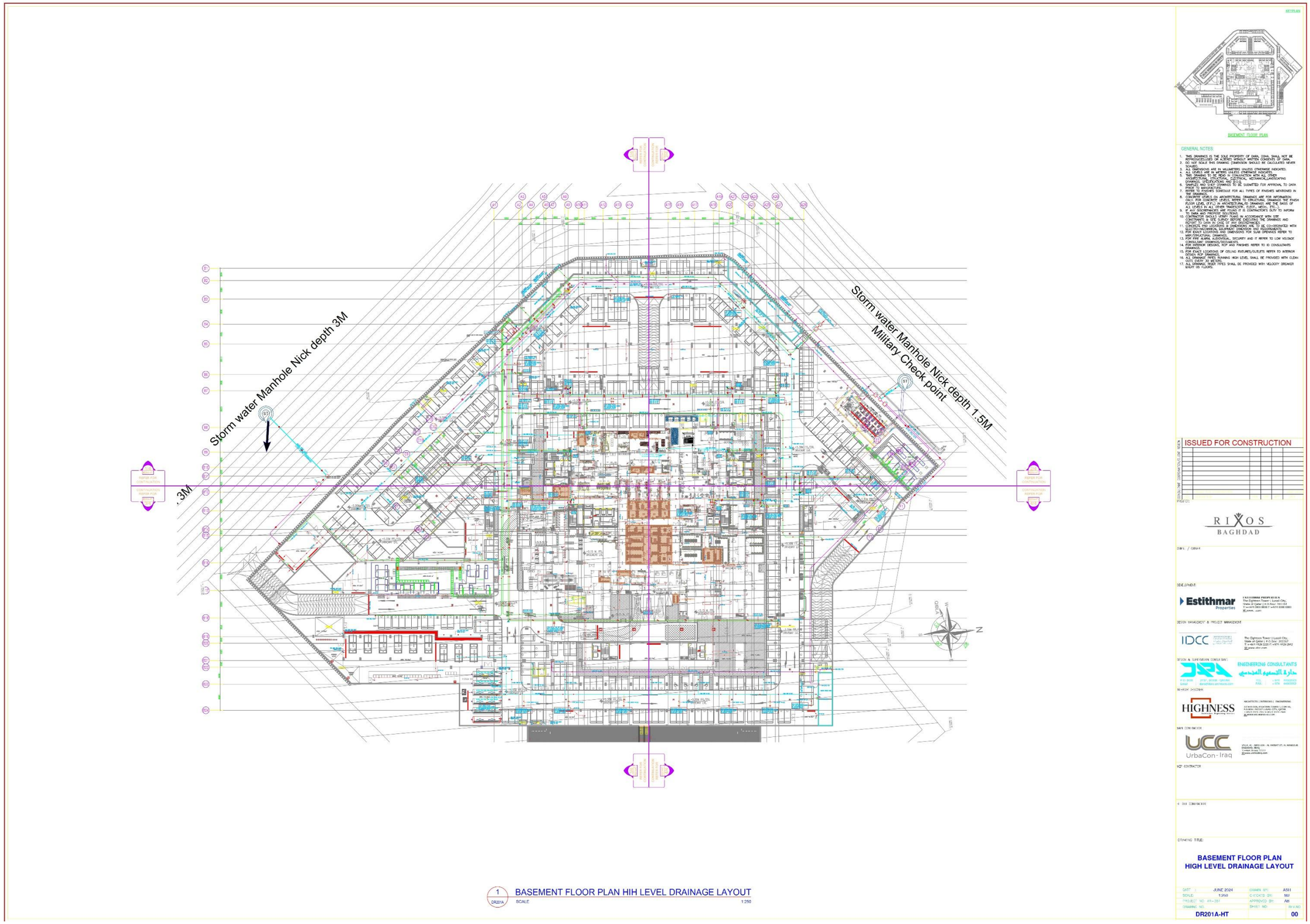


Source: Estithmar

2.10 Storm Water Control & Management

Measures that can be implemented to manage stormwater and reduce runoff risks include drainage planning and site hydrology. The project incorporates a comprehensive stormwater control and management system designed in accordance with BS EN 12056-2:2000 and applicable Iraqi regulatory requirements for both the construction and operational phases. Stormwater generated from basements, parking areas, ramps, tank overflows, and other low-lying service areas will be collected through a network of floor gullies and drainage pipes and conveyed to strategically located sump pits equipped with duplex or triplex submersible pumps, ensuring system redundancy and uninterrupted operation. The collected stormwater will be conveyed to dedicated stormwater storage tanks, which are directly connected to the municipal stormwater network to allow controlled discharge. A total of four stormwater tanks will be provided, with storage capacities of approximately 146 m^3, 277 m^3, 303 m^3, and 145 m^3, respectively. The system has been hydraulically designed to accommodate worst-case scenarios, including fire-fighting sprinkler discharge rates of up to approximately 14.2 l/s, thereby ensuring sufficient capacity during extreme rainfall events. The stormwater tanks are designed with a controlled 24-hour drain-down period to attenuate peak runoff and prevent overloading of downstream drainage infrastructure. Drainage Management Plan for the Project is illustrated in ***Figure*** 2-6.

Figure 2-6: Drainage Layout Plan



Source: Estithmar

2.11 Waste Generation and Management

Various types of wastes anticipated from the construction and operation of the proposed project and its associated management practices has been mentioned provided in the ***Table*** 2-9***.***

Construction Phase

Type of waste being generated and anticipated to be generated during construction phase include domestic waste, general mixed waste, concrete waste, wood waste, metal waste etc. Estimated monthly volumes of waste anticipated to be generated and management practices are presented in ***Table*** 2-9.

Table 2-9: Waste generated during Construction Phase

Category	Monthly Volume (m3)	Management Measure
Domestic Waste	6.56	Recyclable municipal waste materials such as paper/cardboard, plastic and metal is segregated/sorted and sent for recycling.
General Mixed Waste	86.11	Recyclable municipal waste materials is segregated/sorted and sent to a recycling company.
Hazardous Waste	Based on consultation and documents shared it was understood that hazardous waste is not generated at site. Also, as on date of site visit no hazardous waste was observed to be generated at site.	Paints, solvents, thinners, waste oil and lubricants from construction machinery, cleaning agents, etc. are anticipated to be generated. Thus, a detailed list of hazardous chemicals are maintained, and hazardous chemical list/inventory are updated on a regular basis. The following wastes will not disposed of in facilities without liners and appropriate collection systems: ● Waste for which a waste characterization has not been received and approved Iraq's Ministry of Municipality and Environment (MME) in writing; ● Waste that does not conform to the waste description provided to Iraq's Ministry of Municipality and Environment (MME) by the generator; ● Wastes that have a flash point of less than 60°C; ● Non-liquid waste that can cause fire through friction or chemical reaction; ● Strong oxidizers; ● Liquid wastes of any kind. Hazardous waste if generated on site will be disposed of through authorised agency.
Concrete Waste	8.33	Waste concrete and excavated soil / earth is collected by an earth truck. Excavated soil / earth is transported to a government designated Za faranya Construction Waste dumping area.
Wood Waste	27.44	Licensed contractors are engaged for the collection and disposal of non-hazardous industrial waste in either available landfill i.e. or at the Waste Management Facility.
Medical Waste	0.02	Medical waste is collected, handled, and disposed of through an authorized arrangement with the nearby St. Rafaels Hospital.
Plastic Waste	0.16	Plastic waste is segregated/sorted and sent for recycling.
Metal Waste	0.13	Metal waste is segregated/sorted and sent for recycling.
Paper Waste	100	Paper waste is segregated/sorted and sent for recycling.

Source: Estithmar

Operation Phase

During this phase, the waste generated includes food waste, packaging materials, plastic, paper, hazardous waste, electronic waste, etc. which is required to be segregated and disposed of in line with the applicable regulations. Also, significant amount of organic waste will be generated from kitchens and restaurants which would be disposed of through a recycling company. The list of waste estimated to generated in operation phase is presented in ***Table*** 2-10:

Table 2-10: Waste generated during operation phase

Waste generated	Quantity (m3/day)
Plastic Bottles	0.4
Paper Products	0.4

Waste generated	Quantity (m3/day)
Vegetables or Fruits	0.67
Ash- Slag	0.17
Glass Bottles	0.02
Broken Glass	0.01
Metal (Tins)	0.10

Source: Estithmar

During the operational phase, the project will provide two garbage chutes for effective collection and management of solid waste. The garbage chute 1 will serve the hotel and residential apartment components. Based on an assumed 90% occupancy factor and standard waste generation rates, the hotel component including 322 guest rooms (644 occupants), cafés and restaurants, a ballroom and convention centre (400 persons), and approximately 200 staff is expected to generate about 5.584 m³/day of solid waste. The residential apartment component, accommodating 523 persons, is expected to generate approximately 1.412 m³/day. Accordingly, the total waste managed through garbage chute 1 during operation will be approximately 6.996 m³/day. With a compactor providing a one-fourth compaction ratio, the effective compacted waste volume will be reduced to about 1.749 m³/day. Based on a container capacity of 1.12 m³, two containers will be required for daily operation, with one standby container provided to facilitate transfer to municipal collection vehicles.

Further, garbage chute 2 will serve the hotel component only. Based on a 90% occupancy factor, the total solid waste generation managed through this chute during operation is estimated at approximately 5.584 m³/day. With a one-fourth compaction ratio, the compacted waste volume will be reduced to about 1.396 m³/day, requiring two containers of 1.12 m³ capacity, along with one standby container for efficient waste transfer.

2.12 Parking

The Hotel Operator plans to provide parking area designed to accommodate guests, staff, and visitors. The basement level accommodates 397 parking spaces, and the ground floor provides 183 spaces capacity during peak periods and events. Parking layouts are designed for smooth vehicular circulation, with dedicated entry and exit points, clear signage, and lift access for convenient vertical movement within the hotel. Details of planned parking in hotel is illustrated in ***Table*** 2-11**.** Basement parking swept plans are presented as ***Figure*** 2-7**.**

Further, provision for EV charging has been incorporated into the parking design through dedicated electrical infrastructure. A total of five electrical isolators have been provided, comprising two at the ground floor parking area and three at the basement parking level. The provision includes two isolators with a Total Connected Load (TCL) of 11 kW and a Maximum Demand Load (MDL) of 5.5 kW, and three isolators with a TCL of 50 kW and an MDL of 25 kW, enabling future installation of EV charging facilities as demand arises.

Table 2-11: Parking details

Basement Level	
Car Parking	386
ADA (Americans with Disabilities Act)[1] Parking	11
Ground Level	
Car Parking	179
ADA Parking	4
Total parking provided	**580**

Source: Estithmar

Based on discussions with site officials, passenger car movement within the ground-floor segment of the site is planned through designated entry and exit points located along the southern side. Vehicles will circulate via the truck apron at the entrance and

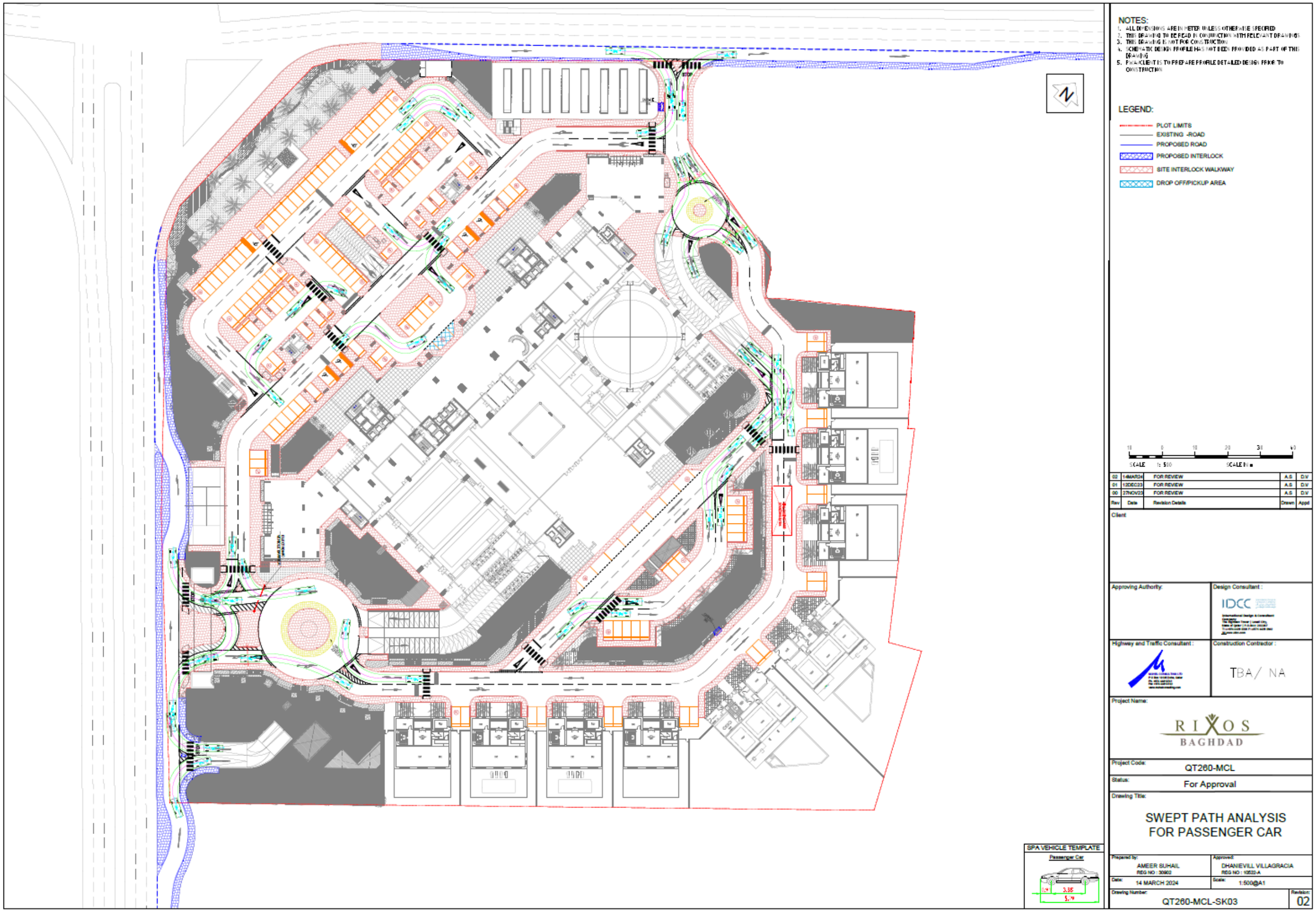
[1] The ADA requires businesses, non-profits, and state/local governments to provide parking spaces accessible to people with disabilities.

proceed along internal roads adjoining the villas, where dedicated parking spaces are provided adjacent to each villa. Vehicles will then continue toward the hotel lobby, in front of which approximately 21 landscaped parking spaces are proposed. Passenger drop-off will take place at the hotel lobby, after which vehicles will either proceed toward the villas located in the eastern segment or move to the ground-floor parking area comprising 4 ADA-compliant and 158 standard car parking spaces. Remaining vehicles will exit the site through the designated northern exit gates. In addition, the basement level provides a total of 397 parking spaces that would circulate.

Figure 2-7: Basement Parking Swept Plan

Source: Estithmar

Figure 2-8: Ground Floor Parking Swept Plan

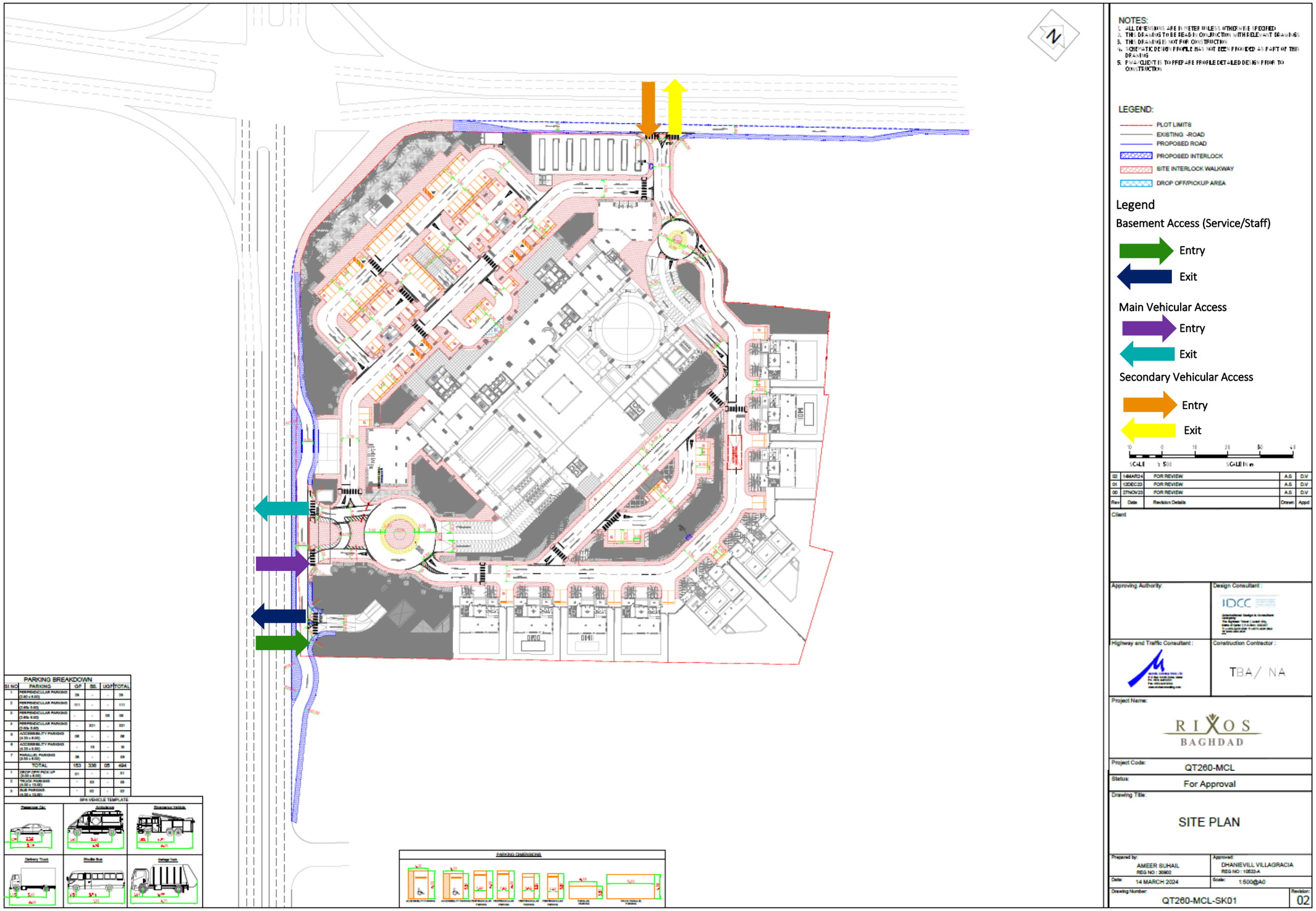


Source: Estithmar

2.13 Traffic Management

The development and operation of the Hotel is expected to generate a noticeable increase in traffic volumes in and around the project area. A Traffic Impact Assessment study has been conducted to provide an operational analysis and functional assessment for the area surrounding the Hotel. It addresses the existing (opening) situation of the area, and the opening year is considered 2025, as well as the future situation with ultimate year of 2050. As per the report, access to the proposed hotel is facilitated through designated entry and exit points around the plot. Access Location 01, situated on the western side, serves as the primary entry for vehicles heading to the basement level. Access Location 02 also provides entry and exit on the south-western side, connecting directly to the ground floor. Access Location 03, positioned on the northern side of the plot, functions as a secondary vehicular access point for the hotel. ***Figure*** 2-9 below illustrates the location of these access points for the proposed Hotel. Based on the assessment, the hotel is expected to generate approximately 260 trips during the peak hour of maximum demand. Thus, the traffic survey analysis illustrates the incremental impact of project-generated traffic on surrounding junctions is expected to be minimal, as these junctions are already operating at failing levels of service under existing baseline traffic conditions.

Figure 2-9: Exit and Entry Points of Hotel



Source: Estithmar

Traffic movement for passenger cars at the site is facilitated through designated entry and exit points, from which vehicles follow clearly defined internal roads and circulation aisles. Passenger cars are directed to drop-off zones near the main building entrances and hotel lobby, after which they proceed to designated parking areas located on the ground-floor and basement levels. Directional signage, road markings, and speed control measures are incorporated to minimize conflicts and congestion.

Ambulances, emergency vehicles, and garbage trucks access the site through the truck apron, pass through the hotel lobby zone, and exit via the eastern segment. Delivery trucks and shuttle buses are routed to a dedicated service area located in the southern section of the hotel, where entry, exit, and unloading activities are segregated from guest traffic.

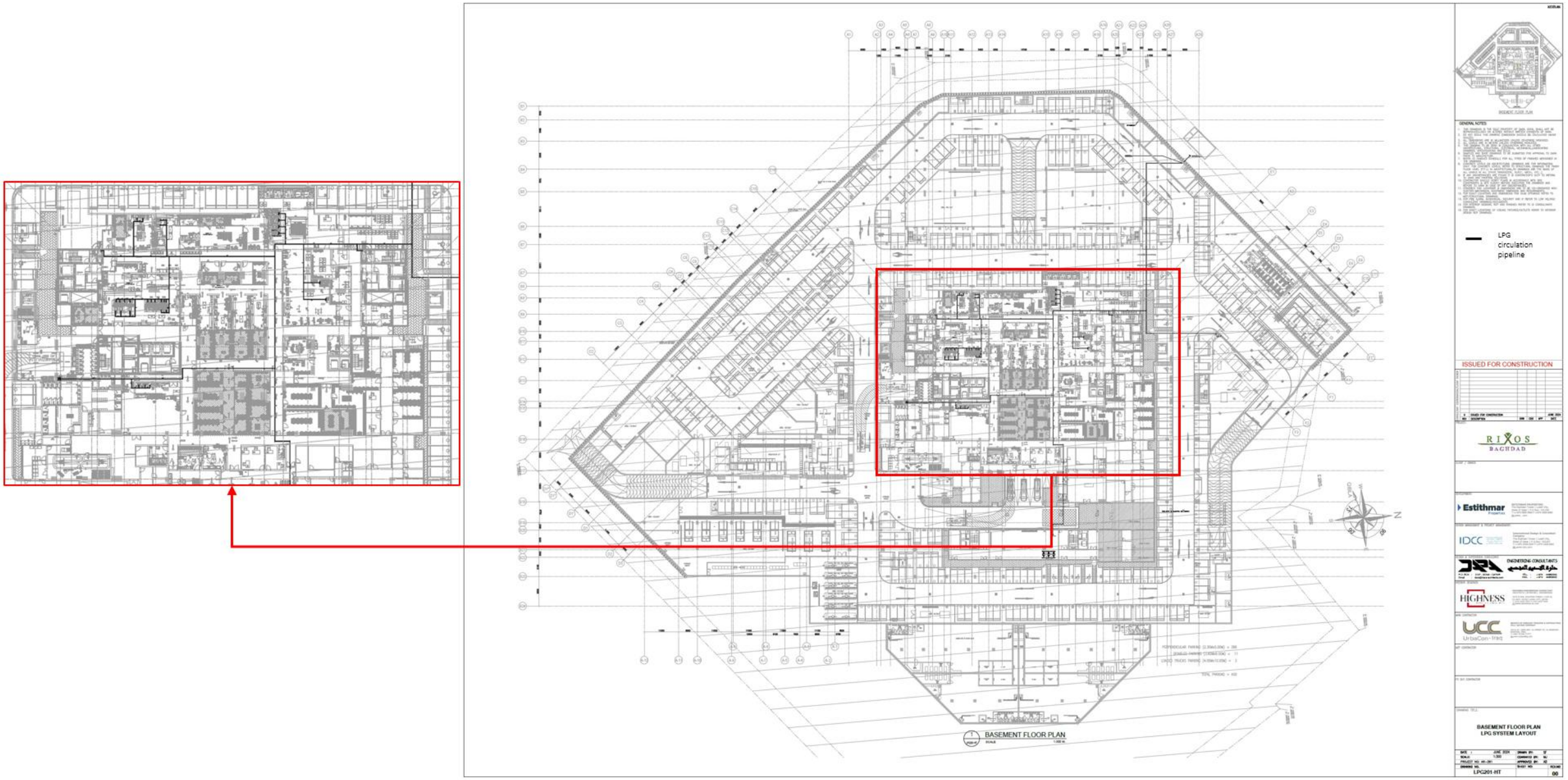
At the upper ground floor level, passenger cars access the area via the ramp leading to the upper ground floor foyer, proceed toward the truck apron ramp, and subsequently make a U-turn before exiting the site through the southern exit gate.

2.14 Liquefied Petroleum Gas (LPG) Storage

The hotel will be equipped with two underground LPG storage tanks with capacities of 49,500 litres and 49,200 litres, respectively, located at the ground-floor level. The underground configuration minimizes visual impact and enhances safety by providing thermal insulation and physical protection. A dedicated tanker parking and unloading area is provided in close proximity to the LPG storage tanks to facilitate safe and efficient refilling operations. This area is designed to allow controlled tanker movement and unloading while maintaining adequate safety clearances from occupied buildings and public areas, in line with applicable safety standards and operational requirements.

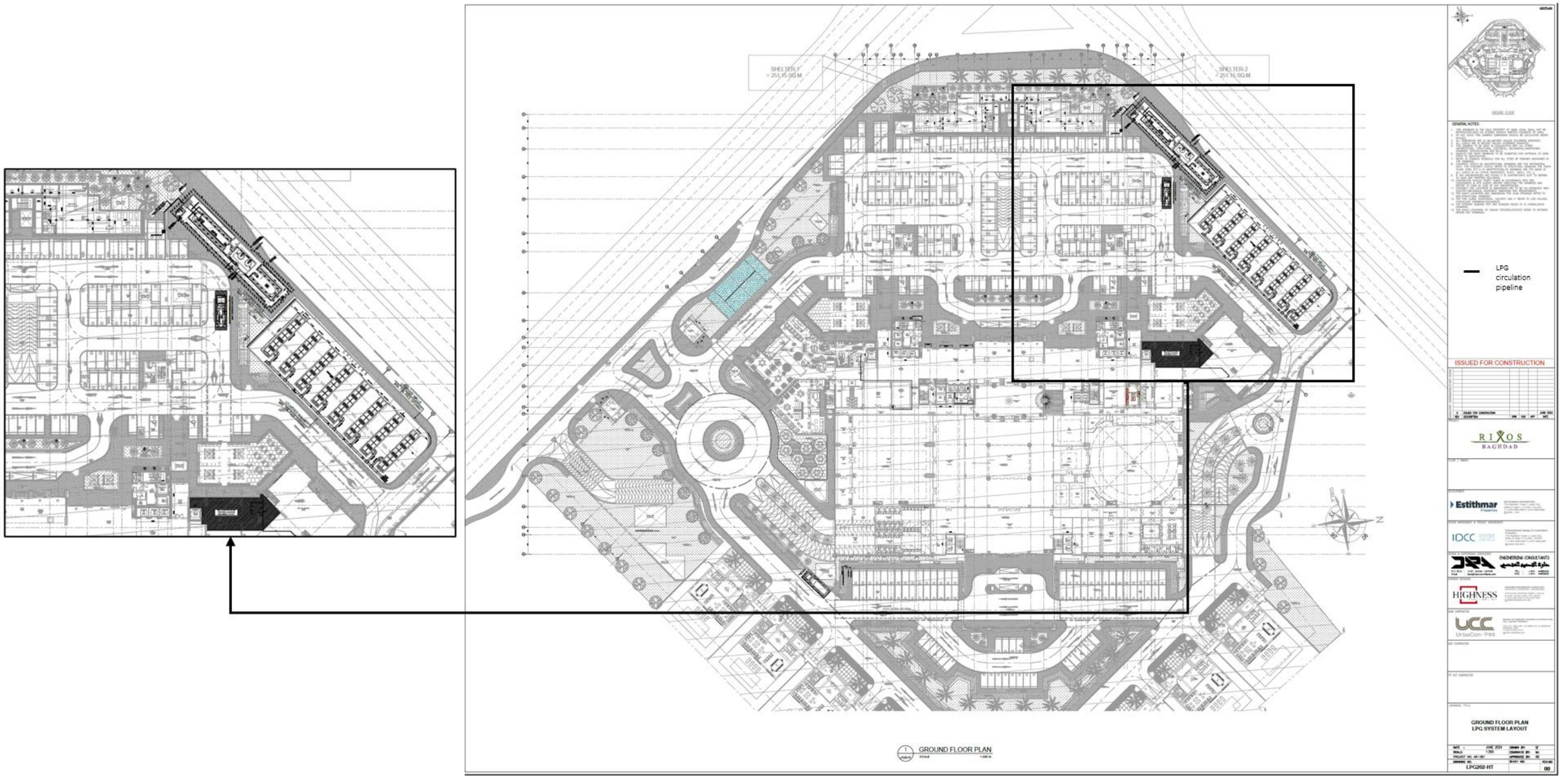
The project incorporates an LPG recirculation network designed to ensure safe, reliable, and uninterrupted distribution of LPG from the storage area to end-use locations at the basement and upper ground floor levels. The network is routed through designated service shafts and utility corridors to minimize interaction with occupied areas and reduce potential safety risks. LPG distribution is facilitated through a 90 mm High-Density Polyethylene (HDPE) PE100 SDR11 underground pipeline. The pipeline is installed within a 150 mm unplasticized polyvinyl chloride (uPVC) protective sleeve to provide enhanced mechanical protection and allow for safe inspection or replacement, if required. The sleeved pipeline is further encased in concrete to ensure structural stability and to protect against external loads, soil movement, and potential damage from vehicular traffic. The layout of LPG circulation pipeline and underground LPG storage tank is illustrated in ***Figure*** 2-10 and ***Figure*** 2-11.

Figure 2-10: Layout for LPG circulation pipeline in basement floor



Source: Estithmar

Figure 2-11: Layout of underground LPG Storage Tank on Ground Floor



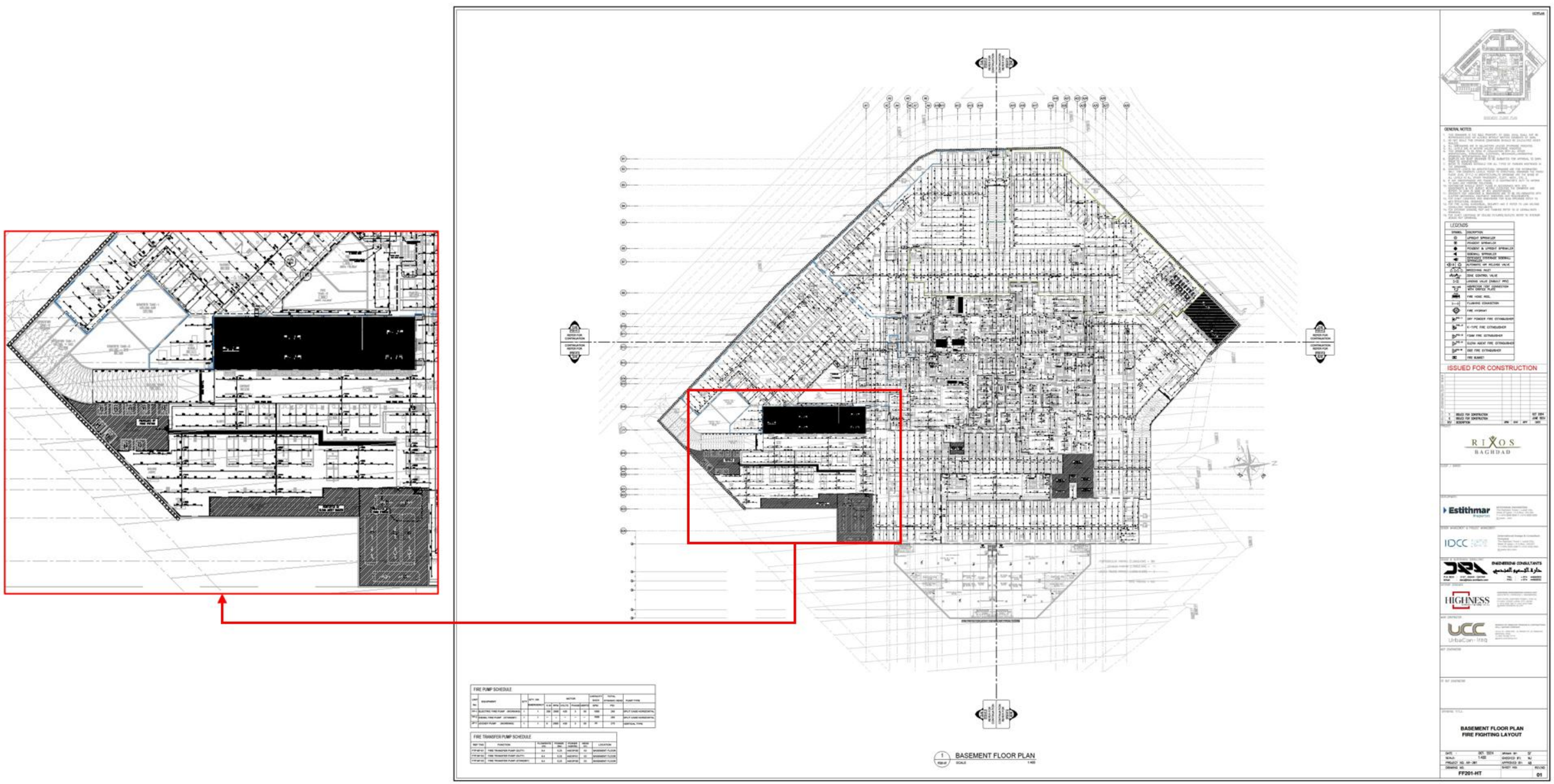
Source: Estithmar

2.15 Fire Fighting Requirement

The proposed fire safety management system will incorporate fire prevention, protection, and emergency response measures for both the construction and operational phases. During the operational phase, the project will be equipped with automatic fire detection and alarm systems, sprinklers, portable fire extinguishers, fire hose reels, hydrants, smoke detectors, emergency lighting, and fire-rated compartmentalisation to limit fire spread and ensure occupant safety. During the construction phase, trained fire wardens and HSE personnel will carry out regular inspections of fire exits, alarms, extinguishers, fire doors, and storage areas, oversee evacuation procedures, and coordinate with local emergency services. High-risk activities, including hot works, storage of flammable materials, and electrical installations, will be managed through a strict permit-to-work system, designated storage areas, clear signage, and routine inspections. Emergency preparedness measures will include prominently displayed evacuation plans, designated assembly points, periodic fire drills, regular inspection of fire-fighting equipment, and monitoring of fire risks through CCTV surveillance and site patrols. The fire-fighting layout plan is illustrated in ***Figure*** 2-12.

During the construction phase, one firefighting pump set comprising one diesel pump and one electric pump, each with a capacity of 250 GPM at 12 bar, will be installed and kept operational. The pump set will be located on the seventh floor to ensure adequate fire protection coverage during construction activities. Further, during the operational phase, a dedicated firefighting system will be installed comprising one electric pump (1000 GPM @ 18.27 bar), one diesel pump (1000 GPM @ 18.27 bar), and one jockey pump (25 GPM @ 18.96 bar).

Figure 2-12: Firefighting Layout Plan

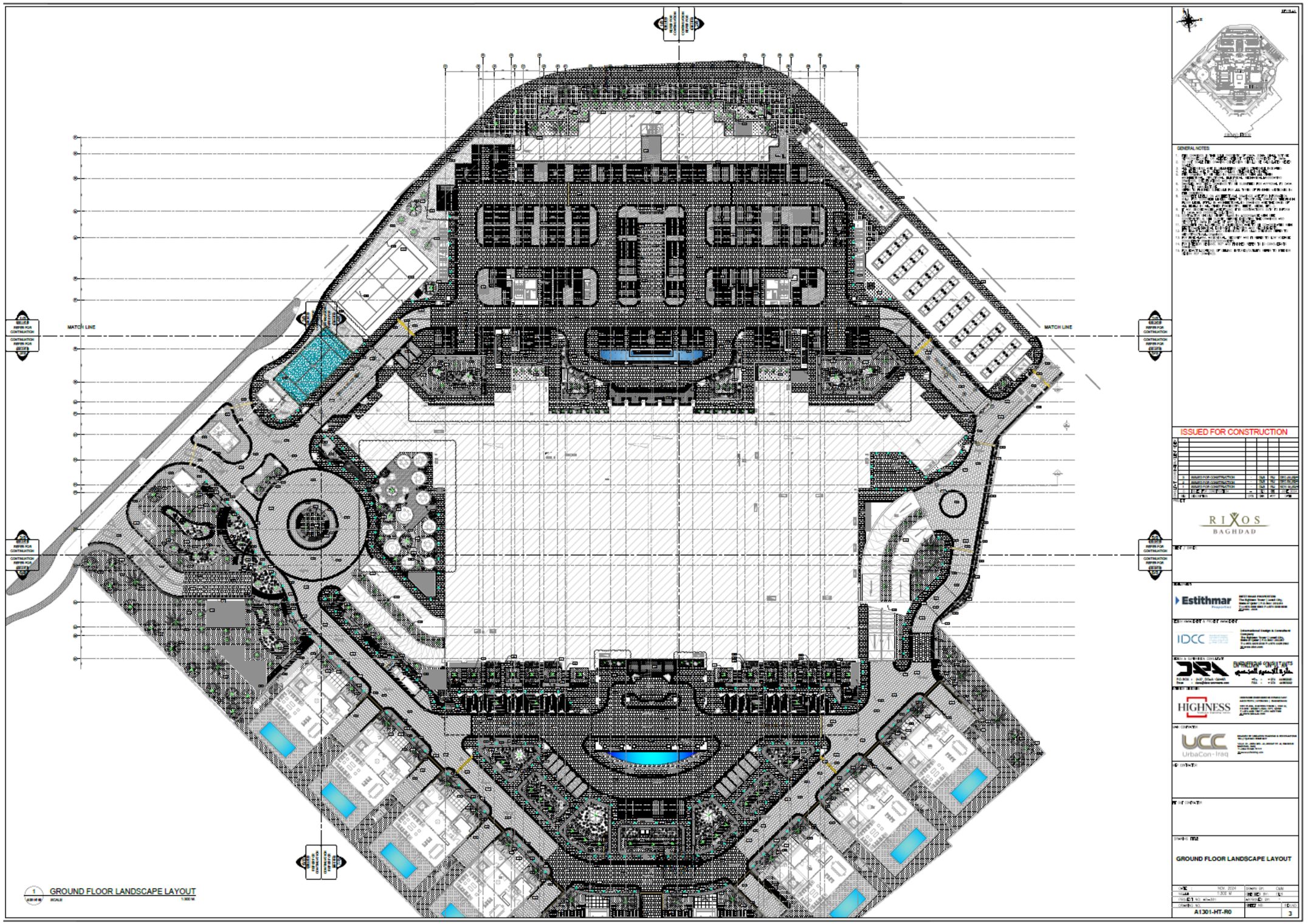


Source: Estithmar

2.16 Green Area

The proposed green area and landscape development of the Hotel project is distributed across ground floor, upper ground floor and 8th floor. At the ground floor, approximately 9,636 sqm is designated as landscaped green area and at the upper ground floor, the landscaped area covers 1,725 sqm. Its design integrates a diverse range of plant species across multiple categories, including trees, palms, shrubs, groundcovers, and grass. Trees proposed to be planted include species such as *Phoenix dactylifera* (Date Palm), *Terminalia cattapa* (Indian Almond), *Plumeria obtusa* (Temple Tree), and *Delonix regia* (Royal Poinciana) with defined installation sizes and quantities suited to key zones including pathways, driveways, and pool areas. Palm planting incorporates varieties such as *Cycas revoluta* (Sago Palm), while shrubs include *Leucophyllum frutescens* (Texas Sage), Bougainvillea glabra (Bougainvillea), *Galphimia glauca* (Galphimia), *Tecoma stans* (Trumpetbush), and *Nerium oleander* (Oleander), all deployed in large quantities to reinforce visual continuity and greenery throughout the development. Groundcover selections such as *Gazania rigens* (Treasure Flower), *Setcreasea pallida* (Purple Heart), *Verbena peruviana*, *Sessuvium portulacastrum* (Sea Purslane), and *Catharanthus roseus* (Madagascar Periwinkle) contribute to soil coverage, colour variation, and cohesive landscape layering, complemented by extensive *Bermuda grass* (Cynodon dactylon) areas identified for their high salt tolerance and suitability for the region's environmental conditions. The landscape layout plan is illustrated in ***Figure*** 2-13.

Figure 2-13: Landscape layout plan



Source: Estithmar

2.17 Land Requirement and Transfer Process

Based on discussion with representative from Estithmar Holding it was inferred that the Hotel is being developed on government owned land which has been transferred to the Client. As understood, there were total 22 land parcels which have been combined together into one single parcel and has been transferred from Government for the project. The land transfer process was done in August 2023. The total area of land required for the project is 46415 sq. m (4.6415 hectare). The entire land has been transferred by Baghdad Mayoralty[2] which was transferred to National Investment Commission[3]. Further the National Investment Commission has transferred the land for the project to Estithmar Holding on lease basis for lease tenure of 40 years.

The project is being developed in International Zone (erstwhile known as Green Zone). The International Zone, officially designated as such, is a secured district in central Baghdad with many government offices. The International Zone, previously known as the Green Zone, was also a designated restricted area with government and royal establishments.

The total land area required for the project is 46,415 sq. m, out which 18,979.52 sq. m (around 41 %) will be under covered area and remaining around 27,435.48 sq. m (59 %) will be left uncovered. The land requirement for various components of the hotel is illustrated in ***Table*** 2-12.

Table 2-12: Total Land Requirement

Details		Total area (in sq. m)	
Total Plot Area		46415	
Total Floor Area		91947.03	
Total Built up Area		130930.47	
Total Balcony Area		17051.65	
Total Commercial Area		11769.21	
Total Residential Area		53846.60	
Covered Area	**18979.52 (41 %)**	**Uncovered Area**	**27435.48 (59 %)**

Source: Estithmar

[2] The Baghdad Mayoralty, officially known as Amanat Baghdad, is the municipal authority responsible for managing Iraq's capital city. It oversees essential urban services such as road maintenance, water supply, sanitation, waste management, and public lighting, while also implementing large-scale development projects like the Baghdad Master Plan 2030. The mayoralty operates within a three-tier governance structure that includes political subdivisions, elected councils, and service entities, ensuring coordination between the city and the Baghdad Governorate. Headed by the Mayor of Baghdad, the institution plays a vital role in urban planning, heritage preservation, and infrastructure expansion, funded through taxes, fines, and provincial allocations. Its mission is to modernize Baghdad while preserving its historical identity and improving the quality of life for its residents.

[3] The National Investment Commission (NIC), established under Iraq's Investment Law No. 13 of 2006 and reorganized in 2007, is the central authority responsible for promoting, facilitating, and regulating both local and foreign investments via a "one-stop shop" model. Headquartered in Baghdad's Green Zone (Freedom Tower), it also supervises Provincial Investment Commissions (PICs) to support investment development throughout all governorates.

2.17.1 Land Transfer Methodology

In Baghdad's Green Zone, the transfer of government-owned land for private development follows a formal process overseen by the Baghdad Investment Commission (BIC) and relevant authorities.

The transfer of government-owned land within Baghdad's highly secured Green Zone to private developers is governed by a structured, multi-step process rooted in Iraq's Investment Law and coordinated through special provincial bodies. An investor begins by applying for a Green Zone access badge, which is mandatory for security clearance. After obtaining clearance, the investor submits a request for initial land approval, along with detailed documentation including identification, feasibility studies, project designs, financial capacity letters, corporate registration paperwork, power of attorney, and guarantees such as bank letters and parent company support. Further, developers typically begin by submitting a detailed proposal—including project concept, financial feasibility, and security planning—to the Baghdad Investment Commission's 'One-Stop Shop', which evaluates compliance with Investment Law No. 13/2006 and Green Zone regulations. After local evaluation, the proposal advances to the National Investment Commission (NIC), whose board reviews strategic fit and project scale. Upon NIC approval, the Council of Ministers grants a long-term lease or concession—typically spanning 25–50 years. This lease includes specific provisions on land use, development timelines, security obligations, and financial guarantees. Copy and lease documents are then coordinated with the Public Real Estate Directorate, which officially transfers title rights under the Ministry of Finance, while ensuring coordination with security agencies to preserve the sensitivity of Green Zone areas. Throughout this process, developers must navigate bureaucracy and regulatory hurdles—long recognized issues in Iraq's investment environment.

Once the application and fees are verified, and all documents are submitted, the investor receives an investment license and land allocation approval, typically within approximately 20 to 61 days. Following this, the land parcel is formally allocated within the Green Zone, pending full delivery, site preparation, and recognition of development rights—subject to strict adherence to zoning and environmental regulations[4].

During site visit it was inferred that Estithmar has received Investment License (vide no 442/2023)/B from National Investment Commission, Presidency of the Council of Ministers, Republic of Iraq on 17th August 2023 for project investment period of 40 years.

2.18 Current Status of the Project

As on the date of assessment, the Hotel is in the advanced stage of construction, with almost 50% of the construction being completed. The structural frame is complete till 16th floor, the basement area has been almost complete and brick work has been completed till sixth floor segment. Major civil and structural works are largely completed, and finishing, MEP installation, and system integration activities are ongoing across various sections of the project. External development works such as internal roads, parking areas, landscaping, and utility corridors are being executed in parallel.

Waste Management: On-site domestic waste is segregated at site and is disposed through municipality, wood waste is reused for construction purposes, steel bars sold to local Iraqi company (Abu Ghreb Steel Melting Plant) and C&D (construction and demolition) waste is also disposed through Municipality. At site, it was observed C&D waste are stacked at a dedicated location through small dumper trucks, which is further collected on a weekly basis by municipality vehicle and dumped to Za franya construction waste dumping ground. Also, domestic waste generated at site is collected daily in the morning hours by municipality vehicle and further transported to Al Baya's waste compaction station.

Wastewater management: During the construction phase, sewage generated at the site is managed through small septic tanks installed beneath each portable toilet. The collected sewage is periodically evacuated and disposed of using municipal tanker services. The site is also provided with a main sewer line, with individual manholes interconnected and ultimately linked to the municipal sewer network for controlled drainage.

Grey/ Reject Water Management: Water generated from construction-related activities, such as curing operations and RO reject water, is collected in temporary storage tanks provided at various floor levels. This collected water is subsequently conveyed to the sedimentation tank located at the basement level which is treated and further drained to municipal drainage. A garland drain system has been constructed within the site premises to collect surface runoff, which is also directed to the same stormwater tank. The municipal stormwater line is directly connected to the stormwater tank for controlled discharge. The total number of stormwater tank is 4 No.s and the storage capacity of the stormwater tanks are approximately 146 m^3, 277 m^3, 303 m^3 and 145 m^3.

[4] https://baghdad.eregulations.org/procedure/55?l=en&reg=0

Water Sourcing: Based on consultations with site personnel and a review of documents provided by the Client, it is understood that water for civil works and domestic purposes is primarily sourced from the Baghdad Municipality. During the site visit, it was also observed that groundwater abstraction is carried out at the site due to the high groundwater table in Baghdad, which interferes with excavation and foundation works. The abstracted groundwater is subsequently filtered and drained before being disposed of to the Baghdad Municipality. This groundwater is not utilized for construction activities owing to its high sediment content.

Construction Material: Based on consultations with site representatives and review of project documentation, it is understood that cement, sand, and coarse aggregates are procured locally, with cement supplied from the Sulaimani Cement Factory located approximately 350 km from the project site. Also, water required for concrete mixing is sourced from the Baghdad Municipality. On average, approximately 75 litres of water are utilized per cubic metre (m^3) of concrete. The concrete mixing operations at site are carried out in compliance with relevant RSTM or British Standards. Further, it was observed cement is stored on-site in closed silos to prevent material loss and dust generation, while sand and aggregates are stockpiled in designated areas. Sewage generated from the batching plant area is collected in a dedicated 20 m^3 storage tank located adjacent to the facility and is periodically removed and disposed of through government-authorized tanker services.

Health and Safety Aspects: Health, Safety, and Environment (HSE) management systems are actively implemented at the project site, with routine monitoring and inspections carried out to ensure compliance with applicable standards and project-specific requirements. Daily toolbox talks (TBTs) are conducted during morning hours, covering key topics such as fire-fighting, first aid, and work-at-height safety. In addition, comprehensive weekly toolbox talks are organized, during which all workers and engineers assemble at the designated assembly area for broader HSE briefings. Within the site premises, photographs and contact details of 18 trained fire marshals are prominently displayed to facilitate prompt response during emergency situations. Traffic management measures are also implemented, including the deployment of three flagmen during night-time operations and five flagmen during daytime activities. Vehicle speed limits within the site are strictly regulated and maintained between 5–10 km/hr. Furthermore, emergency communication channels and hotline numbers are clearly displayed across the site to ensure effective emergency preparedness and response.

Social Aspects

Permits and Licenses: During site visit it was inferred that the licenses and permits related to land clearance, land transfer certificate from Baghdad Mayoralty, NOC from Antiquity's authority, Security clearance from Ministry of Interiors and Security approval from Prime Minister's Security council etc have been obtained prior to handing over of the land to project proponent by NIC.

Further the project proponent/EPC Contractor in this case also need to obtain various permits for deploying local and foreign workforce including the foreign workers' permits, Social Security registration for the Iraqi workers as well as the foreign workforce, security clearance etc. During site visit it was inferred from Legal team that UCC has applied for the above permits and the same are under process.

Workforce: As already mentioned, the construction activities were started and around 50 % of civil work has been completed. As per data shared by UCC (Project Manpower Report) dated 1st December 2025, it is inferred that around 2434 workforce is deployed at site, out of which there are around 15-20 females and around 2410 males. The workforce comprises of employees (staffs) of UCC, IDCC and the contractual workers. The detailed description of workforce is provided in section 2.19.2.

Security System: The project is situated in Green Zone, hence the project proponent is under strict security protocols given the sensitivity of the location. As reported, project proponent has obtained approval from the Prime Minister's security council at Baghdad, further security approvals and permits have been also obtained from the Ministry of Interiors. During site visit it was inferred that no person is allowed to walk on the roads within green zone and only private vehicles of residents are allowed to pass through the green zone. UCC has obtained special permits from the city level Security councils for allowing movement of heavy vehicles used for transporting equipment, raw materials etc. for the project construction phase. Reportedly UCC has to obtain prior permission for its logistics at the site.

At the project site there is strict security protocol maintained. The security system at project site is implemented at three level, there are security guards deployed at site who are supervised and managed by the security in-charges and the entire security system is supervised and managed by the security manager. Reportedly the security guards, security in-charges and security manager are deployed by UCC, and they are from local areas.

Trainings and Inductions: During site visit it was inferred that there is EHS team and HR team deployed at site. The EHS team provides induction trainings related to occupational health and safety, emergency management, grievance redressal at site, SAP training,

Code of Conduct expected from workforce, HR training etc. Further work permits are issued for specific job role which are valid for 7 days, once the work permits become expired further the work permits are re-issued. Usually, the sub-contractors raise request for specific permit to UCC, the site engineers of UCC first checks and signs the work permits further it is validated and cross-checked by the HSE team at site. Reportedly pre-task briefing and toolbox talks are conducted on daily basis. During site visit assembly points for emergency situations were observed at strategic locations.

UCC also conducts medical fitness check-up prior to onboarding of the workforce, there is one medical aid centre within project site which is operated by one doctor and two nurses. Further UCC has tie ups with two hospitals for providing treatments during health emergencies.

2.19 Construction Phase

Construction activities will be implemented in a phased manner, comprising site preparation and excavation, structural works, building envelope installation, and internal fit-out. Peak construction activity is anticipated during the excavation and structural phases, when heavy equipment is used, material transport, and workforce presence are highest, resulting in increased intensity of key environmental and social impacts such as noise, dust generation, traffic movement, and occupational health and safety risks. Corresponding phase-specific mitigation measures are presented in the ***Section 8.3***.

2.19.1 Contractors

Estithmar Holding has deployed various contractors for the design, construction and operation of the Hotel at Baghdad. The various contractors deployed by the Project are tabulated below in ***Table*** 2-13.

Table 2-13 Details of Contractors Onboarded

Sl. No.	Name of Contractor	Scope of work
1.	Urbacon Trading & Contracting	EPC Contractor
2.	Elegancia Fit out	FF&E and Fit out Contractor The contractor has been deployed for providing Furniture, Fixtures, and Equipment required during construction and operation of the Hotel.
3.	International Design & Consultant Company (IDCC)	Design & Supervision Consultant The IDCC is deployed to provide Lead Design Management Services and also Project Management Consultancy Services. Further, as part of PMC IDD has deployed various sub-contractors for executing activities during construction phase. The list of Sub-contractors is provided below:
Sub-contractors under IDCC		
a.	Highness	Contractor involved in preparation of Master Plan, architect and Interior design
b.	Dara Engineering Consultants	Civil, Structural, Infrastructure and Mechanical, Electrical and Plumbing (MEP) Engineering
c.	Dara Engineering Consultants	Site Supervision Consultant
d.	Dara Engineering Consultants	Landscape, Kitchen & Laundry, Security, Acoustic, Audio-Visuals and Information Technology
e.	Muhel Consulting WLL	Traffic Impact Study, Resident Engineers
f.	ECB Company	Geotechnical Survey and Topo Survey
g.	UMAYA Lighting Design	Lighting Specialist (Internal, Façade and Landscape)
h.	Artelier	Artwork
i.	Artistic Engineering Models	Maquette
j.	Luxury Hospitality	Operating Supplies and Equipment
k.	Dimashqi	Screed work
l.	Asawer Alzomored	Waterproofing
m.	Nokhbat abraj Alameer	Structure Work
n.	Wed Aleman	Bock work

Sl. No.	Name of Contractor	Scope of work
o.	Wadi Degla	Block Work
p.	Ardh Zamzam	Waterproofing
q.	Elegencia MEP	MEP Work
r.	Elegancia Water resources	Swimming Pools MEP + finish
s.	Alshatha	False Ceiling
t.	Dorat Alorman	Painting
u.	Sama Edan	Concrete Cutting
v.	Dr.Concrete	Concrete Cutting
w.	Rabea Albenaa	Painting
x.	Rueat Almohandis	Waterproofing
y.	Projective	Signage

Source: From UCC (EPC Contractor)

2.19.2 Workforce

Based on information made available by Client, around 2500-3000 workforce is deployed during construction phase.

As per information shared by UCC's HR team (Project Manpower Report) dated 1st December 2025, there are total of 2434 workforce deployed at site, out of which there are 15-20 females and around 2410 males. The workforce of UCC is divided into four categories namely consultants, staffs, external staffs and labourers. There is one number of consultant and external staffs respectively and there are 123 staffs deployed by other sub-contractors and 141 staffs of UCC at site and there are around 2170 contractual workers deployed by UCC and other sub-contractors at site. There are no female labourers, external staffs and consultants at site and the 15 to 20 female workforces are staffs/employees of UCC respectively. The female employees are from Iraq where the male workforce is from various other countries. The details of workforce are tabulated below in ***Table*** 2-14.

Table 2-14 Workforce Details

Employment Type	Total Number	Male	Female	Positions	Grade of Work	Nationality
Consultant	1	1	--	Consultant	Skilled Workforce	Iraq
External Staff	1	1	--	Consultant	Skilled Workforce	Egypt
UCC Staff	141	120	15 to 20	• Chief surveyor • Construction manager • Cost control manager • Doctor • Document controller • Electrical supervisor • Environmental manager • Facility management coordinator • Foreman • General foreman • HSE officer • Labor relations team leader • Lead document control • Lead planner • Lifting supervisor • Logistic officer • Maintenance manager • Nurse • Plant manager • Project director	Skilled Workforce	• Egypt • India • Iraq • Jordan • Kenya • Lebanon • Nigeria • Pakistan • Palestine • Syrian Arab Republic

Employment Type	Total Number	Male	Female	Positions	Grade of Work	Nationality
				• Project engineer • Public relation officer • Security manager • Senior accountant • Senior administrator • Senior cost control engineer • Senior document controller • Senior draftsman • Senior foreman • Senior HR Government Affairs officer • Senior HSE Engineer • Senior HSE officer • Senior Material Engineer • Senior Logistic officer • Senior Mechanical Project Engineer • Senior MEP Project Manager • Senior Nurse • Senior Procurement officer • Senior Project Engineer • Senior QA/QC Engineer • Senior QHSE Manager • Senior Quality Surveyor • Senior Quantity Surveyor • Senior Site Engineer • Senior Storekeeper • Senior surveyor • Senior Technical coordinator • Senior WSD production supervisor • Site engineer • Warehouse manager • Warehouse supervisor • Welfare officer		
Staff of Sub-contractors	123	123	--	• Varied posts	Skilled Workforce	• Egypt • India • Iraq • Jordan • Kenya • Lebanon • Nigeria • Pakistan • Palestine • Syrian Arab Republic
Laborers	2170	2170	--	• AC Technician Chargehand • Block Mason • Bus driver • Camp boss • Carpenter • Carpentry Chargehand • Civil chargehand • Cleaner • Concrete mason • Electrical chargehand	Semi-skilled and un-skilled workforce	• Bangladesh • India • Iraq • Kenya • Pakistan • Syrian Arab Republic

Employment Type	Total Number	Male	Female	Positions	Grade of Work	Nationality
				• Electrician • Finishing carpenter • Furniture carpenter • General mason • Gypsum board worker • Heavy duty driver • House captain • Light duty driver • Logistic chargehand • Mason chargehand • Office assistant • Paint chargehand • Painter • Plaster mason • Plumber • Plumbing chargehand • Rigger operator • Safety inspector • Scaffolding chargehand • Security chargehand • Security guards • Shuttering carpenter • Shuttering carpenter chargehand • Steel fixer • Store helper • Surveying assistant • Tile mason • Timekeeper		

Source: Estithmar

As per Law 18 of 2023, the contractor would need to obtain Permit of Social Security under Iraqi Labor Law, which as reported by HR team is under process.

Out of total number of 2434 workforces, out which reportedly around 20 % are of Iraqi nationals and remaining 80 % are expats. Further of the Iraqi nationals, reportedly around 70-80 are from Baghdad governorate and the remaining are from various other governorates of Iraq. UCC has provision of labor camps for the workers while separate guest house facilities in Karrada area are also provided for the employees and staff of UCC. Hence it is inferred that majority of workforce deployed for the project are expats.

The large influx of migrant workers into Baghdad's Green Zone periphery and the Karrada district intensifies community-interaction risks by increasing population density in already sensitive urban environments, where heightened security measures, strained public services, and historical exposure to violence may amplify local tensions. In the Green Zone, concentrations of non-local workers near diplomatic and government facilities increase suspicion, frequent security checks, and movement restrictions, while in Karrada—an open, mixed-use commercial area with past mass-casualty attacks—the daily interaction between migrant laborers and residents heightens perceptions of insecurity, cultural friction, and competition over jobs and services, leading to resentment, profiling, and the rapid escalation of minor disputes into security incidents, especially in contexts of informal housing, weak regulation, and persistent fear of infiltration or criminal activity. Further, Deloitte team also collated the tentative details of contractor/sub-contractor-wise workforce deployed at site, the details of same are tabulated below in ***Table*** 2-15**.** Reportedly the number of workforces deployed by contractors and sub-contractors vary as per requirement.

Table 2-15 Contractor-wise Manpower

Name of Contractor	Total Manpower
UCC	1331
Elegancia (MEP)	487

Name of Contractor	Total Manpower
Elegancia (Fit Out)	35
Wed Al-Eman Co.	86
Melia Construction	110
Alandulos	23
Asawar Alzomored Co	10
Circular City	20
Monneli Co	5
Egy construction	20
Elegencia Sub-contractor: Al-Raghad	123
Big Cranes Co	2
AL AMEER	109
Diyar Al Ghanim	30
MD	11
Magnum	32
Total	2434

Source: UCC HR Team

2.19.3 Construction Material Requirement

The major construction materials required for establishment of the Hotel can be segregated as per requirement such as Structural materials, Foundation & Framing materials, Flooring & Finishing materials, Roofing materials, Doors & Windows, Plumbing & Sanitary materials, Electrical & HVAC (Heating, ventilation and air-conditioning) materials among others. A tentative list of construction materials as per these segregated activities are referred below in ***Table*** 2-16.

Table 2-16 Major Construction Materials

Sl. No.	Broad Segregation of Material Requirement	Details of Materials	Source	Quantity (ton)
1.	Structural and Foundation & Framing Materials	Cement	Sulaimani Cement Factory, Iraq	50,409.53
		Sand	Locally from Iraq	82,704.20
		Aggregates	Locally from Iraq	124,252.80
		Steel reinforcement bars	Locally from Iraq	-

Source: Estithmar

As per discussion with Client it was inferred that the construction materials (for interior works such as designer stones, tiles, marbles, etc.) if required shall be imported from other countries. These will be brought through sea route (Um Quasar Port in Basra city around 500 km from project site) and from which it is transported to the construction site through trucks and other heavy vehicles. If the construction materials are procured from Iraq and Turkey, then it is transported directly through trucks and heavy vehicles.

2.19.4 Worker Accommodation and Labor Camp

IFC Performance Standard 2 requires labour camps to provide safe, healthy, dignified, and well-managed living conditions for workers, which includes:

- having a formal worker-accommodation management plan,
- ensuring buildings are structurally safe and not overcrowded, and providing adequate space, ventilation, lighting, and privacy.
- camps must also include sufficient and hygienic sanitation facilities, potable water, reliable utilities, and properly managed waste systems, along with safe food provision through certified caterers.

- IFC PS2 further requires robust fire safety measures—including alarms, multiple exits, regular emergency drills, and maintained firefighting equipment—plus clear emergency procedures in languages workers understand.
- workers must have freedom of movement, non-discrimination in housing allocation, access to recreational areas, and a confidential, accessible grievance mechanism specifically for accommodation issues.
- operators must monitor third-party camp managers, ensure health services and first-aid access, and provide security personnel trained to respect human rights.

As inferred during site visit, majority of workforce deployed during construction phase are migrant workers. Further majority of the employees of UCC are also expats. UCC provides accommodation facilities to the workers as well as employees. Reportedly for expat employees, guest house facilities have been provided by UCC.

There is no female contractual deployed at site hence no labour accommodation is required for them. There are around 15 to 20 female staffs deployed by UCC and they are from Baghdad city hence no accommodation is provided to them. For the male contractual workers, accommodation is provided in three labour camps situated in Karrada area of Baghdad. The three camps have total capacity of around 2720 residents (presently occupied by 1720 workers); (Labour camp 1 with capacity of 1270 residents but presently occupied by around 909 residents, Labour Camp 2 with capacity of 825 residents presently occupied by around 509 residents and Labour Camp 3 with capacity of 625 residents presently occupied by around 307 residents respectively).

Finding and Observations of Labour Camp 3 assessment of the facilities provided to the workers is as follows:

- The labour camps are set up in rented multi-storeyed building, with each floor accommodating roughly 70-80 residents, indicating high density of workers per floor.
- There are lights, fans and air-conditions/ air coolers present in each floor. The rooms were ventilated with provision of windows and common balcony. Facilities such as bunk beds, individual cub-boards, shelfs are provided.
- Common washrooms in each floor are provided which are used on sharing basis.
- The labour camp facility lacks a laundry facility and workers have to wash all their clothes themselves by hand. During site visit it was observed that there is one balcony in each floor however, drying of clothes in the balcony is prohibited (as requested by local communities as it disturbs the aesthetics of the area), hence workers dry their clothes within the common lobby.
- There is a dining area and common area in the labour camp with provisions of indoor games. As part of welfare activities, outdoor sport tournament is conducted as per welfare calendar. However, no designated space is marked for outdoor games.
- There are notice boards where important notices are displayed in English, Arabic and Hindi. It was observed that important emergency contact numbers of HSE Manager, Clinic and Camp Manager are displayed at the labour camps adhering to the IFC PS 2 norms.
- The labour camps are equipped with fire hose pipes, smoke detectors and fire extinguishers were observed at each floor. However, fire alarms were not observed, and emergency drills are not practiced at the labour camp. While there are 600 workers staying the building, however only one staircase is provided.
- There was a designated assembly point within labour camp no 3 premises however the access to such emergency point is limited due to presence of only one staircase.

UCC obtains water from Municipal supply for drinking and domestic purposes. There are tanks present in labour camp (in Camp 1 there are 5 tanks of capacity 5000 L and there are one tanks of capacity 10000 L in camp 2 and 3 respectively) which are filled by Municipality supplied tankers. The water is filtered through RO process and supplied for drinking and domestic purposes. During site visit was inferred the quality of water is testing prior to supply for drinking water and the reports were displayed in notice boards.

UCC obtains power supply for labour camps from Baghdad Municipality, however due to frequent disruption in Municipal supply, DG Sets of 625 KVA are installed in each labour camp and diesel is also stored in tankers of capacity 10000 L each.

There is sewage disposal system inbuilt in the rented buildings used for labour camps and the sewage pipelines are directly connected to the Municipality sewage underground drains. However, for domestic waste, private third-party vendors have been deployed who collect the waste from each labour camp on daily basis and dispose of in the Municipal landfills. However, no contract signed between UCC, and third-party vendors was made available for review.

There is no provision of kitchen in the labour camps, cooking is strictly prohibited and food for the workers are supplied three times in a day by third party caterers deployed at site. UCC also provided transportation facilities for commuting the workers from labour

camp to project site and vice versa. Reportedly the expenses for labour accommodation, food, transportation is borne by UCC over and above the salary of the workers.

There is one help desk in each labour camp where workers can lodge grievances—commonly related to food quality or quantity, water supply disruptions, salary payments, or delays in ATM card issuance—which are recorded and typically resolved by the camp boss, and reportedly the unresolved issues are escalated to the camp manager. If there are any conflicts or unrest among workers, it is mediated and resolved mutually within the camp by the respective camp boss.

2.19.5 Major Equipment

The major equipment used during construction phase involves various machinery and equipment which are deployed at the project site to support excavation, material handling, concreting, lifting, and other construction-related activities. The deployment and operation of these equipments are temporary in nature and are managed in accordance with project-specific HSE procedures to minimize environmental and safety risks. Details of the major equipment used at the site is provided in the following ***Table*** 2-17.

Table 2-17: Major construction Equipment used at site

Equipment	Quantity	Purpose
Excavator	4	Used for excavation, trenching, earth removal, and foundation works during construction activities.
Mobile Crane 50 Ton	2	Utilized for lifting and positioning medium-weight construction materials and equipment.
Mobile Crane 75 Ton	1	Employed for heavy lifting operations, including structural components and large equipment installation.
Flatbed	6	Used for transportation of construction materials, machinery, and prefabricated components within and outside the site.
Backhoe	3	Used for digging, loading, backfilling, and small-scale excavation works.
Tele handler	3	Utilized for lifting, moving, and placing materials at varying heights and distances.
Boom Truck	2	Used for lifting and transporting materials to elevated locations with precision.
Bobcat	3	Employed for material handling, site cleaning, leveling, and confined-area operations.
Forklift 3 Ton	3	Used for lifting and transporting light to medium loads within storage and construction areas.
Forklift 4 Ton	2	Utilized for handling medium-weight materials in warehouses and site premises.
Forklift 7 Ton	1	Employed for heavy material handling, including pallets, equipment, and construction supplies.
Van	6	Used for transportation of site personnel, tools, and light materials.
Tower Crane	2	Utilized for vertical lifting and movement of construction materials at significant heights.
Concrete Mixer	4	Used for mixing concrete uniformly for construction works.
Concrete Pump	2	Used for continuous pumping of concrete or water at fixed locations.
Stationary Pump	2	Utilized for safe access to elevated work areas for installation, maintenance, and finishing activities.
Scissor Lift	3	Used for transportation and disposal of excavated soil, debris, and construction materials.
Tipper Truck	8	Used for lifting and transporting light to medium loads within storage and construction areas.

Source: Estithmar

2.20 Green and Energy-Efficient Initiatives

The project is designed to optimize the use of natural daylight as part of its green and energy-efficient initiatives. The rooms proposed to be provided with adequate balconies and sizable windows, enabling ample penetration of natural light and thereby reducing dependence on artificial lighting during daytime hours. In addition, the central lobby is crowned with a skylight that facilitates daylight illumination of the upper ground central areas. The external façade design of the building further enhances daylight entry, contributing to improved indoor visual comfort and overall energy efficiency during the operational phase.

3 Applicable Legislative, Regulatory and Administrative Regime

The following reference framework is applicable to the Project:

- Applicable environmental and social regulations and policies
- International Standards including:
  - IFC Performance Standards on Environmental and Social Sustainability (2012)
  - IFC/World Bank General EHS Guidelines (2007)
  - IFC Environmental, Health, and Safety Guidelines for Tourism and Hospitality Development, April 2007

3.1 Relevant National Environmental Laws, Regulations and Policies

The relevant Iraqi laws and regulations to this project are presented in the *Table* 3-1. The presented regulations are considered relevant since the proposed activities are expected to have potential impacts and risks on the aspects linked to these regulations.

Table 3-1: Policies, Laws and Regulations in Iraq relevant to the Project

Legislation No	Year	Pre-Construction	Construction	Operation	Description	Applicability
Environmental Laws						
Law No. 27 Protection and Improvement of Environment Law[5]	2009	√	√	√	The law focuses on protecting and enhancing the environment by addressing existing environmental damage as well as preventing potential future impacts. It requires the preparation of an Environmental Impact Assessment (Article 18) for any new development project in the country. The law covers a wide range of environmental aspects, including regulation of air emissions and noise levels, control of wastewater discharges, protection of soil resources, conservation of biodiversity, and management of hazardous wastes. It also establishes strict provisions governing the import, export, production, use, and disposal of chemicals. Furthermore, the law sets out penalties for violations of its requirements.	As per the law, the project proponent is required to identify, assess, and mitigate potential adverse impacts, including but not limited to air emissions, noise, solid and hazardous waste generation, soil disturbance, wastewater discharge, and potential impacts on natural resources and surrounding communities. The legislation sets standards for pollution prevention, resource conservation, and environmental quality, which must be integrated into construction planning and operational management of the hotel. The project however has not prepared EIA report as required in Article 18. Based on consultations with site representatives, it was noted that an Environmental Impact Assessment (EIA) is generally not considered a mandatory requirement for the hotel sector in Iraq. However, as per the applicable national environmental legislation referenced above, EIA approval is mandated for development projects, and no specific sectoral exemption for hotels is explicitly stated. It was further observed that the project proponent has not obtained a No Objection Certificate (NOC) or formal exemption from the competent authority for not undertaking an EIA assessment.
Law No. 37 Investment Law of Iraq[6]	2008	×	√	√	It defines the institutional structure as well as the roles and responsibilities of the Ministry, giving it the mandate to oversee environmental protection, natural resource management, and public health in the environmental context.	The law requires investors to obtain all necessary permits and approvals, including environmental clearance based on an ESIA, prior to project implementation. It mandates compliance with national environmental, social, health, and safety regulations throughout construction and operation to ensure that investment projects do not cause harm to the environment, natural resources, or local communities.

[5] https://moen.gov.iq/files/TableFiles/4142.pdf

[6] https://moen.gov.iq/files/TableFiles/%D9%82%D8%A7%D9%86%D9%88%D9%86_%D9%88%D8%B2%D8%A7%D8%B1%D8%A9_%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D8%A9_37_%D9%84%D8%B3%D9%86%D8%A9_2008.pdf

Legislation No	Year	Pre-Construction	Construction	Operation	Description	Applicability
Law No. 3 Public Health Law of Iraq	1997	×	√	√	This law was annulled by the Protection and Improvement of the Environment Law (Law No. 27 of 2009). However, the regulations and instructions issued under the 1997 law will continue to apply, provided they do not conflict with the 2009 law, until they are updated or officially revoked.	During the construction phase, the project is required to minimize dust, noise, improper waste disposal, and any unsanitary worksite practices. During operation, the hotel must comply with public health standards related to potable water supply, food safety, wastewater management, pest control, accommodation hygiene, and overall sanitation.
Law No. 76 Environmental Protection and Improvement	1986	×	√	√	Law concerning environmental protection and enhancement, which was later replaced by Law No. 3 of 1997 on environmental protection and improvement.	It empowers environmental authorities to evaluate project locations, set environmental protection conditions, and require mitigation measures to avoid adverse impacts on air, water, soil, and public health.
Waste Laws						
National Instruction No. 3 Hazardous Waste Management	2015	×	√	√	Hazardous waste is managed in line with National Instructions No. 3 of 2015 on hazardous waste management. However, they may not undergo any disposal process that could result in recovery, recycling, or reuse, and they cannot be moved across international borders except in compliance with the Basel Convention. In addition, contaminated sites are identified for rehabilitation, along with the development of appropriate legislation for managing POPs.	It is directly applicable to the hotel's construction and operation phases, as it regulates the handling, storage, transportation, and disposal of all hazardous materials and waste generated by project activities. During construction, the instruction covers hazardous substances such as paints, solvents, adhesives, fuels, oils, chemical cleaners, and contaminated packaging or rags. During hotel operation, it applies to hazardous waste streams including used oils from DG sets, chemicals from laundry and housekeeping, expired chemicals, electronic waste, and medical-type waste from first-aid facilities. The instruction mandates segregation, labelling, safe storage, use of licensed transporters, and disposal at authorized facilities, along with maintaining records and preventing any release that could harm soil, water, or public health.
Instruction No. 2 Instructions on Environmental Protection from Municipal Waste	2014	×	√	√	The instruction is intended to safeguard the urban environment through proper waste management practices, including the handling of hazardous waste.	It is applicable to the hotel as it regulates the handling of solid waste or municipal waste generated on-site. The project must ensure that waste from construction activities and from hotel operations—including guest rooms, kitchens, restaurants, and common areas—is properly segregated, stored, collected, and transferred to authorized municipal disposal systems.
Law No. 29 Regulate the regions for collecting debris (landfills)	2009	×	√	√	Regulates designated debris collection sites, serving as an update to Regulation No. 67 of 1986.	It is applicable to the project as it mandates the prevention of activities that may cause environmental pollution or pose risks to human health. For both construction and operational phases, the hotel must ensure proper management of wastewater, solid waste,

Legislation No	Year	Pre-Construction	Construction	Operation	Description	Applicability
						noise, and air emissions, along with maintaining hygienic conditions across all guest areas, kitchens, staff facilities, and service zones.
Instruction No.4 Safety Instructions for the Storage and Handling of Chemicals	1989	×	√	√	The instruction covers requirements such as proper labeling, secure storage conditions, safe handling procedures, and the need for appropriate protective equipment. Its aim is to ensure that chemicals are managed responsibly across industrial, commercial, and governmental sectors, thereby safeguarding public health and environmental safety.	It governs the safe storage, handling, and management of chemical materials — a requirement that is relevant both during construction (e.g. paints, solvents, cleaning chemicals, maintenance materials) and operation (e.g. housekeeping chemicals, maintenance chemicals, laundry detergents, disinfectants). Under this instruction, all chemical materials used on site must be properly categorized, stored in designated containers, labelled correctly, and handled according to safety procedures.
Directive Number 67 Garbage Collection Zones Law no. 67 of 1986	1986	×	√	√	Regulation of Debris Collection Sites – debris must be disposed of only in locations with stable geological conditions, while avoiding areas that are environmentally sensitive or pose risks to groundwater, surface water, or fragile ecosystems.	This directive is applicable during both construction and operational phases. During construction, all debris, packaging, and other solid waste must be collected, segregated, and disposed of according to the directive. During operation, municipal solid waste from guest rooms, restaurants, kitchens, and public areas must be properly managed through approved municipal channels.
Noise Laws						
Law No. 41 Noise Control Law	2015	×	√	√	Noise Protection and Control – This law sets the allowable noise thresholds for both daytime and nighttime, specifically outlining limits for industrial, commercial, and residential zones.	This law is applicable during both construction and operation phases. During construction, the hotel must ensure that noise level at the site is within the prescribed limits. Client to take adequate measures like acoustic enclosures for noise emitting machinery, regular maintenance of equipment, noise monitoring, etc. to ensure noise levels are within the prescribed limits.
Air Quality Laws						
Regulation No. 4 Protection of Ambient Air Quality	2012	×	√	√	Protection of Ambient Air Quality – This regulation is designed to safeguard outdoor air quality and manage pollution sources. It requires all facilities that release air pollutants to comply with national emission limits and to use monitoring systems to verify adherence. It also bans the burning of any type of waste indoors, in open areas, near residential neighborhoods, or close to water bodies.	For the project, this regulation is applicable during both construction and operational phases. During construction, activities such as excavation, material handling, and vehicle movement must implement dust and emission control measures to comply with the regulation. During hotel operations, emissions from generators, HVAC systems, kitchens, and other equipment must be managed to maintain acceptable air quality standards.

Legislation No	Year	Pre-Construction	Construction	Operation	Description	Applicability
Clean Air Act	1979	×	√	√	The Air Quality Standards establish limits based on medium-term policy objectives that account for economic efficiency, practical implementation, technical feasibility, and realistic timelines, and these limits generally align with WHO guideline values.	Applies to the project by regulating air emissions and ensuring ambient air quality standards are maintained. During the construction phase, the project must implement measures to control dust, exhaust emissions from machinery and vehicles, and other airborne pollutants. During the operational phase, the hotel must manage emissions from generators, HVAC systems, kitchens, and other equipment to prevent air pollution.
Water and Wastewater Laws						
Law no. 50 Ministry of Water Resources	2008	×	√	√	The Law provides for the establishment of the Ministry of Water Resources and sets out the legal and technical framework necessary to institutionalize water resource management in the country.	This law is applicable during both construction and operational phases to ensure compliance with zoning regulations, building codes, structural safety, and site layout requirements. Hotels must adhere to the approved building permits, construction standards, setbacks, and permissible land-use provisions as prescribed under this law.
Law no. 2 Water Resource Conservation Law	2001	×	√	√	Effluent discharge into public water bodies is restricted unless it meets the standards and specifications established by the Environment Protection and Improvement Directorate (EPID). The EPID is further empowered to set environmental requirements governing the quality of public water and the quality of wastewater released to public water bodies, sewage systems, or stormwater networks.	This law is applicable if the construction or operational area is located near or within historically or archaeologically sensitive zones. The project must ensure that no construction activities disturb protected sites, and any discovery of cultural artifacts during excavation must be reported to the relevant authorities.
Law no. 89 Public Health Law	1981	×	×	√	The Law establishes requirements for ensuring the safety of drinking water and sets the corresponding quality standards.	This law is applicable during the operational phase to ensure that all water supplied to guest rooms, kitchens, restaurants, staff areas, and public facilities meets national potable water standards. The hotel must implement proper water treatment, storage, and distribution systems to prevent contamination, regularly monitor water quality, and ensure compliance with the law.
Instruction No.25 Preservation of Rivers and Public Waters from Pollution	1967	×	√	√	The Regulation for the Protection of Rivers governs the discharge of wastewater and outlines physical, biological, and chemical criteria for maintaining water quality. It also includes provisions aimed at safeguarding public water bodies from pollution.	It is applicable during both construction and operational phases. During construction, the hotel must prevent runoff, sedimentation, and discharge of construction materials, chemicals, or debris into nearby rivers or public water sources. During operation, wastewater from the hotel operations must be treated and disposed of in compliance with the instructions to prevent contamination of surface water.
Cultural Heritage Laws						

Legislation No	Year	Pre-Construction	Construction	Operation	Description	Applicability
Law No. 55	2002	√	×	×	The Antiquities and Heritage Law establish requirements for the protection of archaeological, heritage, and historical sites. Under the law, project proponents for public industrial, agricultural, housing, and planning developments including road construction must obtain written approval from the antiquity's authority prior to project preparation or modification. The law further specifies that, in cases where a priority development project overlaps with an archaeological site, the antiquities authority is responsible for conducting excavation works. These excavations are to be carried out within an appropriate timeframe and financed by the implementing agency, with associated costs incorporated into the project's budget in advance.	As per this law, Client would need to obtain NOC from Antiquity's authority prior to construction phase. For this project there are no cultural structures present within project site.
Social Parameters: Labor Laws						
Labor Law No. 37	2015				Described in Section 3.2.1.1	
Labor Code	27 July 1987		√	√	The Labor Code of Iraq, enacted on 27 July 1987, serves as the principal legislation regulating employment relations in the country. It establishes comprehensive rules on employment contracts, working hours, wages, overtime, leave entitlements, and termination procedures. The Code guarantees workers' rights to organize and join trade unions, sets standards for occupational safety and health, and provides mechanisms for dispute resolution between employers and employees. It also addresses the employment of foreign workers, requiring permits and compliance with local labor standards, and mandates social security coverage for eligible employees. Designed to protect workers while balancing employer obligations, the 1987 Labor Code remains a cornerstone of Iraq's labor law framework, though later amendments and reforms have updated certain provisions to align with international labor standards.	Law No. 37 of 2015 in Iraq, which governs labor rights and occupational safety, is highly relevant to the projects, as it sets out the legal framework for worker protection, employment conditions, and workplace safety. For construction sites—where labor-intensive and high-risk activities are common—the law requires employers to ensure safe working environments, provide necessary personal protective equipment, regulate working hours, and prevent occupational hazards. It also mandates that contractors respect labor contracts, pay wages on time, and adhere to standards for health and safety training. Compliance with Law No. 37 of 2015 is therefore critical for construction projects to protect workers' rights, minimize accidents, and meet legal obligations under Iraqi labor legislation. Thus, Client and associated contractors need to comply with this law related to wages, working hours, leaves and other social benefits.
Law no 39	1971		√	√	Promulgated on March 9, 1971, Law No. 39 created Iraq's foundational social insurance system for private, mixed, and cooperative sector workers, mandating participation in a state-managed pension fund overseen by the Ministry of Labor and Social Affairs. It requires employers to deduct a 5% contribution from employees and also contribute toward retirement benefits. The law grants insured workers' rights to old-age pensions (typically at age 60–65 with a minimum of 15–20 years of contributions), as well as disability, death, maternity, and medical coverage administered through a council and medical committee system. By law, nearly all private-sector employees must be enrolled, including those in international organizations—except diplomats and public servants.	As per this act, the Client and its Contractors are obligated to deduct share from workforce's salary/wage and also provide the same share to create pension funds.

Legislation No	Year	Pre-Construction	Construction	Operation	Description	Applicability
Social Security and Pension Law	2023		√	√	Enacted via Official Gazette No. 4734 on 28 August 2023 and effective 1 December 2023, Law No. 18 overhauls Iraq's social protection system for private, mixed, public non-civil employees, informal workers, and self-employed individuals. It establishes five branches: retirement/death, work injuries/illness, unemployment, voluntary old age/informal workers, and health insurance/maternity services. Contribution rates remain at 17% overall (5% worker, 12% employer), with an additional 8% funded by the government for Iraqi workers or by employers in the private/mixed sectors (oil sector still pays 25%). Crucial expansions include increased retirement ages (men 50–63, women 50–58 depending on years of service), unemployment benefits, optional service-purchase for shortfalls, and eligibility for informal sector workers. The law introduces new registration fees—2 million IQD (or 750,000 IQD if registered earlier) per foreign employee—and both fines and late-payment penalties to ensure compliance. Implemented with ILO support, the law addresses gaps in Law No. 39 of 1971 by broadening coverage, strengthening enforcement, and formalizing traction for informal, self-employed, and migrant workers.	The Social Security and Pension Law of 2023 in Iraq is applicable to this project as it mandates the registration and protection of all workers, including temporary and contract labor commonly employed in the construction sector. Under this law, employers are required to provide social security coverage, ensure regular contributions for pensions, workplace injury insurance, and other worker benefits. For construction projects—where occupational risks are high—the law reinforces employer obligations to maintain safe working conditions, report incidents, and guarantee compensation for work-related injuries. Compliance is therefore essential for contractors and developers, both to meet legal requirements and to safeguard the welfare and rights of construction workers throughout the project lifecycle. Thus, Client and associated contractors need to comply with this law related to social security benefits.
Instruction No 5	1985	√	√	√	The Instruction focusses on the employment of Iraqi, Arab, and foreign companies or their agents working in Iraq, and its amendments. As per this Instruction, any foreign company employing ≥ 1 worker in Iraq: must notify the Department of Labor & Social Affairs upon commencement. Any foreign company deploying workforce would need to notify MoLSA with details such as company name, nationality, address, business nature, incorporation certificate, the name of Governorate within which the branches of the company are situated, and detailed employee roster (including names, nationalities, start dates, wages, roles etc.). From Labor department, the application is transferred to Employment and Inspection section where detailed inspection is carried out and detailed inspection report is prepared, based on which the Labor/Social Affairs Dept. issues inclusion decision. If no objection is filed within 7 days, decision is final. Companies must contribute to social security per applicable laws. After inspection, companies are included in the social security system and must contribute accordingly.	As reported, there would be around 2500-3000 workforce deployed during construction phase, and further good number of workforces will be deployed during operation (500 to 700). Hence as per Instruction No 5 of 1985, Any foreign company deploying workforce would need to notify to MoLSA with details such as company name, nationality, address, business nature, incorporation certificate, the name of Governorate within which the branches of the company are situated, and detailed employee roster (including names, nationalities, start dates, wages, roles etc.) and once approved the company shall be enlisted within social security system and would be bound by the same.
Regulation No 30	1973		√	√	Regulation No. 30 of 1973 establishes the legal framework for non-Iraqis performing work or practicing trades in Iraq. It requires all foreign companies or their agents operating in Iraq to notify the Ministry of Labour and Social Affairs before commencing work, providing detailed information about the company and its employees. Non-Iraqi workers, particularly non-Arab foreigners, must obtain a work permit from the Ministry prior to starting employment, while Arab nationals have a 30-day grace period and Iraqi nationals must be registered within 10 days. The regulation enforces workforce localization by mandating quotas—originally	As understood Estithmar Holding is a foreign concern which is establishing and will operate a hotel in Baghdad. Hence as per this law, the Client and any other Contractor's company of foreign origin would need to obtain work permit from Ministry of Labour and Social Affairs before commencing work, providing detailed information about the company and its employees.

Legislation No	Year	Pre-Construction	Construction	Operation	Description	Applicability
					two Iraqi employees for every foreign worker, later updated to stricter ratios under subsequent laws. Employers must formalize contracts in writing, register workers for social security, and cover repatriation and related benefits. Violations, such as employing foreigners without permits or failing to meet quotas, can result in fines and legal penalties. These provisions aim to prioritize Iraqi labor, ensure proper oversight of foreign employment, and safeguard workers' rights, forming the basis for later labor laws and localization policies.	
Law No. 52	2017		√	√	Private Security Company Law No. 52 of 2017 The law regulates private security companies (PSCs) — that is, companies (Iraqi or foreign-branch) that provide security or protection services (guards, armed or unarmed security, asset protection, escort, site security, etc.) to individuals or organizations in Iraq in exchange for payment. Under the law, no private security company may operate legally without first obtaining an "operational license." For Iraqi companies, the license is granted upon application reviewed and approved by the Ministry of Interior (MoI), along with oversight by a newly established regulatory body under MoI called the Directorate of Private Security Companies Affairs. For foreign security-company branches, granting a license is more restricted: such branches may be licensed only under "absolute necessity" and require higher-level approval (e.g. from the Council of Ministers) upon MoI recommendation.	As understood Private security will be deployed during construction and operation phases respectively. The Client needs to ensure that it is deploying Private Security Guard companies who have obtained 'operational licenses under Private Security Company Law.
Land and Resettlement						
Law No. 43	1971	√			Law No. 43 of 1971 established Iraq's modern property registration system, requiring all real estate transactions—such as ownership transfers, mortgages, and zoning changes—to be officially registered with the Real Estate Registration Directorate for legal validity. It introduced cadastral mapping, standardized property records, and decentralized registration offices under the Ministry of Justice. The law classified land types (private, state-owned, charitable endowments) and set rules for conversion and documentation. Amendments in the 1980s strengthened enforcement by mandating registration of previously unrecorded parcels, waiving fees, and creating verification committees, while later regulations standardized forms and urban re-registration procedures. Article 151 permits Iraqi and foreign companies to register property based on corporate approval. Overall, the law and its amendments aimed to secure property rights, ensure transparency, and modernize Iraq's land administration system.	The project is being developed on government land hence as per Law no 43 of 1971, the government land identified for the project has to be transferred to the name of project proponent by Baghdad municipality. Hence this law is applicable

3.2 Relevant National Social Laws, Regulations and Policies

3.2.1 Labor Laws

3.2.1.1 Law No. 37 of 2015

Iraq introduced Law No. 37 of 2015 (the Iraqi Labor Law) as the primary legislation regulating employment relationships across most of the country. At present, there are no identified reforms under consideration. Alongside this law, relevant government ministries may issue additional instructions or regulations that further shape employment requirements. The law provides a comprehensive framework addressing all key aspects of employment, including:

- The definition of workers.
- Hiring and termination.
- Health and safety.
- Leave.
- Wages.
- Collective bargaining; and
- Avenues for complaints and redress.

Law No. 37 of 2015 establishes the statutory framework governing the rights, responsibilities, and obligations of employers and workers in Iraq. The law, comprising 18 chapters and 171 articles, is designed to protect and support both the workforce and employers, facilitate worker training and job placement, guide employers in hiring suitable personnel, safeguard trade unions and workers' associations, and regulate foreign labor. The law distinguishes between Iraqi and foreign workers but requires all workers to possess complete and valid documentation to be legally employed. It does not differentiate between employees and contractors, instead applying broadly to all individuals working under the supervision of an employer in exchange for wages. Additionally, the law differentiates between permanent and fixed-term employment and outlines the necessary conditions to ensure that fixed-term contracts do not unintentionally convert into permanent contracts.

The Iraqi Labor Law, under Article 6 of Chapter 3, stipulates that the minimum legal age for employment is 15 years. Additionally, Iraq is a signatory to the 1989 International Convention on the Rights of the Child, which classifies all individuals under 18 years of age as children who are entitled to special protection and care.

Chapter 10 of Labor Law No. 37 of 2015 outlines specific protections for female workers. The chapter includes provisions on ensuring gender equality in wages, recruitment, and working conditions. It requires employers to provide onsite childcare facilities and grants 14 weeks of paid maternity leave, with the possibility of extending leave for up to one year without pay. Employers are obligated to reinstate female workers to their previous or an equivalent position upon their return. The law also prohibits sexual harassment and any conduct that may create an intimidating, hostile, or offensive environment during job search, vocational training, recruitment, or employment.

- In Iraq's Labor Law, Freedom of Association is indeed addressed within the part that deals with collective employment relations which is primarily recognized through labor rights in the New Labor Law (No. 37 of 2015) and the Iraqi Constitution, which collectively protect the rights of workers to form unions, bargain collectively, and engage in association. This applies to employees in the private sector during the operational phase. However, public sector workers are governed by separate civil service laws, which have historically restricted unionization. The Trade Union Organization (TUO) is the section within Iraq's labour law framework that directly addresses freedom of association. The TUO appears as Chapter 1 under Part II – Collective Employment Relations. This chapter outlines the legal framework governing the formation, registration, operation, and rights of trade unions—making it the core legal reference for freedom of association in Iraqi labor legislation.

  The key aspects of FoA under Iraqi Labor law are tabulated as:
  - Fundamental Right: The 2015 Labor Law safeguards the freedom of work and prohibits restricting the right to work, including recognizing the right to form trade unions and bargain collectively.
  - Constitutional Protections: The 2005 Constitution guarantees various personal liberties, including freedom of speech, expression, and assembly, though these are subject to restrictions based on "Islamic morality".
  - Protection Against Discrimination: The law prohibits discrimination in employment, vocational training, and recruitment.

- International Standards: The Iraqi Labour Law explicitly aims to implement international labor standards regarding association and the elimination of forced or child labor.

3.2.1.2 Ratification of the International Labor Organization (ILO) Convention 183 - Protection Convention, 2000

In October 2019, Iraq ratified the ILO Maternity Protection Convention, 2000 (Convention 183). The Convention extends maternity protections to all employed women, including those in casual, temporary, part-time, subcontracted, home-based, self-employed, and family-based work arrangements—beyond the industrial and commercial sectors covered by earlier conventions. It prohibits pregnant or breastfeeding workers from undertaking tasks that may endanger their health or that of their child. The Convention also requires employers to adopt measures ensuring that pregnancy or maternity status does not result in discrimination against employment.

3.2.2 Occupational Health & Safety

3.2.2.1 Instructions No. 12 of the year 2016: Occupational Health and Safety

These instructions outline the Occupational Health and Safety (OHS) procedures that must be followed.

3.2.2.2 Law No.37 of 2015: Labor Law

The regulation addresses the protection of employee health and safety and designates the National Center of Occupational Health and Safety as the authority responsible for planning, monitoring, and inspecting the implementation of occupational health measures to ensure workers are safeguarded against job-related illnesses and injuries.

3.2.2.3 Instruction No.12 of 2016

The instruction provides for the establishment of an Engineering Inspection Committee (EIC) within the National Center for Occupational Health and Safety. The EIC is tasked with fulfilling the objectives outlined in Article 115(2) of Law No. 37 of 2015. Its responsibilities include inspecting steam boilers, pressure vessels, electrical elevators, and various lifting equipment, as well as issuing annual inspection certificates.

3.2.2.4 Law No. 6 of 1988 concerning the National Commission for Occupational Hygiene and Safety, governing the enforcement of OHS regulations

The law sets out provisions for conducting workplace inspections and issuing inspection reports. It defines employer obligations related to occupational health and safety, as well as the corresponding duties of workers in maintaining OHS compliance.

3.2.3 Human Rights

The Constitution of Iraq, adopted by the Transitional National Assembly, guarantees a range of fundamental rights to all citizens. These include equality and equal treatment before the law (Article 14), fair judicial procedures (Article 19(6)), participation in public affairs (Article 20), and the right to work (Article 22). It also provides protections for the family, including safeguards for motherhood, childhood, old age, and the prohibition of child labor and domestic violence (Article 29). The Constitution explicitly prohibits discrimination on the basis of gender, race, ethnicity, origin, color, religion, belief, opinion, or socioeconomic status. Additionally, it ensures social and health security for all Iraqis, with particular emphasis on women and children, guaranteeing access to basic living standards, income, housing (Article 30), healthcare (Article 31), support for persons with disabilities (Article 32), and education (Article 34).

The Constitution additionally states that no legislation may be enacted that is inconsistent with democratic principles (Article 2(1)). Iraq is a party to eight of the nine core international human rights treaties, including the International Covenant on Civil and Political Rights (ICCPR), the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), the Convention on the Rights of the Child (CRC) and its Optional Protocol on children in armed conflict, the International Convention for the Protection of All Persons from Enforced Disappearance (ICPPED), and the Convention against Torture (CAT). The country also maintains a Penal Code—Law No. 111 of 1969—which outlines penalties for various offences, including capital punishment, life imprisonment, fixed-term imprisonment, penal servitude, detention, fines, and confinement to facilities for young offenders or reformatories.

3.3 Applicability of IFC Performance Standards

Applicability of the IFC Performance Standards (PS) to the Project are presented in *Table* 3-2.

Table 3-2: Applicability of IFC Performance Standards to the Project

Sr. No.	IFC Performance Standards	Applicability/ Compliance/Details
1	PS 1: Assessment and Management of Environmental and Social Risks and Impacts	**Applicable** This PS aims to assesses the existing social and environmental management systems and to identify the gaps with respect to their functioning, existence, and implementation of an environmental and social management plan (ESMP), a defined EHS Policy, organization chart with defined roles and responsibilities, risk identification and management procedures as well as processes like stakeholder engagement and grievance management. This ESIA is being conducted as part of the "identification of risks and impacts" requirement under the IFC PS 1. The management measures prescribed in this ESIA report will be implemented for mitigation of impacts identified.
2	PS 2: Labor and Working Conditions	**Applicable** This PS is guided by several international conventions and instruments on labour and workers' rights. It recognizes that the pursuit of economic growth through employment creation and income generation should be accompanied by protection of fundamental rights of workers. The PS covers following themes: human resource policy and management, workers' organization, non-discrimination and equal opportunity, retrenchment, protecting the workforce and occupational health and safety. This PS helps to assess the status of the employees and workers at the Project as well as any contractors. The project activities involve hiring of on-role employees of Project Proponent and contractual workforce including skilled, semi-skilled and unskilled labourers during the construction phase. Further there would be deployment of on-role as well as off-role workforce during operation of the hotel. As per information made available by Project proponent, there is requirement of around 2500-3000 workforce deployed by EPC Contractor/s (Urbacon Trading & Contracting) and sub-contractors etc during construction phase. Presently construction have started and there are three labour accommodation camps available at site accommodating around 1800 workers. Further, there are employees of Project Proponent, Estithmar Properties W.L.L and also site representatives of Design & Supervision Consultant Dara, Project and Designment Management team of Internation Design & Consultant Company (IDCC) etc. The project proponent would have to ensure that the clauses referred in the human resource policy covering key aspects related to labour such as working time, remuneration, worker's organization, non-discrimination and equal opportunity, retrenchment, protection of workforce and occupational health and safety are implemented for the employees and also for the contractual workers and the same are complied. During site visit it was inferred that the Corporate HR Policy and plan is applicable at site level aligning with Iraqi labour norms. The project will have to ensure compliance with this PS. Therefore, IFC PS 2 is applicable to the Project.
3	PS 3: Resource Efficiency and Pollution Prevention	**Applicable** PS-3 covers the use resources and materials as inputs and wastes that could affect human health. The objective of PS-3 is to avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities; to promote more sustainable use of resources, including energy and water, and to reduce project related GHG emissions. This PS will assess how Client intends to minimize pollution related impacts, what management plans and systems are in place, and what measures it plans to take to conserve and use resources more efficiently. The Project construction activities is anticipated to lead to increased fugitive dust emissions. The project activities also is anticipated to lead to increase in ambient noise level during the construction phase and operation of hotel facility which may impact the nearby community or sensitive receptors in the study area. Furthermore, Project is utilizing water during construction phase for civil work which may pose potential stress on existing common water resources. Therefore, PS 3 is applicable to the Project. Also, the project will generate waste during both the construction and operational phases, which must be managed effectively to minimize environmental impacts.
4	PS 4: Community Health, Safety & Security	**Applicable** This PS-4 anticipate and avoid adverse impacts on the health and safety of the affected community during the project life from both routine and non-routine circumstances. It also requires ensuring that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the affected Communities. Key areas of compliance screened under PS-4 includes infrastructure/ equipment safety, hazardous material safety, natural resource issues, exposure to disease, emergency preparedness and response, and security personnel requirements. The project would affect the health and safety of the communities adjacent to its boundary during construction phase. The project involves transportation of construction material and movement of construction machinery which increases the traffic in the area and may pose safety risks to the nearby communities. There are various government buildings including Embassies situated within 2 km of the project location. There is an arterial road in vicinity of the project site and the hotel is situated at the corner of the intersection of 2 major arterial roads. Further some important and high-secured government buildings such as Prime Minister's Guest House, Soldier Monument, Iraqi Military Aviation Museum, Office of Independent High

Sr. No.	IFC Performance Standards	Applicability/ Compliance/Details
		Electoral Commissioner, Iraqi Parliament, Office of General Federation of Labour Unions, Ministry of Defence etc followed Office of Embassies of countries such as Egypt, United Kingdom, Netherlands etc are situated in close vicinity to project site. During construction phase, movement of heavy vehicles and construction materials may cause traffic congestion. Further during construction phase the construction activities may lead to disturbance to the nearby communities/government offices etc due to generation of noise. In addition, fugitive dust emission due to transportation, site clearance, construction work, may affect the nearby communities and the nearby government offices. Further during construction phase there will be huge influx of migrant labour (around 2500 to 3000 during peak construction periods) from various nations hence there may be risks related to sexual harassment and gender-based violence (Sexual Exploitation, Abuse and Sexual Harassment, SEAH) for the local community residing in vicinity to the labour camps. Given the project is situated in high security zone and free movement of civilians/ workers within the international zone is strictly prohibited the risk of harassment and gender related violence for local community residing in vicinity of project within international zone is low. An increase in traffic and the operation of DG sets during the operational phase are anticipated to have potential impacts on the local community. During operation phase there will be guests visiting from various nations hence posing risk to the local community (Within international zone), project proponent to implement strict security measures while onboarding guests to the hotels. There are chance of unethical tourism practices in hotels (drug abuse, commercial sex tourism, child trafficking, alcoholism etc to name a few), hence increasing risk of trafficking, child abuses thereby imposing threats to women/children from marginalised background. Further, there would workforce (men) deployed across nations thus there would be risk related to harassment and gender-based violence for local community residing in vicinity of the Guest houses of the workforce. Since the project is situated in Green Belt zone and is surrounded by various High-level government offices, security and safety also needs to be complied. Therefore PS 4 is applicable to the project.
5	PS 5: Land Acquisition and Involuntary Resettlement	**Not Applicable** PS-5 requires project proponents to anticipate and avoid, or where avoidance is not possible, minimize adverse social and economic impacts from land acquisition or restrictions on land use. The key themes covered under this are: compensation and benefits for displaced persons, consultation and grievance mechanism, resettlement planning and implementation, physical displacement, economic displacement. The PS-5 also prescribes private sector responsibility to supplement government actions and bridge the gap between governments assigned entitlements and procedures and the requirements of PS-5. The project is being developed within International Zone (erstwhile referred to as green zone) of Baghdad city. As understood, the International Zone is a fortified zone within Baghdad city which houses the High security Government offices, bureaucracies and Embassies. The project is being developed over 46.415 sq m of land. Reviewing historical Google Earth imagery, it was observed that the land parcel had trees and vegetation cover prior to the commencement of construction, with no residential structures present. The imagery further suggests that the land was not previously used for agricultural purposes. As reported by project representative the land was initially part of President Saddam Hussain's Palace which was later transferred to Baghdad Municipality. Based on review of historical imageries on Google earth few semi-permanent structures were observed and during site visit it was confirmed that those semi-permanent and temporary structures were porta-cabins and caravans owned by previous government regime in Iraq and post the land transfer these structures have been demolished and handed over to the project proponent. Based on information received from Client it is inferred that the project is being developed on Government owned land which has been transferred by Baghdad Municipality. There were initially 22 smaller plots of government land which have been merged together and transferred to the project proponent. Reportedly there was no economic/physical dependence on the land parcel and hence PS 5 is not applicable.
6	PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	**Not Applicable** Specific requirements of PS 6 include (i) protection and conservation of biodiversity (modified, natural, critical habitat, legally protected and internationally recognized areas, invasive alien species); (ii) management of ecosystem services; (iii) sustainable management of natural resources; and (iv) supply chain The Project Site, as well as the area of influence of the project, is within the Baghdad city area, i.e. within high habitats. The land use of the project site can be classified as commercial area. The analysis of Google earth imagery also reveals that, no dense vegetation was present within the project site before starting of construction, only few individual trees, concentrated mainly on the western boundary of the project site. Thus, no such significant impact on ecological environment is envisaged for the project activities. Therefore, PS6 is not applicable to the Project
7	PS 7: Indigenous Peoples	**Not Applicable**

Sr. No.	IFC Performance Standards	Applicability/ Compliance/Details
		This Performance Standard applies to communities or groups of Indigenous Peoples who maintain a collective attachment, i.e., whose identity as a group or community is linked, to distinct habitats or ancestral territories and the natural resources therein. PS-7 endeavour to ensure that the development process fosters full respect for the human rights, dignity, aspirations, culture, and natural resource-based livelihoods of Indigenous Peoples. Key themes covered under PS-7 are avoidance of adverse impacts, consultation, and informed participation, impacts on traditional or customary lands under use, relocation of IPs from traditional or customary lands, and cultural resources. The project is being developed on government land which has been transferred by Baghdad municipality. Therefore, PS 7 is not applicable to the project.
8	PS 8: Cultural Heritage	Not Applicable For the purposes of PS-8, cultural heritage refers to (i) tangible forms of cultural heritage; (ii) unique natural features or tangible objects that embody cultural values; and (iii) certain instances of intangible forms of culture that are proposed to be used for commercial purposes. The requirements of PS-8 apply to cultural heritage regardless of whether or not it has been legally protected or previously disturbed. Review of Google Earth Imagery indicates that no cultural heritage structures, and religious structures are present within land parcel where the hotel is being established. Hence IFC PS 8 is not applicable.

3.3.1 Other Relevant International Guidelines and Standards

- World Bank Group Environmental, Health and Safety (EHS Guidelines): These General EHS Guidelines are designed to be used together with the relevant Industry Sector EHS Guidelines which provide guidance to users on EHS issues in specific industry sectors. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. Application of the EHS Guidelines to existing facilities may involve the establishment of site-specific targets, with an appropriate timetable for achieving them. The applicability of the EHS Guidelines should be tailored to the hazards and risks established for each project on the basis of the results of an environmental assessment in which site-specific variables, such as host country context, assimilative capacity of the environment, and other project factors, are taken into account.
- Environmental, Health and Safety Guidelines for Tourism and Hospitality Development[7]: The Environmental, Health, and Safety (EHS) guidelines for tourism and hospitality developments emphasize sustainable resource use, pollution prevention, and safe operational practices. Projects should optimize energy and water efficiency, ensure proper wastewater treatment, and manage solid, food, and hazardous waste responsibly. Air emissions, noise, and odour must be controlled to minimize environmental impacts. Occupational health and safety measures include providing adequate training, PPE, fire and life safety systems, and ensuring structurally safe facilities. Community health and safety considerations focus on traffic management, sanitation, emergency preparedness, and maintaining a secure environment for both guests and nearby residents. Social aspects involve fair labour practices, a functional grievance mechanism, stakeholder engagement, and protection of local cultural and ecological resources.

3.3.2 Institutional Framework

The development and operation of a hotel facility in Iraq falls under the jurisdiction of several national and regional institutions responsible for environmental protection, urban planning, construction permitting, and sector-specific regulation.

3.3.2.1 Ministry of Environment (MoEn)

The Ministry of Environment (MoEn) of Iraq is the central authority responsible for environmental regulation and ESIA oversight. It reviews and approves environmental studies, sets pollution control standards, and monitors compliance during project construction

[7] https://www.ifc.org/content/dam/ifc/doc/2000/2007-tourism-hospitality-development-ehs-guidelines-en.pdf

and operation. The MoE works through specialized directorates covering air, water, waste, and biodiversity to enforce environmental laws and coordinate with other government bodies.

3.3.2.2 Ministry of Health (MoH)

The Ministry of Health (MoH) of Iraq is responsible for public health regulation, disease prevention, and healthcare service provision across the country. Its institutional framework includes directorates for environmental health, disease control, food safety, occupational health, and medical licensing. The MoH conducts inspections, monitors sanitation standards, and ensures compliance with public health requirements for facilities.

3.3.2.3 Ministry of Construction, Housing, Municipalities and Public Works (MCHMPW)

The Ministry of Construction, Housing, Municipalities and Public Works (MCHMPW) of Iraq oversees national policies and regulations related to urban planning, building construction, municipal services, and public infrastructure. The ministry is responsible for issuing construction permits, setting building codes, and managing land development plans. It supervises water supply and wastewater treatment systems, municipal waste services, and urban infrastructure projects.

3.3.2.4 Ministry of Water Resources (MoWR)

The Ministry of Water Resources (MoWR) of Iraq is responsible for the management, regulation, and protection of the country's water resources. Its mandate includes overseeing surface and groundwater systems, monitoring water quality, developing irrigation and drainage networks, and managing dams, reservoirs, and river infrastructure. The ministry allocates water to different sectors, ensures sustainable usage, and implements policies to mitigate water scarcity and pollution.

3.3.2.5 Ministry of Electricity (MoE)

The Ministry of Electricity (MoE) of Iraq is responsible for planning, generating, transmitting, and distributing electrical power across the country. Its mandate includes developing national energy policies, managing power plants and grid infrastructure, and ensuring reliable electricity supply to residential, commercial, and industrial sectors. The ministry also regulates energy demand, promotes efficiency measures, and oversees connections for new developments.

3.3.2.6 Iraq Board of Tourism

The Iraq Board of Tourism is the national body responsible for regulating, promoting, and developing the tourism sector in Iraq. Its role includes formulating tourism policies, issuing licenses for tourism facilities, and ensuring compliance with national tourism standards. The Board also oversees tourism planning, supports infrastructure development, and promotes Iraq's cultural and heritage sites to attract visitors.

3.3.2.7 Ministry of Labor and Social Affairs (MoLSA)

The Ministry of Labor and Social Affairs (MoLSA) of Iraq is responsible for regulating labor relations, enforcing labor laws, and overseeing occupational health and safety (OHS) across workplaces. Its key functions include setting employment standards, monitoring working conditions, managing labor inspections, and safeguarding workers' rights. MoLSA also administers social welfare programs, supports vulnerable populations, and provides guidance on employment, skills development, and workplace safety.

3.3.2.8 Ministry of Interior (MoI)

The Ministry of Interior (MoI) is the central Iraqi government body responsible for internal security, policing, civil law-enforcement, border control, public order, and related domestic security affairs. It supervises and provides administrative support for Iraq's non-military security forces, including police, traffic, border-enforcement, civil defense, and other internal-security units.

3.3.2.9 Governorates

Iraq is sub-divided into 18 Muhafada or governorates which are further broken down into districts or Qada. These are broken down into Nahia or sub-districts. The responsibility for the Nahia or sub-districts falls under the Qada (district) level of government. It generally works as follows:

- **Qada (District):** Each Qada is headed by a Qada Director (also sometimes called District Governor) who is appointed by the Governorate Council. The Qada Director is responsible for overseeing the administration of the Qada, which includes the Nahias within its boundaries.
- **Nahia (Sub-district):** Each Nahia has a Nahia Director who is responsible for the day-to-day administration of the sub-district. The Nahia Director is usually appointed by the Qada Director, though the exact process can vary

3.4 Status of Permits for the Project

Permitting status of the Project is detailed in **Table** 3-3:

Table 3-3 Status of Permits

Sl. No.	Authority	Brief Description	Action Date	Planned	Actual	Status
1.	Ministry of Communications (Iraq)	GSM - Land Lines	15-Oct-24	16-Oct-24		Telecom Company appointed, ongoing coordination
2.	Ministry of Oil (Iraq)	To get approval on the Gas (LPG)	15-Oct-24	16-Oct-24		Approved/ On going coordination with subcon & authority
3.	Ministry of Water Resources	NOC for drilling borewells	Not available	Not available	Not available	Approved
4.	Ministry of Labor and Social Affairs	Social Security for Iraqi and Foreign workforce	Not available	Not available	Not available	Under progress. Hence a regulatory gap during construction phase.
5.	PM Security Council	Security Permit	Not available	Not available	Not available	Reportedly obtained prior to land transfer. However, the document was not available for review.
6.	Ministry of Interior	Security Permit/Badge for operating in green zone	Not available	Not available	Not available	Reportedly obtained prior to land transfer. However, the document was not available for review.
7.	Ministry of Labor and Social Affairs	Valid work permit of foreign workers under Law No. 37 of 2015	Not available	Not available	Not available	Under progress. Hence a regulatory gap during construction phase.

Source: Estithmar and UCC

4 Environmental and Social Baseline Conditions

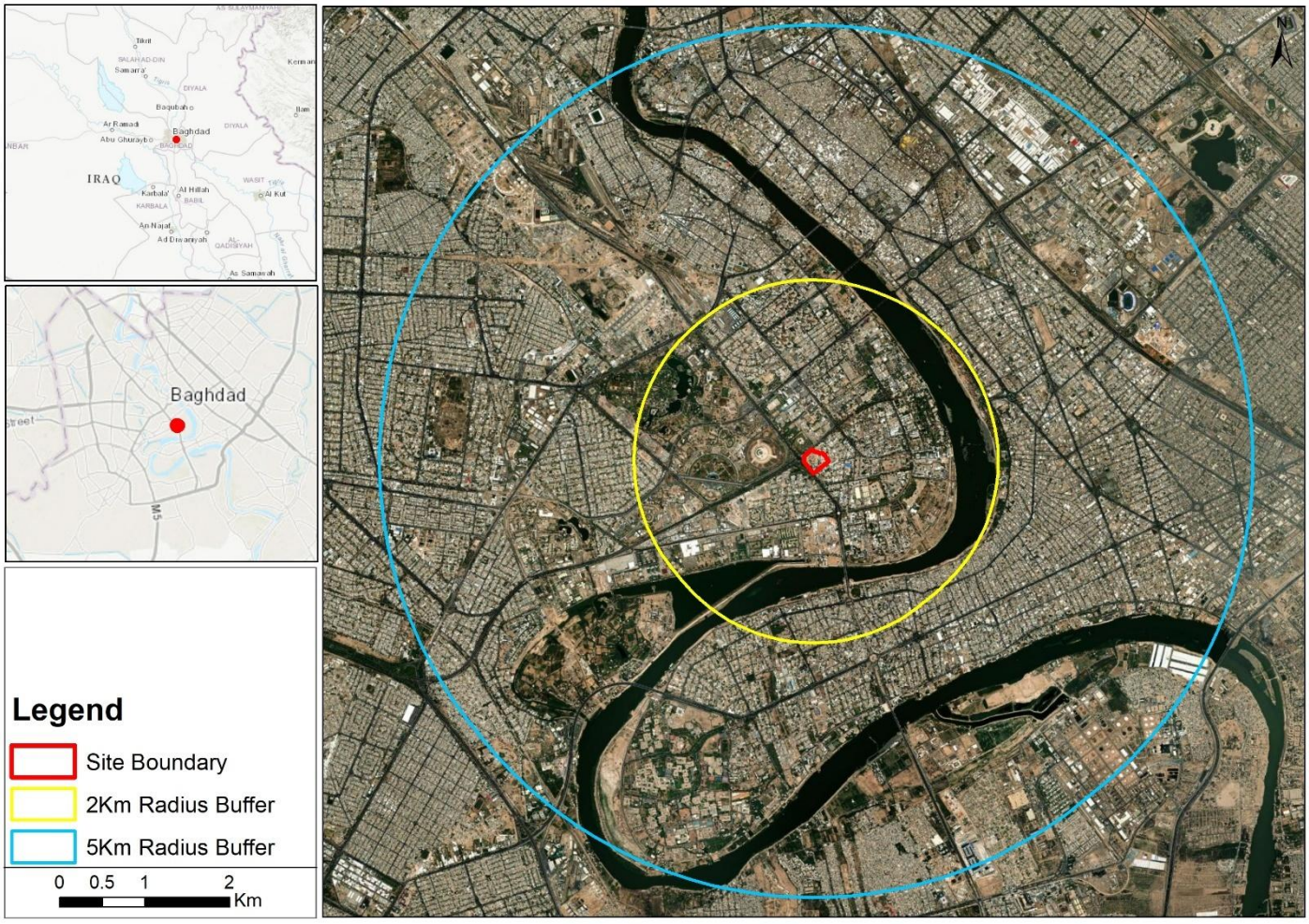
This section describes the existing environmental and social sensitivities and baseline conditions of the study area (as described below). The sensitivities include the relevant components of the physical, biological, and socio-economic environment. The purpose of describing the environmental and social sensitivities of the study area is to:

- To describe the environmental characteristics of the Project site and surrounding areas to identify key resources and receptors that will be affected by the Project;
- To determine if any nearby communities or structures will be affected by the Project establishment; and
- To understand the significance of the different habitats within the study area and its importance for sustaining species of conservation importance, in terms of providing habitat contiguity to the surrounding region and dependency of surrounding communities.

4.1 Study Area

The designated study area for the Hotel Baghdad, as shown in ***Figure*** 4-1, encompasses a 5 km radius around the project boundary. This area has been delineated based on the anticipated extent of project-related impacts, including those on-air quality, noise levels, water resources, soil quality, human settlements, cultural heritage sites, and the existing traffic network.

Figure 4-1: Identified Study area for the Project



Source: Deloitte ArcGIS Mapping

4.1.1 Project footprint area

The Project footprint is the area that may reasonably be expected to be physically touched by Project activities across all phases. The project footprint for the Project include land used for setting up the Project, storage area, site office, access road, storage of material and equipment.

4.1.2 Project area of influence (AoI)

The effects of the Project and Project activities on a particular resource or receptor will have spatial (distance) and temporal (time) dimensions, the scale of which is dependent on a number of factors, including:

- Nature of the activity
- Specific resource or receptor
- Sensitivity of that resource or receptor
- Whether the impact is direct or indirect (e.g., secondary effect)

The Project's AoI refers to the Project footprint area as well as to a larger area in its immediate vicinity. This includes the footprint of the associated project components, such as access road as well as the immediate surroundings that will see increased movement of vehicles, personnel, and land-use change. Most of the impacts will occur within the project footprint area as identified above. However, certain impacts can be further reaching in terms of extent.

The AoI considered for the Project with respect to the environmental, social, and ecological resources was based on the following reach of impacts:

- Ecological Parameters: Based on identified sensitivity during desk-based review and previous experiences, the Area of Influence for ecological assessment has been demarcated as,
    - Core Area: Within 500 m radius of the Hotel.
    - Buffer Area: 2 km radius from the Hotel.
- Environmental Parameters: The area of up to 5 km radius from the hotel has been demarcated as Area of Influence by considering the extent of project impact in terms of air quality, noise, water resources, human settlement, location of the access roads besides considering the actual land area which will be used for the facilities
- Social and Cultural: The area of up to two (2) km radius from the Project boundary has been demarcated as the area of Influence. The study area is demarcated based on the potential direct and indirect impact of the project on the local community.
  The key terms used for sub-categorization of the Study Area are:
    - Project footprint - The Project footprint comprises the area within the proposed boundary of the project which includes the following
    - Core zone – The core zone for the baseline studies is considered within 500 m radius from the project area, where most of the impacts are anticipated.
    - Buffer Zone - The buffer zone refers to the area between the 500 m and 2 km radius from the project area
    - Note: The Area of Influence = Project footprint area + Core zone + Buffer zone

4.2 Physical Environmental Sensitivities and Baseline Conditions

4.2.1 Climate

Baghdad experiences a hot desert climate (Köppen BWh), which is characterized by extremely hot and arid summers, and cold winters with limited seasonal precipitation. The summer period, extending from June to September, is marked by prolonged heat, with average daytime temperatures frequently exceeding 44°C and occasionally surpassing 50°C, accompanied by very low humidity and almost no rainfall. Winter months, typically from December to February, are comparatively mild, with daytime temperatures generally ranging between 15 to 19°C and cooler nights that may approach near-freezing conditions[8]. Further, maximum mean daily maximum temperature is observed in the months of July and August and minimum mean daily minimum temperature is observed in the month of January. The majority of annual precipitation, averaging approximately 144 mm, occurs between November and

[8] https://www.climate.top/iraq/baghdad/precipitation/

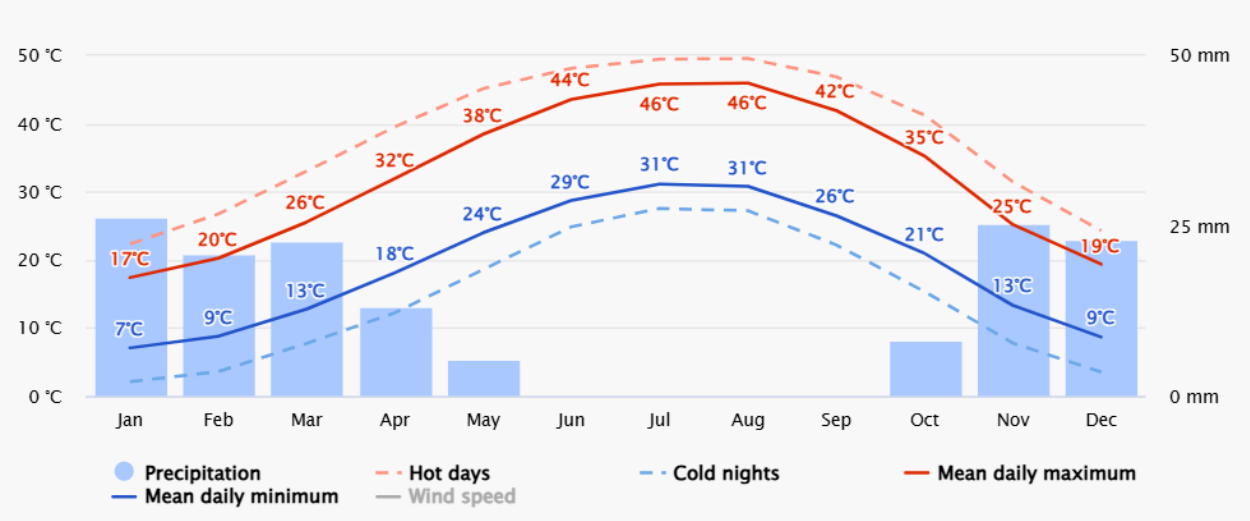
March, while the remainder of the year remains predominantly dry[9]. Data of Average Temperature and Precipitation of Baghdad is illustrated in ***Table*** 4-1 and the graphical representation is illustrated in ***Figure*** 4-2.

Table 4-1: Average Temperature and Precipitation of Baghdad

Months	Mean Daily Maximum (°C)	Mean Daily Minimum (°C)	Precipitation (mm)	Hot Days (°C)	Cold Days (°C)
January	17	7	26	22	2
February	20	9	21	27	4
March	26	13	23	33	8
April	32	18	13	40	12
May	38	24	5	45	19
June	44	29	0	48	25
July	46	31	0	49	28
August	46	31	0	50	27
September	42	26	0	47	22
October	35	21	8	41	15
November	25	13	25	31	8
December	19	9	23	24	4

Source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/baghdad_iraq_98182

Figure 4-2: Graphical representation of average temperature and precipitation of Baghdad

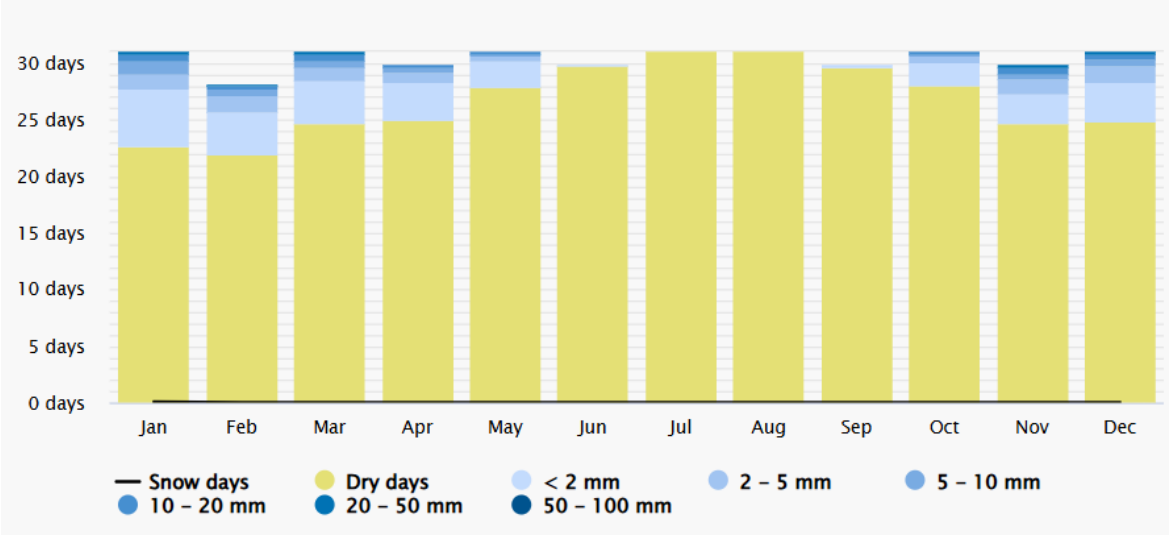


Source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/baghdad_iraq_98182

4.2.2 Rainfall

Baghdad experiences an arid climate with very low annual precipitation, receiving an average of approximately 156 mm of rainfall per year. Rainfall is infrequent, occurring on roughly 34 days annually, with monthly averages of about 13 mm. As per ***Table*** 4-1, the driest period extends from June to September, during which rainfall is typically negligible. In contrast, the wettest months are November to January, which record average precipitation levels of around 25 mm. This seasonal pattern results in prolonged dry periods, influencing water availability, groundwater recharge, and overall environmental conditions relevant to the project area. The precipitation amounts of Baghdad are illustrated in ***Figure*** 4-3.

Figure 4-3: Precipitation amounts of Baghdad

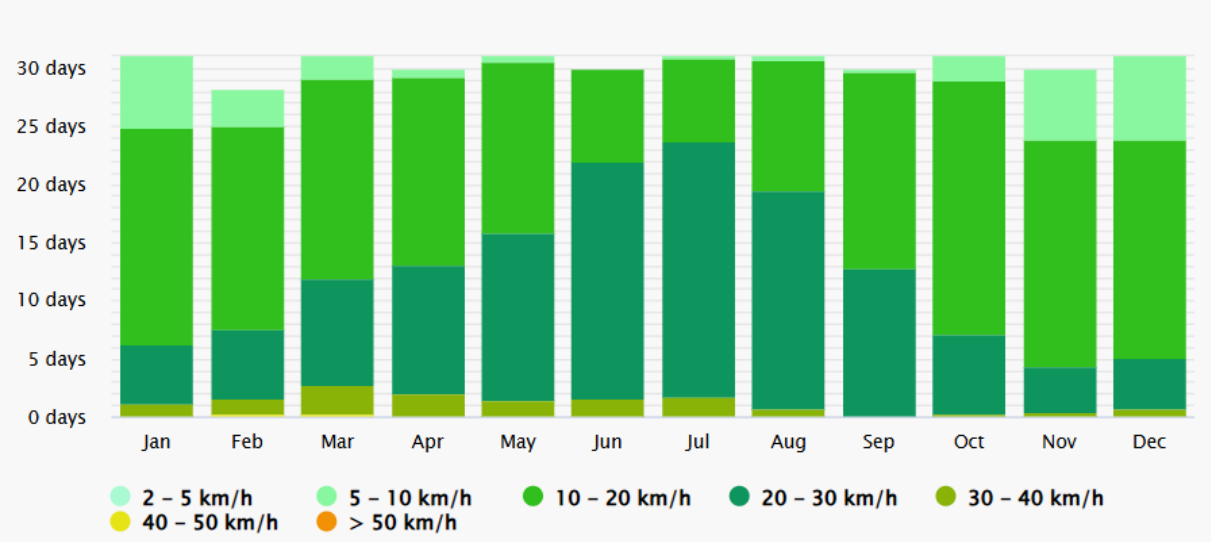


Source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/baghdad_iraq_98182

4.2.3 Wind

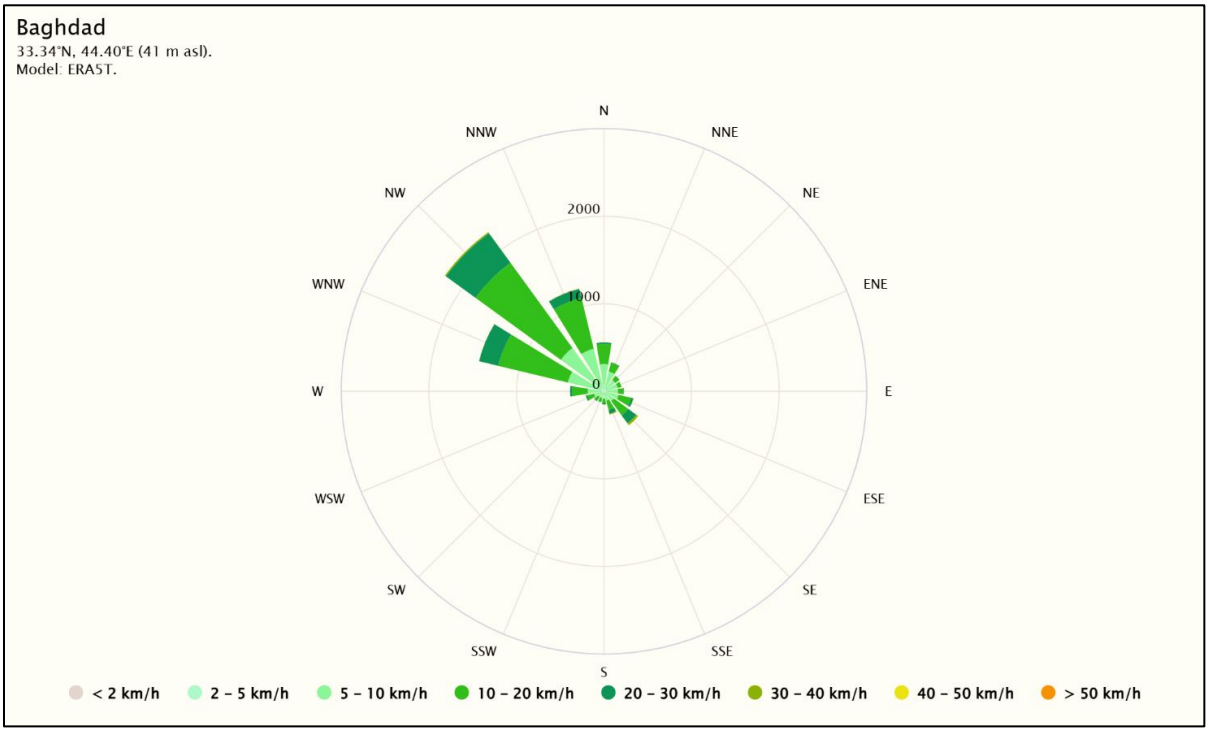
Baghdad experiences a predominantly north-westerly wind regime, largely driven by the seasonal Shamal winds, which intensify during late spring and summer. These winds are typically dry and can reach average monthly speeds of 10–16 km/h (≈ 2.8–4.4 m/s), with the highest speeds occurring between April and September. The persistent north-westerly flow during this period is a major contributor to dust and sandstorm events, which frequently reduce visibility and degrade air quality. During the cooler months, wind speeds are generally lower, though the prevailing direction remains predominantly from the northwest. The wind speed of Baghdad is illustrated in ***Figure*** 4-4 and the Windrose of Baghdad is illustrated in ***Figure*** 4-5.

Figure 4-4: Graphical representation of wind speed of Baghdad



Source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/baghdad_iraq_98182

Figure 4-5: Windrose of Baghdad



Source: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/baghdad_iraq_98182

4.2.4 Land Use

Iraq's territory is dominated by arid and semi-arid environments (over 40% between desert and rocky terrain), with agriculture still present but facing sustainability challenges (around 38% between irrigation, arable, and abandoned land). Urban areas and water bodies occupy a small portion of the land, while natural vegetation is fragmented and limited.

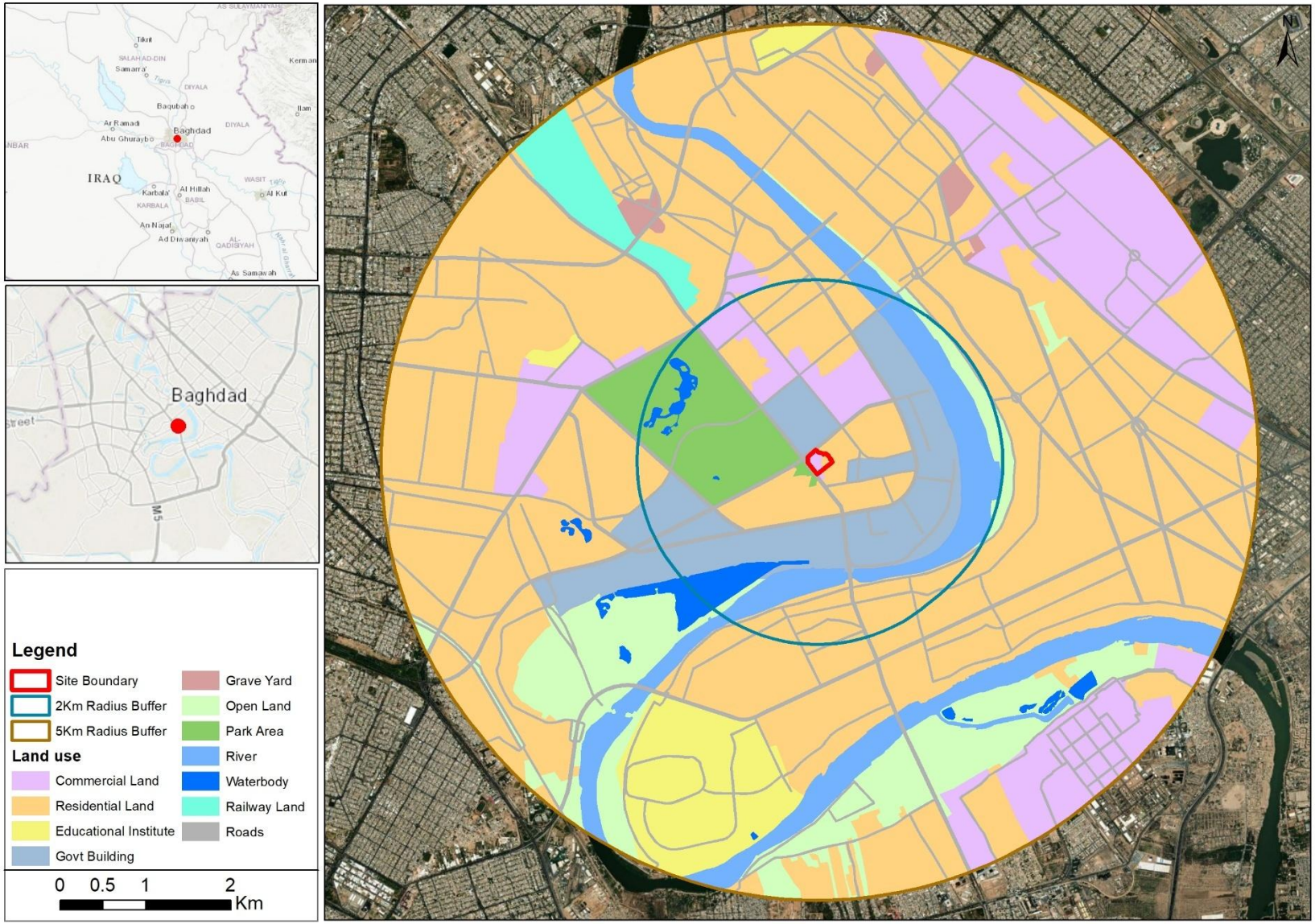
According to the land use mapping of the study area, it is understood that the study area is majorly composed of residential land (49.87%), followed by commercial land (12.15 %). A snapshot of the land use pattern of the study area has been presented in ***Table*** 4-2. Map showing the land use pattern of the Project's study area has been presented in ***Figure*** 4-6**.**

Table 4-2: Land use details of Study area

S.No.	Landuse	Area (Sq.km.)	%
1	Residential Land	41.2781	49.87
2	Waterbody	0.8691	1.05
3	Open Land	6.2657	7.57
4	Graveyard	0.3819	0.46
5	River	5.3637	6.48
6	Educational Institute	3.2857	3.97
7	Govt Building	4.4597	5.39
8	Railway Land	1.2342	1.49
9	Park Area	2.4292	2.93
10	Commercial Land	10.0567	12.15
11	Roads	7.1461	8.63
	Total	**82.7701**	**100.00**

Source: Deloitte GIS Mapping

Figure 4-6: Land Use Pattern of Study Area

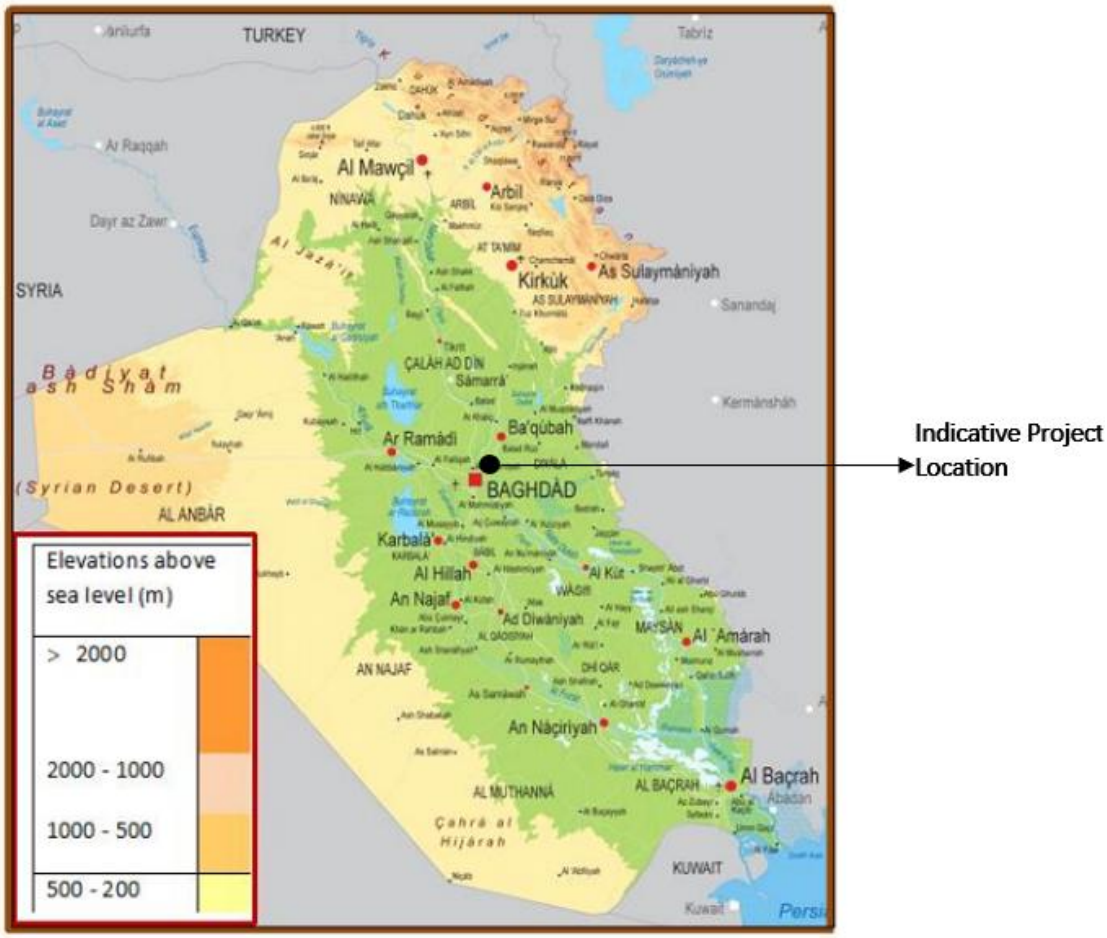


Source: Deloitte GIS Mapping

4.2.5 Topography

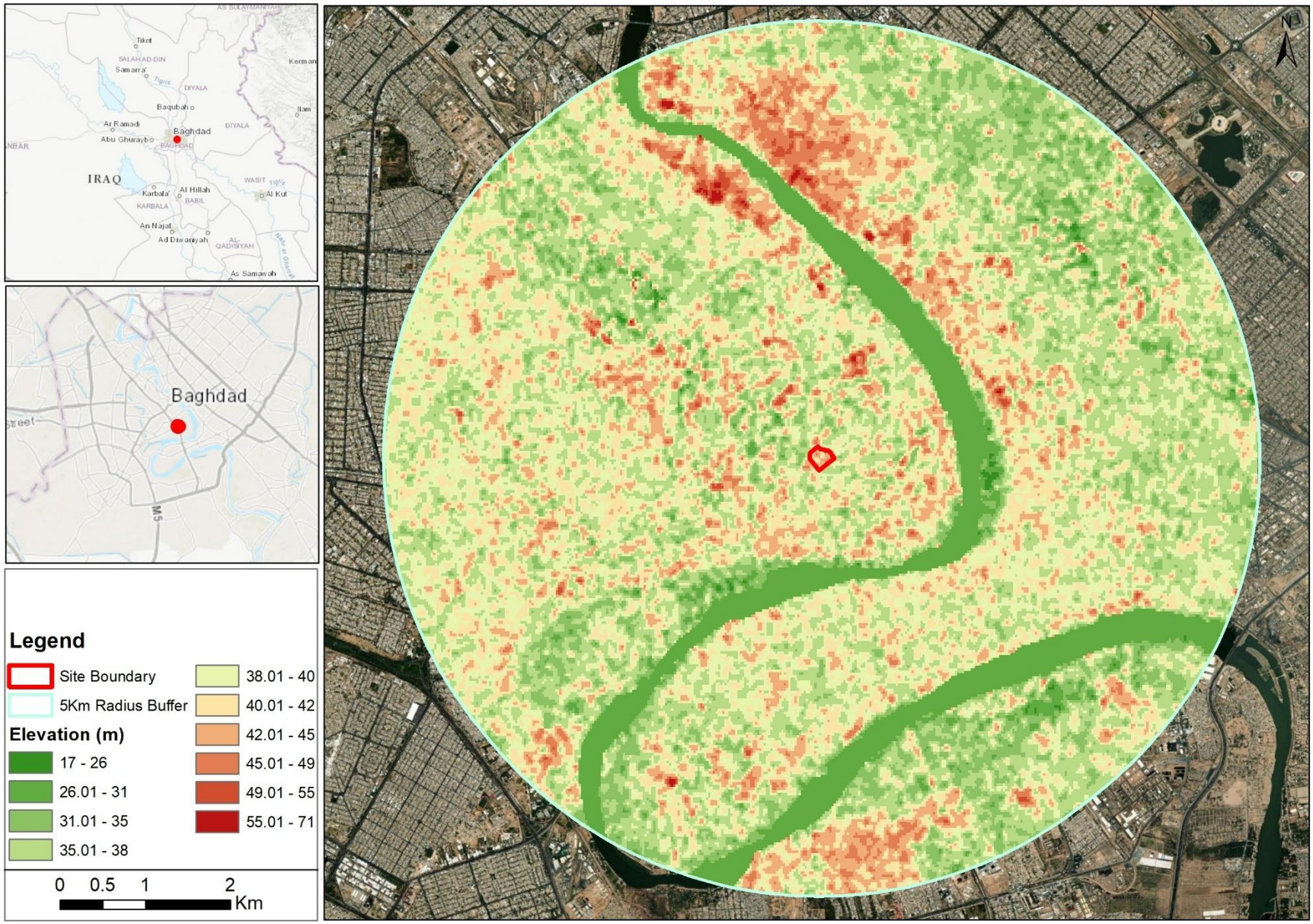
Baghdad, the location of the Project, lies within the Mesopotamian Plain Region, a broad sedimentary alluvial plain formed along the Tigris and Euphrates River systems. This physiographic region occupies approximately one-quarter of Iraq's total land area. The plain is generally rectangular in shape, extending from Belad on the Tigris River and Al-Ramadi/Tal Aswad on the Euphrates in the north, to the Iranian border in the east, and the desert plateau including the Al-Ahwar and Buheira areas in the west. The total area of this geomorphological unit is estimated at about 132,500 km². The terrain in Baghdad is predominantly flat, with minimal natural drainage features. This topography increases the area's susceptibility to seasonal flooding, particularly during periods of heavy rainfall. In the southern parts of the city, near the confluence of the Tigris and Euphrates rivers, ground elevations lie below the adjacent riverbeds, further elevating flood risk. Sediment deposition from both rivers has formed levee–basin landforms, creating subtle meso-relief variations within an otherwise nearly level landscape. The topography of Iraq is illustrated in ***Figure*** 4-7. Topographical map of the study area is provided in ***Figure*** 4-8. And based on ***Figure*** 4-8, it is observed that the project site is relatively flat in nature and elevation of the land varies from 38.10 to 55 m amsl.

Figure 4-7: Topography of Iraq



Source: https://www.scienpress.com/Upload/GEO/Vol%209_4_12.pdf

Figure 4-8 Topographical Map of Study Area



Source: Deloitte GIS Mapping

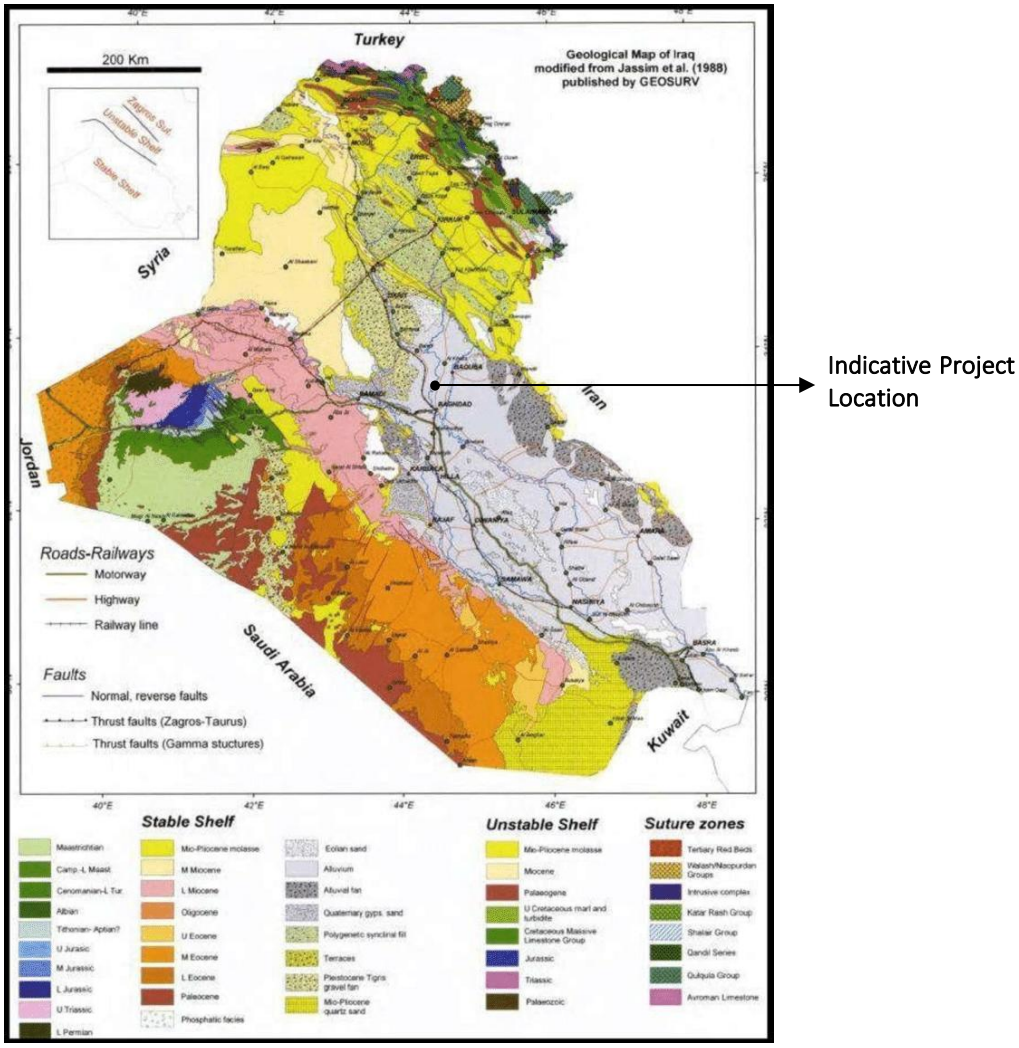
4.2.6 Geology and Geomorphology

4.2.6.1 Geology

Baghdad is located within the Mesopotamian Foredeep Basin, a major sedimentary basin forming the northeastern margin of the Arabian Plate. This region is characterized by a broad, tectonically stable depression that has undergone continuous subsidence and sediment accumulation since the Late Tertiary. The area lies within the Mesopotamian Plain, overlying deep Neogene and Quaternary formations that reflect prolonged fluvial and alluvial deposition from the Tigris and Euphrates River systems.

The geological succession beneath Baghdad consists of thick Quaternary alluvial deposits, underlain by Neogene formations such as the Injana (Upper Fars), Muqdadiya (Lower Bakhtiari), and Bai Hassan formations. These older units comprise sandstone, claystone, and conglomerate, while the upper Quaternary profile is dominated by fine-grained floodplain sediments. The geological map of Iraq is illustrated in ***Figure*** 4-9**.**

Figure 4-9: Geological Map of Iraq



Source: https://www.researchgate.net/figure/Geological-map-of-Iraq-Jassim-Goff-2006_fig4_345896033

4.2.6.2 Geomorphology

The geomorphology along the Tigris River and its tributaries is characterized by terraces, anticlinal ridges, fault ridges, flat irons, and erosional pediments. The primary fluvial features include river terraces and a two-level floodplain. Prominent anticlinal ridges—such as those at Mashura, Ani Zala, Butma, Alan, Khanooqa, and Makhoul—occur where alternating hard and soft rock layers are present, particularly within the Fatha Formation. Flat irons and erosional deposits are also evident along the river's course.

South of the Al-Fatha gorge, the river enters the Mesopotamian Plain, where two terrace levels are developed up to Al-Niba'ai, beyond which no additional terraces appear. Further downstream, the Tigris flows through a broad floodplain and into the wider

Mesopotamian Plain, characterized by depressions, crevasse splays, sheet runoff features, active and relict marshes, and estuarine sabkha deposits. In the southernmost section near the Shatt Al-Arab, tidal flats and inland sabkha sediments dominate.

4.2.7 Water Resources

Water resources in Iraq are primarily derived from the Tigris and Euphrates Rivers, which constitute the country's most significant surface-water systems. According to the Ministry of Water Resources (2010), the combined inflows to these rivers originate mainly from upstream countries: approximately 71% from Turkey, 6% from Iran, 4% from Syria, and only 8% from internal catchments. The average annual flow of the Tigris upon entering Iraq is estimated at 21.2 billion cubic meters (BCM), while the Euphrates contributes around 30 BCM at the national border. The World Bank further reports that the Euphrates is entirely sourced outside Iraq, whereas the Tigris receives about 67% of its flow from external territories, underscoring Iraq's high dependence on transboundary water resources.

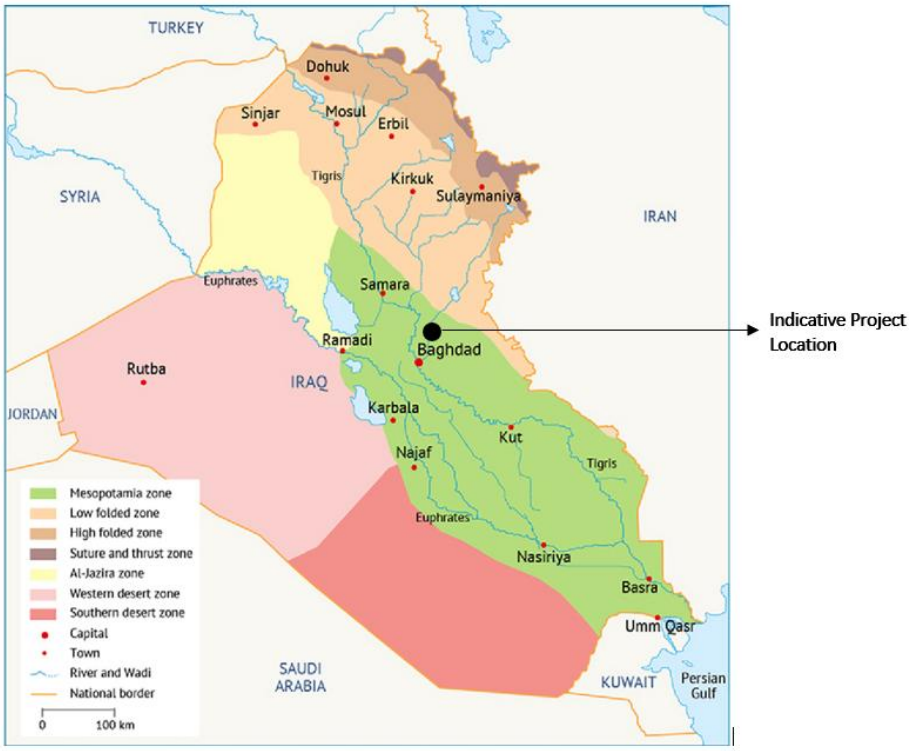
Baghdad's primary water resource is the Tigris River, which flows through the city and serves as the main source for municipal water supply. Water from the Tigris is treated at several water treatment plants before distribution for domestic, commercial, and industrial use. Groundwater from local aquifers provides supplementary supply in certain areas, while non-conventional sources such as reservoirs and storage facilities support demand during shortages

4.2.7.1 Hydrogeology

The hydrogeologic regime of the Tigris River system in the Baghdad region is strongly influenced by its tributaries and extensive surface-water withdrawals. Upstream of Baghdad, the Udhaim River represents the last significant inflow, draining approximately 13,000 km² and contributing a mean annual volume of 25.2 BCM, although the channel remains dry during June–November, limiting its role in late-season recharge. South of the city, the Diyala River provides the final tributary contribution, with a mean discharge of roughly 182 m³/s at its junction with the Tigris.

As the river flows through Baghdad, its mean annual discharge decreases to about 1,140 m³/s, reflecting substantial surface-water abstraction for irrigation, which in turn reduces downstream hydraulic continuity and aquifer river exchange potential. Water quality also declines due to irrigation return flows, saline recharge from Tharthar Lake diversions, and the direct input of untreated municipal sewage (>500,000 m³/day). These factors drive a marked increase in TDS concentrations, from approximately 275–280 mg/L at the Turkish–Iraqi border to over 1,800 mg/L near Basra, significantly influencing both surface-water chemistry and the hydro-chemical character of adjacent alluvial aquifers. The hydrological zone map of Iraq is illustrated in ***Figure*** 4-10.

Figure 4-10: Hydrological zone map of Iraq



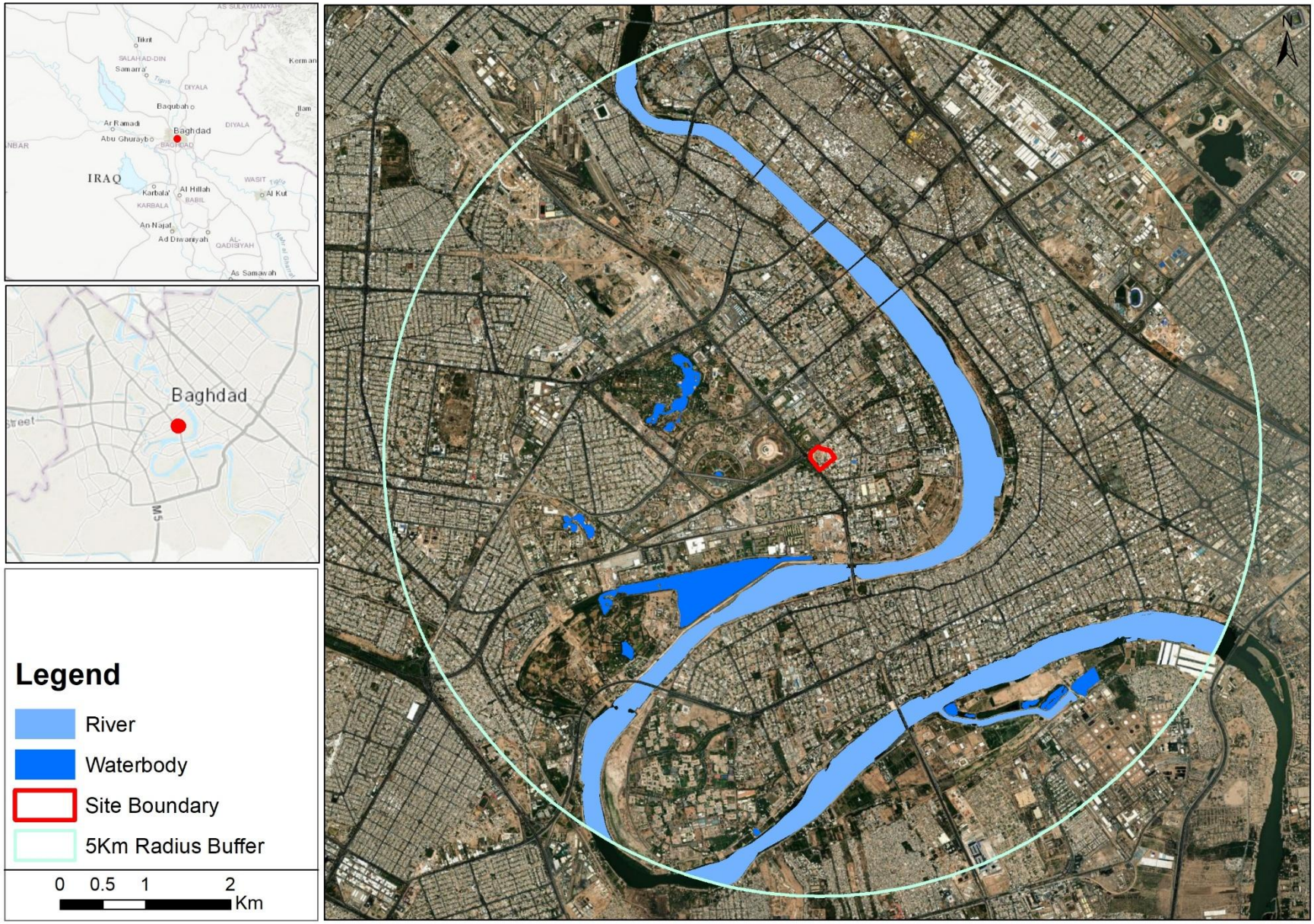
Source: https://www.researchgate.net/figure/The-main-hydrogeological-zones-in-Iraq-after-Sissakian-and-Saeed-2012_fig2_363055308

Drainage

Baghdad's drainage system consists of a combination of stormwater networks, surface channels, and pumping stations designed to manage runoff and protect the city from localized flooding. The city relies heavily on a system of gravity-fed drains, subsurface pipes, and open canals that discharge into the Tigris River, which acts as the main receiving body for both stormwater and treated wastewater. Sedimentation, blockages, and deterioration of aging pipelines significantly reduce the network's hydraulic capacity, particularly during periods of intense rainfall. In addition, limited stormwater storage capacity contributes to recurrent waterlogging in residential areas, most notably in older neighborhoods characterized by narrow streets and inadequate drainage gradients[10]. A drainage map of the study area has been presented in ***Figure*** 4-11***.***

[10] https://amanatbaghdad.gov.iq/ar

Figure 4-11 Map showing drainage pattern of the Study area



Source: Deloitte GIS Mapping

4.2.7.2 Surface Water

Surface water in Baghdad is primarily represented by the Tigris River, which flows through the city and serves as the main source of municipal water supply, irrigation, and other domestic uses. Tigris is fed by a number of tributaries. However, the next upstream tributary to Tigris before it enters Baghdad is Udhaim, which drains an area of 13,000 km^2 and reaches 25.2 BCM of mean annual flow. This tributary runs dry between June and November each year. The next, and last, downstream tributary to the south of Baghdad, is the Diyala River with a mean daily flow of 182 m^3 /s at the confluence with Tigris. In Baghdad, the mean annual flow of Tigris drops to 1,140 m^3 /s due to water withdrawal for irrigation. Water quality of the Tigris is poor due to the return flows from irrigation projects. Some of the Tigris flood flows are diverted to Tharthar Lake through an irrigation canal (western Baghdad), which is highly saline, and then it is redirected for use in the river system with the salt washed out of the lake. Total Dissolved Solids (TDS) values of the Tigris water are 280 – 275 mg/l at the Turkish Iraqi border, while it increases to more than 1,800 mg/l in Basra. Tigris water quality receives even more damage by direct discharge of raw sewage on daily basis, and at a rate of more than 500,000 m^3 /day.

During the site visit, it was observed that no surface water bodies are located within a 1.5 km radius of the project site. The Tigris River is the nearest surface water body in the broader area; however, water required for civil works and sanitation purposes is sourced from the Baghdad Municipality. No abstraction of water from natural water bodies is carried out or proposed for the project.

4.2.7.2.1 Drinking Water Quality

The locations illustrated in ***Table*** 4-3 involves the drinking water quality monitoring data of Labour camps located in Al-Jadriya, Baghdad before RO filtration. Further, the water for labour camps is predominantly sourced from Baghdad Municipality, that also supplies water to the project site for construction and drinking purposes. The measured metrics are compared against the WHO Guideline value to identify any undesirable variations. Details of the location monitored and its result are presented in ***Table*** 4-3 and ***Table*** 4-4.

Table 4-3: Drinking Water Quality monitoring location

S.No.	Location Code	Name of Location	Source
1.	DW1	Labour camps located in Al Jadriya	Baghdad Municipality
2.	DW2		
3.	DW3		
4.	DW4		

Source: Drinking Water Monitoring Data of Labour camps provided by UCC

Table 4-4: Results of Drinking water quality monitored at labour camps

Sr. No.	Parameters	Unit	Surface Water Sample				WHO Guideline Value
			DW 1	DW2	DW3	DW4	
Physical Parameters							
1.	pH value @ 25°C	-	7.35	6.9	7.1	7.3	6.5 – 8.5 (acceptable range)
2.	Electrical Conductivity	µS/cm	874	1229	1239	1061	-
3.	Turbidity	NTU	0.3	550	560	420	5
4.	Total Dissolved Solids	mg/l	390	641	646	553	1000
General Parameters							
5.	Calcium as Ca	mg/l	75	150	152	110	150
6.	Chloride as Cl	mg/l	37	59	61	48	350
7.	Copper as Cu	mg/l	BDL	BDL	BDL	BDL	2
8.	Fluoride as F	mg/l	BDL	BDL	BDL	BDL	0.2
9.	Iron as Fe	mg/l	BDL	BDL	BDL	BDL	Max. 0.3
10.	Magnesium as Mg	mg/l	24	42	34.7	23	100
11.	Nitrate as NO3	mg/l	BDL	0.064	BDL	BDL	50
12.	Selenium as Se	mg/l	BDL	BDL	BDL	BDL	0.01

Sr. No.Parameters	Unit	Surface Water Sample				WHO Guideline Value
		DW 1	DW2	DW3	DW4	
13. Sulphate as SO_{4}	mg/l	115	398.79	374.1	273.9	400
14. Total Alkalinity as CaCO_{3}	mg/l	230	200	190	170	-
15. Total Hardness as CaCO_{3}	mg/l	310	550	560	420	Max. 500
16. Zinc as Zn	mg/l	0.028	0.024	0.018	0.026	Max. 3
17. Potassium as K	mg/l	1.6	2.04	2.01	1.795	-
18. Lead as Pb	mg/l	BDL	BDL	BDL	BDL	0.01
19. Nickel as Ni	mg/l	BDL	0.009	0.013	0.016	0.07
20. Total Arsenic as As	mg/l	BDL	BDL	BDL	BDL	0.01
21. Total Chromium as Cr	mg/l	BDL	BDL	BDL	BDL	0.01
Bacteriological Parameters						
22. Aerobic plate count	cfu/ml	Not detected	60	TNTC	9	100
23. Coliform bacteria	Per 100 ml	Not detected	Not detected	Not detected	Not detected	0
24. Faecal Coliform	Per 100 ml	Not detected	Not detected	Not detected	Not detected	0

***BDL: Below Detected Limit**

Source: Drinking Water Monitoring Data of Labour camps provided by UCC

Based on the above results, it is observed that the analyzed water quality parameters are within the WHO guideline values, except for total hardness at sampling locations DW2 and DW3, which correspond to the water quality data from Labour Camps 2 and 3.

4.2.7.3 Groundwater Resources

Groundwater resources in Iraq account for 0.9 BCM annual. And cover the needs of around 64,000 ha of agricultural lands all around the country. A long time ago, the Iraqi government has drilled thousands of deep wells to cover the needs where surface water is not available. Artesian water has been widely used to supplement irrigation in winter and to irrigate vegetables in summer, in addition to supplying both urban and rural populations with potable water. Other domestic usage includes watering livestock.

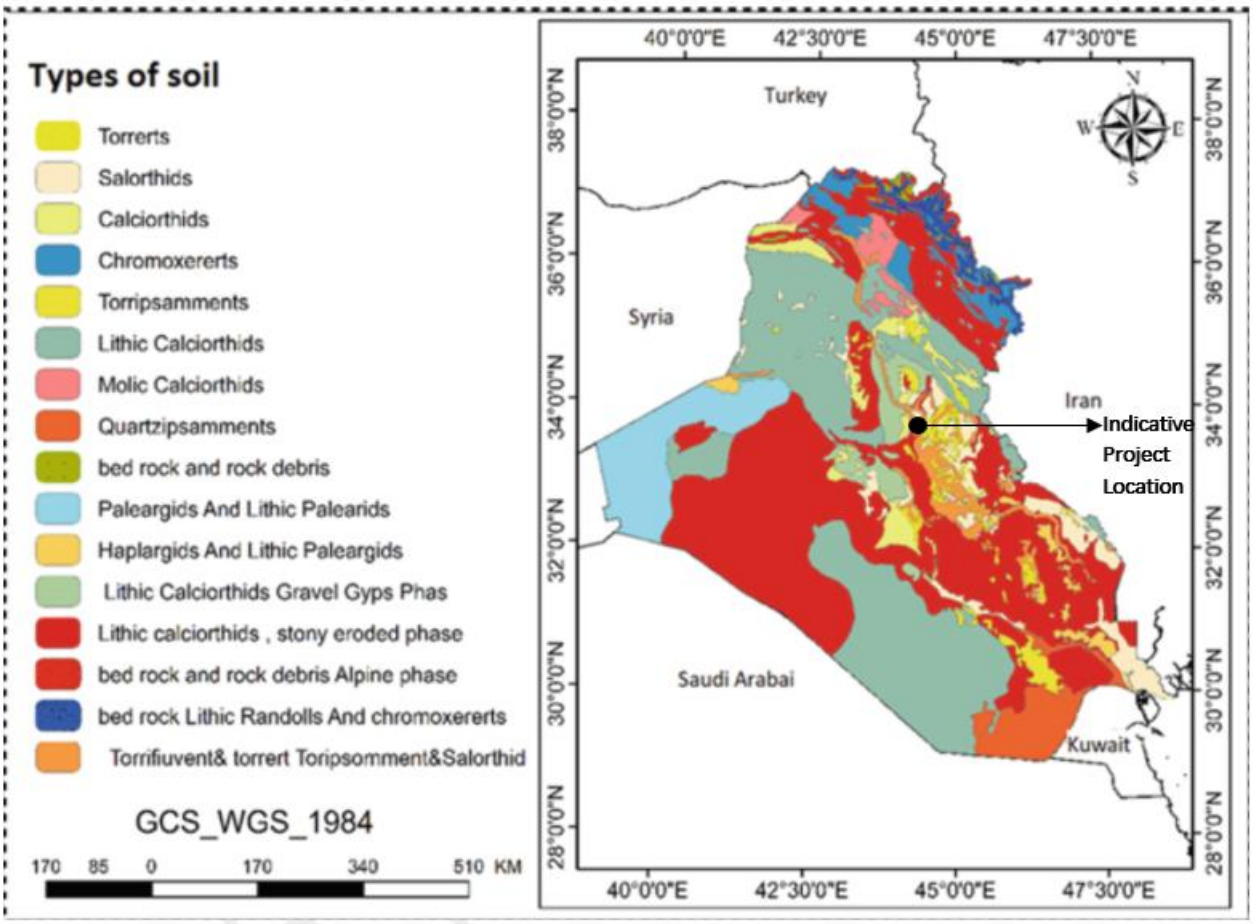
Good quality subterranean water could be found in the foothills of the northeastern mountains (only 5 – 50m deep). While water tables could also be found in the semi-flat terrain of central Iraq, at relatively higher levels (300m deep). Currently, groundwater abstraction can be achieved from within the right bank of Euphrates basin, at nearly 13 m^3/s. Nevertheless, water found there is found of high salinity (more than 1 mg/l) and increasing its salinity until reaching estuaries to the south-east. Water tables in Baghdad, however, are contained in relatively permeable layers, which would therefore increase possibility of cross-contamination by activities above the ground surface. Quality of groundwater in Baghdad is in continuous degradation due to intensive usage of fertilizers, seepage of contaminants through soil, intensive discharge of industrial and sanitary wastewater to land and river, illegal commissioning of cesspits, and others.

As reported at the project site, groundwater is abstracted due to the high groundwater table in Baghdad, which poses challenges to excavation and foundation works. The abstracted groundwater is subsequently filtered and drained to the Baghdad Municipality network. Initially, a total of 33 borewells were utilized for dewatering purposes; however, at present, only 5 borewells remain operational. The necessary No Objection Certificate (NOC) for groundwater abstraction has been obtained by the project proponent.

4.2.8 Soil Type

Baghdad is predominantly underlain by Calcaric Fluvisols, which represent the stratified alluvial soils of the Lower Mesopotamian Plain. Formed from successive deposits of the Tigris and Euphrates rivers, these soils are highly calcareous, containing roughly 20% lime. Soil colour varies with source material, appearing greyish brown in Euphrates deposits and showing reddish to pinkish hues were influenced by Tigris sediments. Gypsum is almost always present due to the widespread gypsum crusts and deposits within the rivers' upstream catchments. Soil map of Iraq showing Project site is presented in ***Figure*** 4-12.

Figure 4-12: Soil Map of Iraq



Source: https://link.springer.com/chapter/10.1007/978-3-031-71356-9_4

4.2.8.1 Soil Quality

Soil characteristics within the study area, especially the physical quality and fertility of the soil have been characterized by analyzing soil samples data secured from secondary sources[11]. The soil analysis and results of study area in Baghdad city have been presented in ***Table*** 4-5.

Table 4-5: Results of Soil Sampling near Study Area

Sr no	Parameter	Unit	S1
1.	pH	-	7.5
2.	Conductivity (1:25)	µs/cm	600
3.	Soil texture		Sandy loam
4.	Total Dissolved Solids (TDS)	ppm	370
5.	Manganese as Mn	ppm	235 (+/-) 86
6.	Zinc as Zn	ppm	46

[11] https://pdfs.semanticscholar.org/09d5/cb29a9ccb90069b1cbd5ac907f7d74a705f7.pdf

Sr no	Parameter	Unit	S1
7.	Copper as Cu	ppm	35 (+/-) 3
8.	Lead as Pb	ppm	92 (+/-) 32
9.	Cadmium as Cd	ppm	0.82 (+/-) 0.23

Source: https://pdfs.semanticscholar.org/09d5/cb29a9ccb90069b1cbd5ac907f7d74a705f7.pdf

The secondary data for soil quality assessment in the Karrada area of Baghdad indicate that the physical characteristics of the soil are within acceptable ranges and are representative of natural baseline conditions. Heavy metal concentrations are generally low and consistent with background levels, indicating no evidence of soil contamination in the vicinity of the project site. As the assessed location is situated close to the project premises, the results have been considered representative and have been adopted for the baseline environmental assessment.

4.2.9 Ambient Air Quality

Ambient air quality data collected by the U.S. Embassy in Baghdad consistently indicates "Moderate" to "Poor" air quality, with fine particulate matter ($PM_{2.5}$) being the most critical pollutant. Continuous monitoring of key parameters includes PM2.5, PM10, SO_2, NO_2 and CO depicting pollutant levels generally for PM2.5 and PM10 are within acceptable limits as per Iraqi standards and Interim target-1 and 2 of WHO standards, demonstrating lower concentration of particulates as analysed for the month of November 2025 as shown in ***Table*** 4-6. Further the air quality data of $PM_{2.5}$, PM_{10}, SO_2, NO_2 and CO are illustrated for year 2020 to 2025 in ***Table*** 4-6 and Air Quality Analysis from 2020-2025 for December Month is illustrated in ***Figure*** 4-13.

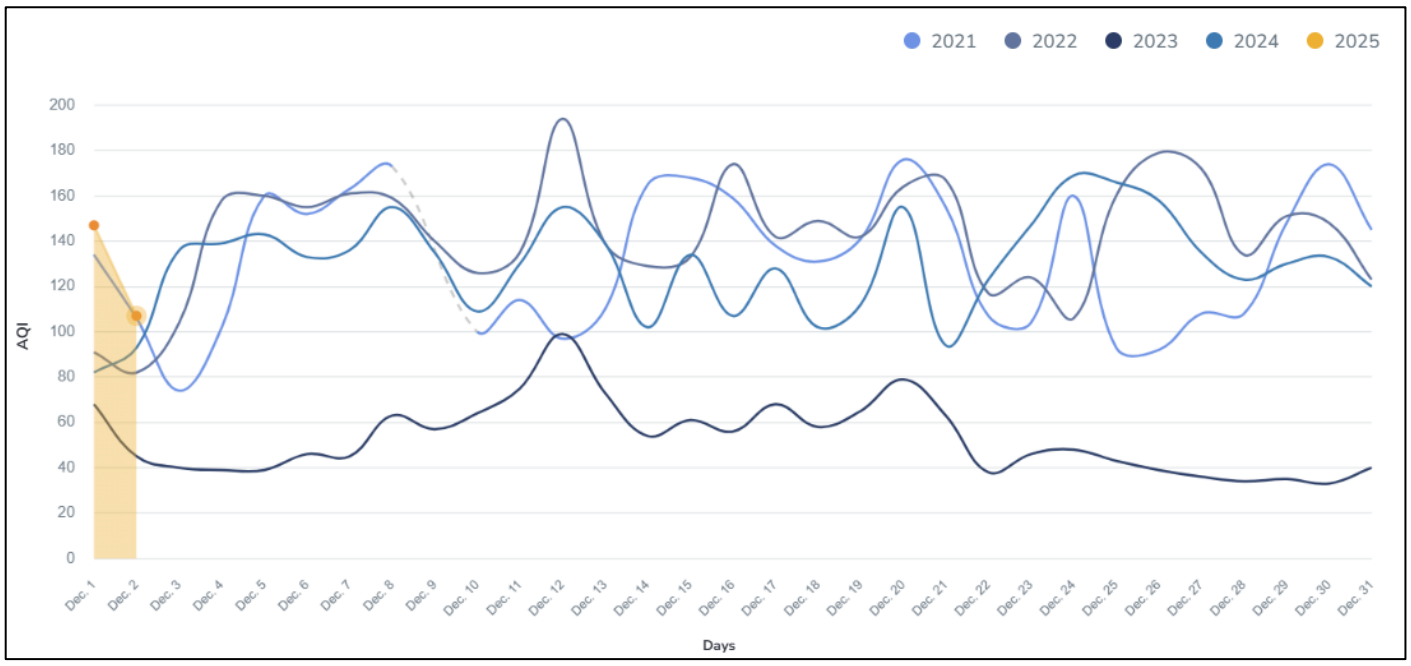
Table 4-6: Air Quality Data of Baghdad for November'25

Date	PM 2.5 (µg/m3)	PM 10 (µg/m3)	SO2 (ppb)	NO2 (ppb)	CO (ppb)
04.11.2025	14	15	2	7	147
05.11.2025	21	24	3	7	148
06.11.2025	28	32	3	7	144
07.11.2025	35	49	2	6	144
08.11.2025	50	70	2	5	138
09.11.2025	45	61	2	6	133
10.11.2025	31	42	3	7	142
11.11.2025	32	37	2	9	151
12.11.2025	36	47	2	6	153
13.11.2025	34	49	4	9	165
14.11.2025	42	57	4	5	180
15.11.2025	43	66	2	3	160
16.11.2025	20	25	2	3	172
17.11.2025	15	17	2	9	216
18.11.2025	19	22	3	10	230
19.11.2025	16	25	3	11	194
20.11.2025	21	24	4	9	180
21.11.2025	21	26	4	9	158
22.11.2025	24	35	5	9	151

Date	PM 2.5 (µg/m3)	PM 10 (µg/m3)	SO2 (ppb)	NO2 (ppb)	CO (ppb)
23.11.2025	29	32	3	5	167
24.11.2025	28	34	4	6	197
25.11.2025	25	27	4	8	242
26.11.2025	28	36	3	8	194
27.11.2025	31	40	3	7	189
28.11.2025	29	36	3	6	161
29.11.2025	34	56	4	12	271
30.11.2025	30	36	3	7	170
01.12.2022	56	76	4	5	196
02.12.2023	34	55	4	6	208
03.12.2024	26	38	3	6	213
Total	**897**	**1189**	**92**	**213**	**5314**
Average	**29.90**	**39.63**	**3.07**	**7.10**	**177.13**
WHO Standards	75 (Interim target-1) 50 (Interim target-2) 37.5 (Interim target-3) 25 (guideline)	150 (Interim target-1) 100 (Interim target-2) 75 (Interim target-3) 50 (guideline)	125 (Interim Target 1) 50 (Interim Target 2) 20 (Guideline)	-	10,000
Iraqi Standards	65	150	40	50	10,000

Source: US Embassy Air Quality Monitoring Data

Figure 4-13: Air Quality Analysis from 2020-2025 for December Month



Source: US Embassy Air Quality Monitoring Data

The air dispersion characteristics of Baghdad are generally weak, resulting in a tendency for pollutants to accumulate rather than disperse efficiently. The region frequently experiences low wind speeds, particularly during the early morning and winter months,

which limits the natural movement of air and allows emissions from traffic, generators, and industrial sources to remain concentrated near ground level.

4.2.9.1 Ambient Air Quality in Study Area

Air quality monitoring was carried out primarily within Baghdad city by the US Embassy. However, only limited data was available for analysis. For this assessment, ambient air quality data for the month of November has been considered. Based on ***Table*** 4-7**,** PM 2.5 is observed to be 40 µg/m^3 which exceeds Interim target-3 of WHO standards although is within limit for WHO Interim-1 and 2. Also, the PM 2.5 levels are within limit of Iraqi Air Quality Standards. Further, PM10, SO2, NO2 and CO levels are within limit of both WHO and Iraqi Air Quality standards.

Table 4-7: Ambient air quality monitoring data of Baghdad

Parameter	Units	AQ Monitored by US Embassy	Averaging Period	Iraqi Standards (µg/m^3)	WHO Guidelines (µg/m^3)
Particulate matter (PM 10)	µg/m^3	30	24 hours	150	150 (Interim target-1) 100 (Interim target-2) 75 (Interim target-3) 50 (guideline)
Particulate matter (PM 2.5)	µg/m^3	40	24 hours	65	75 (Interim target-1) 50 (Interim target-2) 37.5 (Interim target-3) 25 (guideline)
Sulphur dioxide (SO2)	ppb	3	24 hours	40	125 (Interim Target 1) 50 (Interim Target 2) 20 (Guideline)
Nitrogen dioxide (NO2)	ppb	7	24 hours	50	-

Source: US Embassy Air Quality Monitoring Data

4.2.10 Noise Quality

The noise environment at the project site reflects a typical urban acoustic profile, primarily shaped by traffic density, mixed commercial and residential activities, and other anthropogenic sources. The hotel is located near road, which results in vehicular movement contributing to ambient noise levels. In addition to traffic, surrounding land uses such as offices and residential complexes generate intermittent noise from human activity. As reported, the project is monitoring noise level at the site to ensure that the levels are within the prescribed limits. The location and results of noise monitoring are illustrated in ***Table*** 4-8 and ***Table*** 4-9.

Table 4-8: Noise Quality Monitoring Location

Sampling ID	Location	Monitoring Frequency	Primary Activity in Proximity
NML-01	Zone 1 & 2 Boundary	Once in 24 hours	Heavy Excavation & Trucking
NML-02	Central Plaza (Zones 3-5)	Once in 24 hours	Tower Crane Operations & Lifting
NML-03	Villa Cluster (9 Villas)	Once in 24 hours	Finishing & Concrete Pumping
NML-04	Project Perimeter (South)	Once in 24 hours	Concrete Mixer Arrival & Pumping

Source: Estithmar

Table 4-9: Noise Quality Monitoring in Study area

S.No.	Sampling ID	Results dB(A)		Iraqi Noise Control Law for Residential Areas[12]		Limit as per EHS guidelines of IFC, Residential area (Leq hourly)	
		Avg. Noise Level (LAeq,1h)	Peak Level (Lmax)	Leq Day	Leq Night	Leq Day	Leq Day
1.	NML-01	78.4	92.1	60	50	55	45

[12] https://moj.gov.iq/upload/pdf/ba87269c489b8cfd_%D9%82%D8%A7%D9%86%D9%88%D9%86%20%D8%A7%D9%84%D8%B3%D9%8A%D8%B7%D8%B1%D8%A9%20%D8%B9%D9%84%D9%89%20%D8%A7%D9%84%D8%B6%D9%88%D8%B6%D8%A7%D8%A1%20-%20Copy.pdf

S.No.	Sampling ID	Results dB(A)		Iraqi Noise Control Law for Residential Areas[12]		Limit as per EHS guidelines of IFC, Residential area (Leq hourly)	
		Avg. Noise Level (LAeq,1h)	Peak Level (Lmax)	Leq Day	Leq Night	Leq Day	Leq Day
2.	NML-02	72.1	85.4	60	50	55	45
3.	NML-03	75.5	89.2	60	50	55	45
4.	NML-04	84.2	98.6	60	50	55	45

Source: Estithmar

The maximum average noise level of 84.2 dB(A) was recorded at NML-04 and peak level noise level of 98.6 dB(A) was also recorded at NML-04. The average noise level of the study area for all locations exceeded Iraqi Noise Standards limits as well as IFC standards for residential area. As per NIOSH the noise levels are compliant against an occupational noise exposure limit of 85 dB(A) for construction workers based on an 8-hour working shift, and a daytime construction noise limit of 75 dB(A) at the project boundary in areas adjoining residential receptors[13].

4.2.11 Natural Hazards

4.2.11.1 Seismic Activities

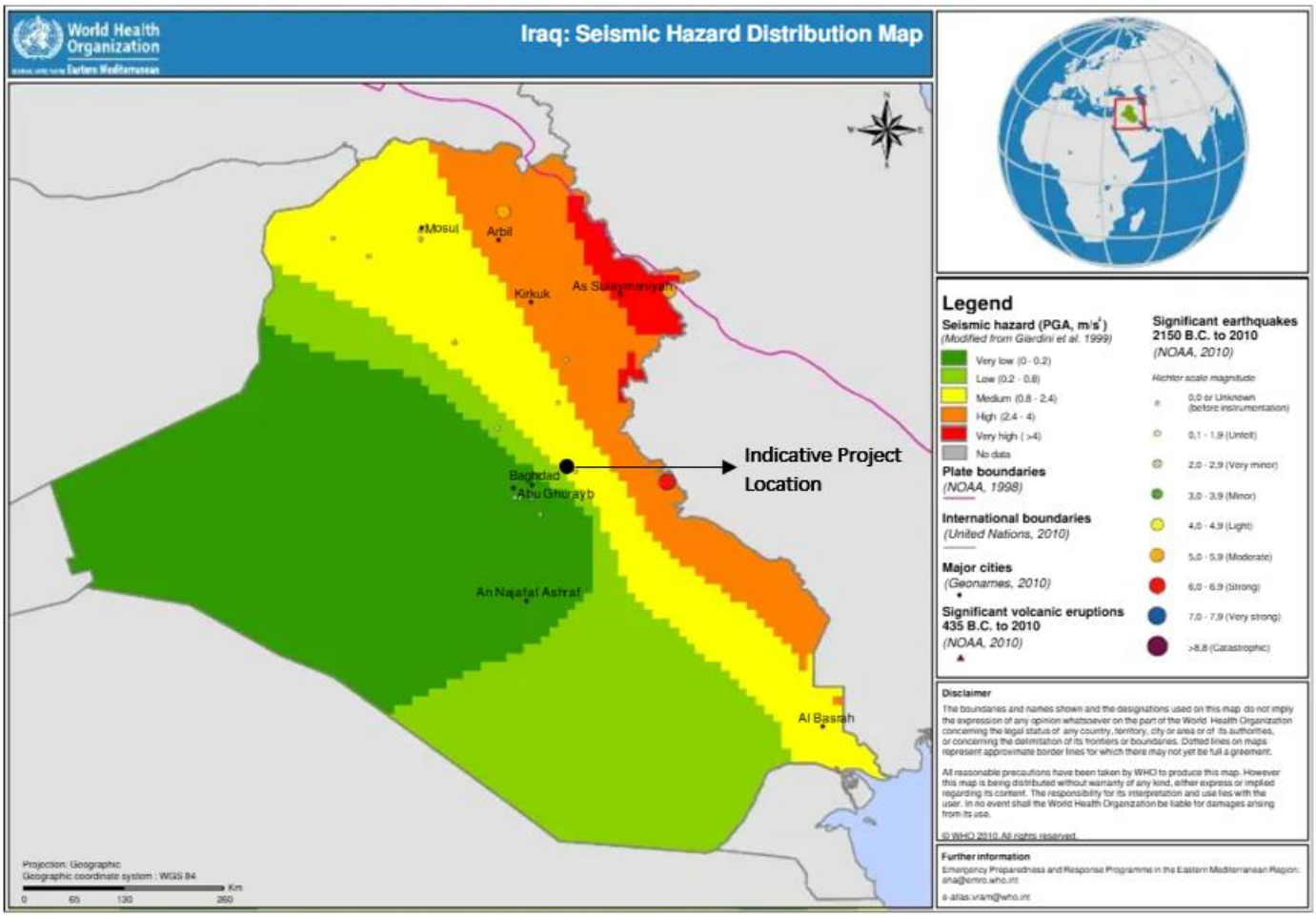
Baghdad is classified as a medium earthquake hazard zone, meaning there is a 10% chance of potentially damaging earthquake shaking in the next 50 years. As per, IQ.303:2017, Baghdad city falls under Zone III with spectral acceleration of 2.94 m/s[2,14]. The city lies at a considerable distance from Iraq's primary active tectonic zone, the Zagros Fold–Thrust Belt, located in the northeastern part of the country. This tectonic belt is responsible for most of Iraq's significant seismic activity; however, due to Baghdad's geographic separation from this zone, the frequency and magnitude of earthquake are limited. As per reports of the July-December 2022 earthquake sequence in the southeastern Fars arc of Zagros mountains, Iran. A series of earthquakes ranging from M4.5 to M5.6 along the Iraq–Iran border occurred whose tremors were felt in Baghdad over several hours[15]. The seismic hazard map of Iraq is illustrated in ***Figure*** 4-14.

[13] https://www.osha.gov/noise

[14] https://www.dlubal.com/en/load-zones-for-snow-wind-earthquake/seismic-iq-303.html?&center=33.266273138079164,44.75830078125001&zoom=6&marker=33.315,44.368#&center=33.394782431629245,44.505615234375&zoom=7&marker=33.315,44.368

[15] https://seismica.library.mcgill.ca/article/view/953

Figure 4-14: Seismic Hazard Map of Iraq



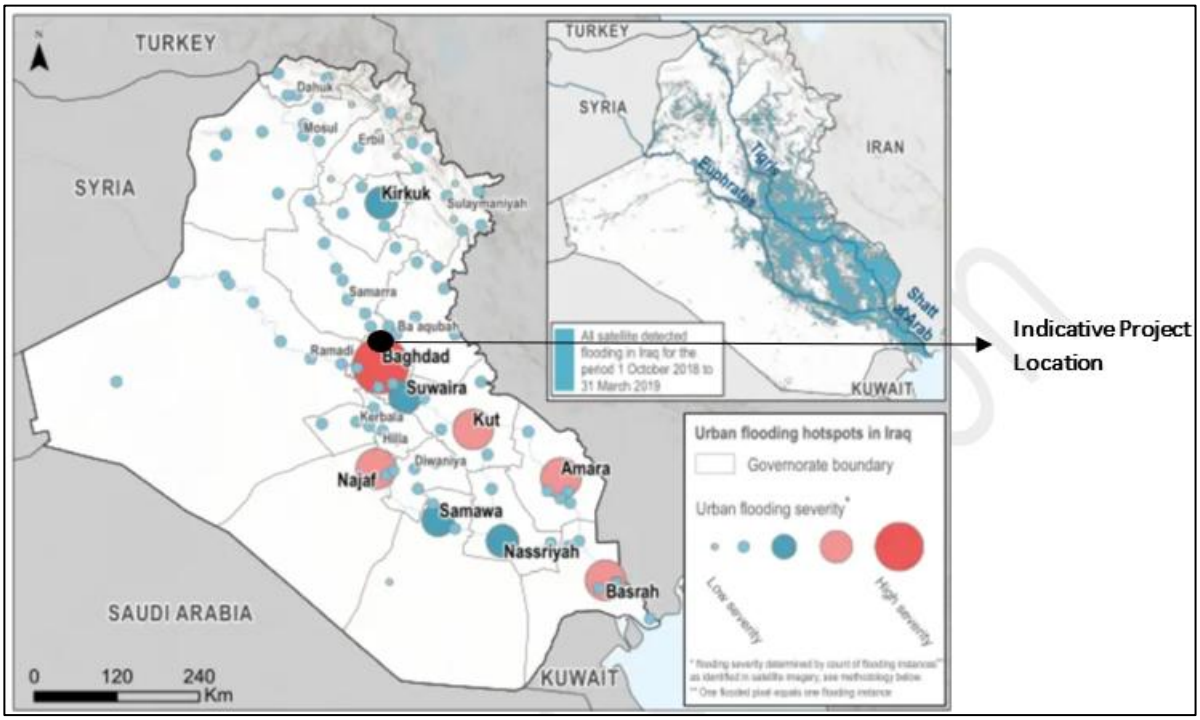
Source: Emergency Preparedness and Response Programme in the Eastern Mediterranean Region, WHO

4.2.11.2 Floods

Flooding has emerged as an increasingly significant issue in Iraq as the country becomes more vulnerable to climate-related extremes. Climate change is influencing key environmental factors—such as altered rainfall patterns, rising temperatures, and declining water management capacity—that collectively heighten the likelihood and severity of flood events. These risks are further aggravated by inadequate infrastructure and poor land management practices, which reduce the ability of communities and public systems to effectively cope with heavy rainfall or sudden water surges. As a result, flood events are becoming more destructive, posing growing threats to both local populations and critical infrastructure. Based on Flood Hazard Map of Iraq illustrated in ***Figure*** 4-15, Baghdad city is categorized as high severity zone to urban flooding. Also, media reports highlight on March 7, 2025, most of the governorates of Iraq witnessed unprecedented heavy rains that lasted for three consecutive days, straining the capacity of the water channels and drainage networks which led to a rise in the water level and widespread flooding[16].

[16] https://reliefweb.int/report/iraq/iraq-flood-2025-dref-operation-mdriq017

Figure 4-15: Flood Hazard Map of Iraq



Recent assessments of the Tigris reach between Al-Muthana Bridge and the Diyala River indicate that inundation risks along approximately 9 km of this section would likely occur only under high-flow conditions exceeding 3,500 m³/s[17].

4.2.11.3 Drought

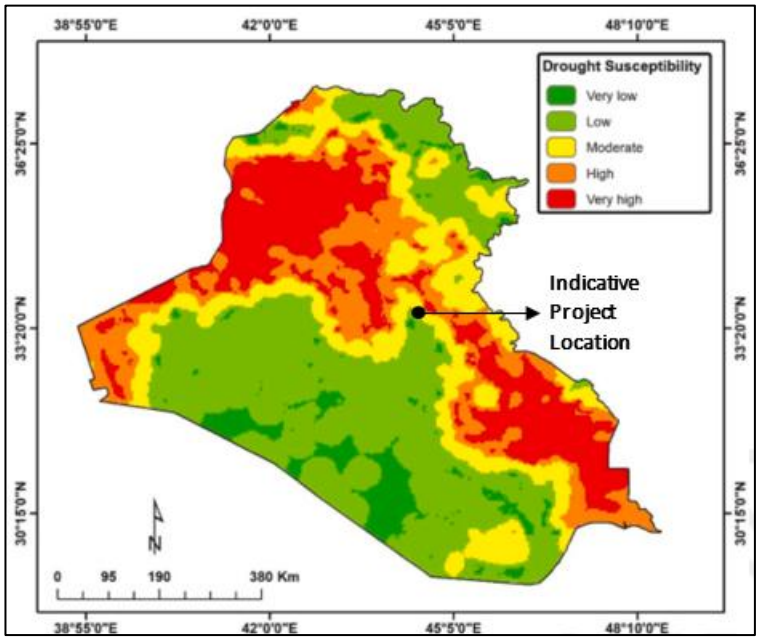
Decreasing rainfall and rising temperatures have led to more frequent and intense droughts across Iraq. These conditions are creating major difficulties for the agricultural sector, lowering crop production and putting food security at risk. Rural communities, where farming is a primary source of income, are particularly affected. Major drought events between 2020 and 2023 resulted in the lowest water levels in decades, reduced agricultural outputs, heightened water scarcity, and increased dependence on groundwater[18]. United Nations agencies and national authorities classify this period as one of the most critical water crises Iraq has faced in 40 years, with climate change expected to intensify future drought cycles[19]. The drought map of Iraq is illustrated in ***Figure*** 4-16.

[17] A,Ali, N.A.Al-Ansari and S.Knutsson (Morphology of Tigris River within Baghdad City) , Hydrol. Earth Syst. Sci., 16, 3783–3790, 2012

[18] https://www.unicef.org/iraq/press-releases/running-dry-water-scarcity-threatens-lives-and-development-iraq

[19] https://www.aljazeera.com/news/2025/8/19/iraq-is-facing-a-water-crisis-hit-by-one-of-its-worst-droughts-in-century#:~:text=Iraq%20is%20experiencing%20its%20driest,rainfall%20and%20upstream%20water%20restrictions.

Figure 4-16: Drought Map of Iraq



Source: https://www.sciencedirect.com/science/article/abs/pii/S147470652400041X

4.2.11.4 Water Scarcity

Iraq depends largely on the Tigris and Euphrates rivers for its water supply, but climate change has reduced the amount of water flowing from these sources. Lower rainfall, increasing temperatures, and the construction of dams in upstream countries such as Turkey and Syria have all contributed to falling river levels. These factors are driving more frequent droughts and water shortages, affecting both agricultural production and access to drinking water.

4.2.11.5 Desertification

Climate change is making Iraq's natural environment increasingly dry, with desertification spreading rapidly across central and southern regions. As fertile land deteriorates, agricultural productivity declines, directly affecting communities that rely on farming for their income. The rise in dust storms now more frequent than before is another result of advancing desertification and has further contributed to worsening air quality.

4.2.11.6 Sandstorm

Sandstorms are a significant natural hazard in Baghdad, occurring frequently during the dry months when high temperatures, low soil moisture, and strong regional winds create favorable conditions for airborne dust. The northwesterly Shamal winds often transport large volumes of sand and fine particulates from surrounding desert areas directly into the city, sharply reducing visibility and disrupting transport and daily activities. These events also result in severe air quality deterioration, with PM10 and PM2.5 levels rising far above international health guidelines. In addition, sandstorms damage infrastructure, mechanical systems, and vehicles, and leave heavy dust deposits across urban and residential areas. Based on news reports, in May 2022, Baghdad was hit by one of the worst sandstorms turning the sky orange and reducing visibility to a few hundred meters. Hospitals across the city reported over 5,000 cases of suffocation, with residents suffering from breathing difficulties due to extremely high dust concentrations. Schools, airports, and government offices were temporarily closed as flights were suspended at Baghdad International Airport[20].

4.3 Socio-economic Sensitivity and Baseline Conditions

4.3.1 Approach

For establishing the social baseline for the project and undertaking the social impact assessment of the project, a phased participatory approach was adopted. Through this approach an attempt was made to integrate the local understanding and perspective into the impact assessment process and identification of the mitigation measures. The purpose of such an approach was to allow for:

[20] https://www.nytimes.com/2025/04/15/world/middleeast/iraq-sandstorm.html

- The triangulation of the information available from secondary sources through the information made available by the local community, both qualitative and quantitative.
- Formulation of the socio-economic baseline based on a combination of primary and secondary qualitative and quantitative data; and
- An understanding to be developed of the local community's perception of the project and its activities and the possible impacts from the same and the desirable mitigation measures.

4.3.2 Country Profile

Iraq is a Middle Eastern country located in the heart of the Fertile Crescent, bordered by Turkey, Iran, Kuwait, Saudi Arabia, Jordan, and Syria. Known as the cradle of civilization, it was home to ancient Mesopotamia, where writing, cities, and early legal systems emerged. Iraq's landscape ranges from the rich river plains of the Tigris and Euphrates to deserts and mountain regions. Its culture blends Arab, Kurdish, Turkmen, and other heritage groups, with deep traditions in literature, art, and religion. Despite decades of conflict, Iraq remains a nation with significant historical legacy, diverse communities, and vast natural resources, especially oil.

As per present data published by Worldometer, the total land area of Iraq is 434,320 sq. km. Thus, the population density is around 106 persons/sq.km.

As per data published on Government website of Commission of Statistics and GIS, Iraq, the total population in Iraq is 46118793 with annual population growth of 2.5 %. The total male and female population in Iraq are 23161604 (50.22 %) and 22957189 (49.78 %) respectively. of which males and females. The sex ratio in Iraq is 991 and child sex ratio is 948. The average family is depicted as 5.7. As per Commission of Statistics and GIS, of total population, around 11.2 % of population belong to 0-4 years of age group, followed by 24.7 % of the population belong to 5-14 years of age group, followed by 60.4 % within 15-64 years of age group and only 3.7 % of the population above 65 % of age group.[21] The Population pyramid for Population of Iraq as per Census 2024 is provided below:

Figure 4-17: Population Pyramid of Iraq, 2024

Source: Official website of Commission of Statistics and GIS, Iraq[22].

[21] The Census Data of 2024 has been not yet published.
[22] https://www.cosit.gov.iq/ar/?utm_source=chatgpt.com

Since the Census Data of 2024 has not yet been published, we have considered the population estimation for 2023 as the various sub-components of population including demographic details are calculated and published. The estimated demographic details of Iraq as per Commission of Statistics and GIS are tabulated below in ***Table*** 4-10.

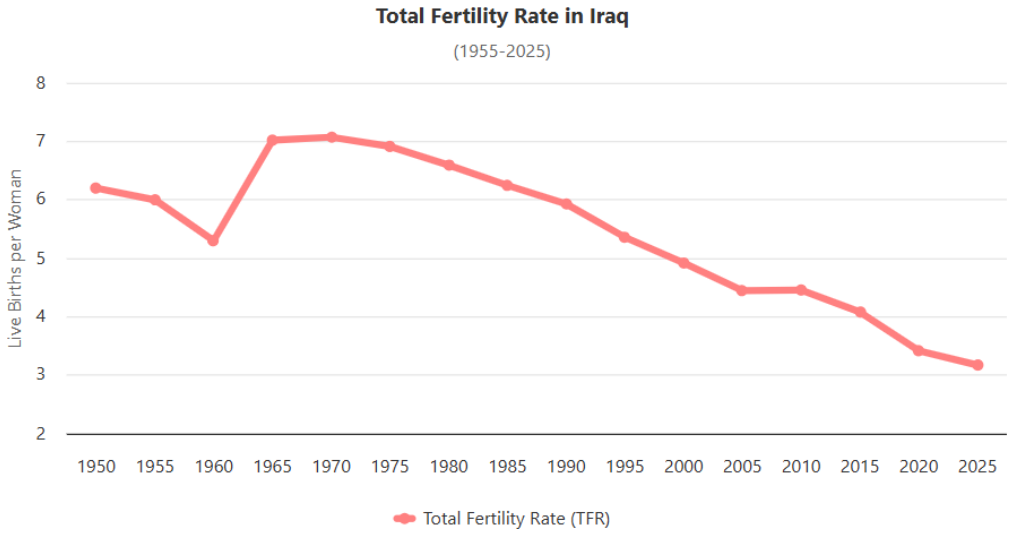
Table 4-10: Estimated Demographic Details of Iraq for 2023

Aspects	Total Population	% of Total Population	Male Population	Male Population (in %)	Female Population	Female Population (in %)
Total Population	43324018	--	21888338	50.52 %	21435680	49.48 %
Total Rural Population	13054273	30.13 %	6612011	50.65 %	6442262	49.35 %
Total Urban Population	30269745	69.87 %	15276327	50.47 %	14993418	49.53 %
Total Population below 4 years	6356624	14.67 %	3263270	51.34 %	3093354	48.66 %

Fertility Rate of Iraq:

Further, as per data published by Worldometers, the total Fertility Rate in Iraq is around 3.2 live births per women which has significantly reduced from 2020 (3.4). The graphical representation of reduction in fertility over period of 75 years has been depicted below in ***Figure*** 4-18. The reduction in a country's fertility rate often signifies important social, economic, and demographic changes. It usually reflects improvements in women's education, greater participation of women in the workforce, and increased access to family planning services and reproductive healthcare. Lower fertility rates can also indicate rising living costs, shifts in cultural norms, and a preference for smaller families due to urbanization or changing lifestyle choices. Economically, a declining fertility rate may contribute to slower population growth, which can ease pressure on resources and public services in the short term. However, it may also lead to an aging population over time, creating challenges such as a shrinking labor force and increased dependency ratios. Overall, a reduced fertility rate signals a transition toward more modern socioeconomic conditions, with both opportunities and long-term policy considerations.

Figure 4-18: Fertility Rates in Iraq



Source: United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition.[23]

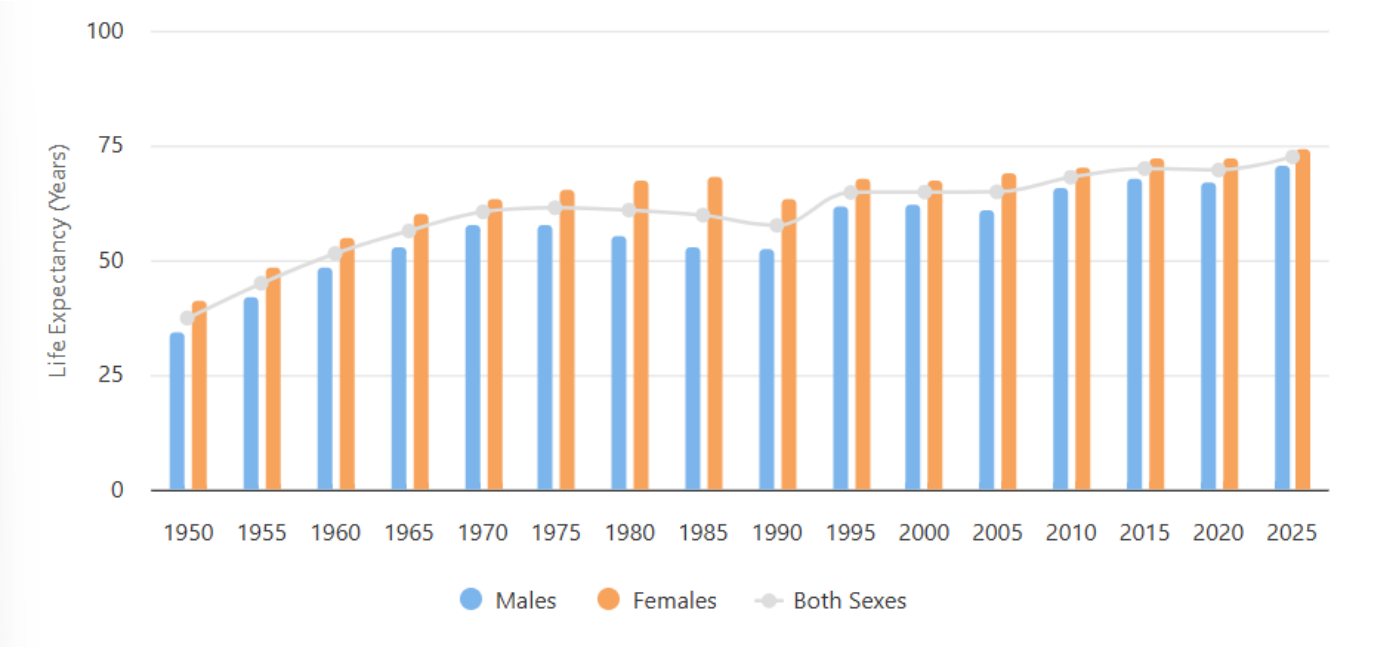
Life Expectancy in Iraq

Further, as per data published by Worldometers, the life expectancy at birth in Iraq is 72.5 years with life expectancy at birth for males is 70.6 and for females is 74.3 years respectively. As per analysis of the graphical representation depicted in ***Figure*** 4-19. it is observed that there is increase in life expectancy of Iraq over the years. This upward trend signifies improvements in overall living

[23] https://www.worldometers.info/demographics/iraq-demographics/#sources

conditions and the well-being of the population in Iraq. It often reflects better access to quality healthcare, advancements in medical technology, and more effective disease prevention and treatment. Higher life expectancy also suggests improved nutrition, sanitation, and public health infrastructure, as well as greater health awareness among citizens. In many cases, it indicates economic progress, since rising incomes allow governments and individuals to invest more in health, education, and safer living environments.

Figure 4-19: Trend showing increase of Life Expectancy at Birth

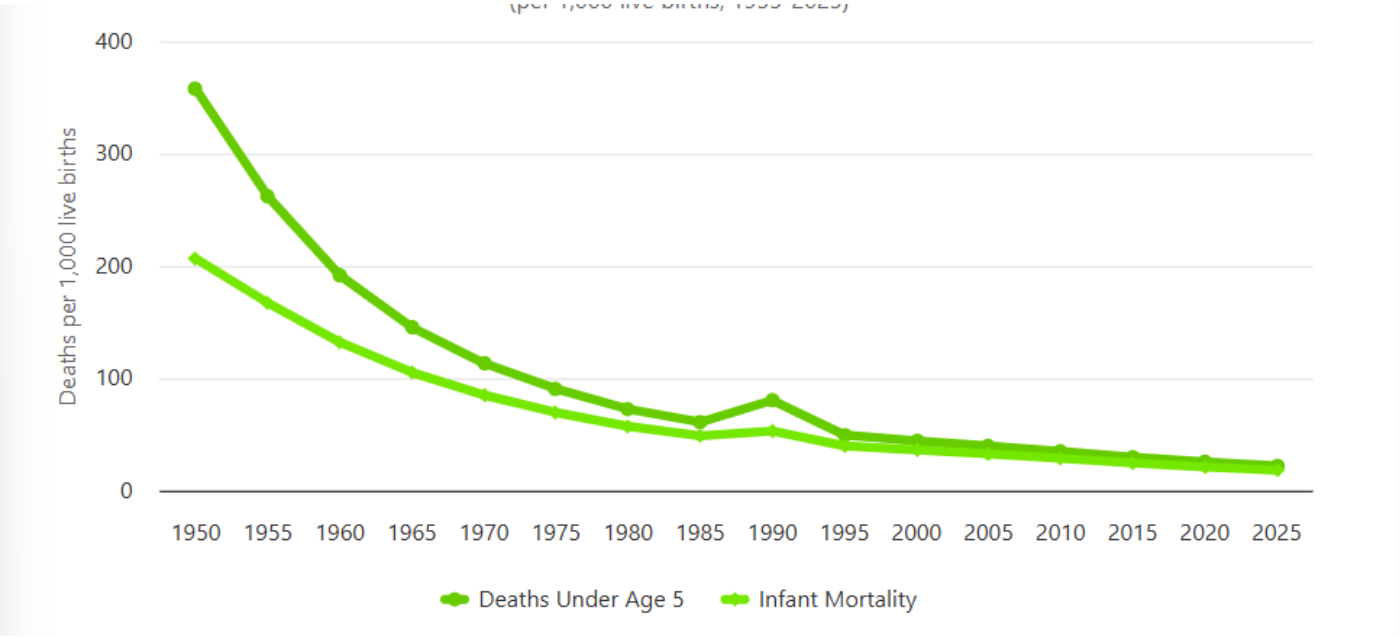


Source: https://www.worldometers.info/demographics/iraq-demographics/#sources

Infant Mortality Rate and Deaths of Children below 5 years of Age

As per data published on Worldometers website, the infant mortality rate of Iraq is 18.3 (which implies death of 18.3 numbers of infants per 1000 live births) and the death of children below five years of age is around 22 per 1000 live births. The graph depicted in ***Figure*** 4-20 shows trend of reduction of infant mortality rate and death of children under 5.

Figure 4-20: Trend of reduction of Infant Mortality Rate and Death of Children below 5 Years



Source: https://www.worldometers.info/demographics/iraq-demographics/#sources

A reduction in infant mortality rates and deaths of children under five generally signifies significant improvements in a country's overall health and development. It often reflects better access to quality healthcare, including maternal and neonatal services, vaccinations, and treatment for common childhood illnesses. Improved nutrition, clean drinking water, and adequate sanitation also play critical roles in enhancing child survival. Additionally, lower child mortality rates indicate higher levels of maternal education and greater awareness of healthy practices within families and communities. This improvement is often associated with stronger public health policies, effective disease prevention programs, and economic progress that enables better living conditions. Overall, declining child and infant mortality is a strong indicator that a country is advancing in terms of health, social well-being, and human development.

Educational Profile and Educational Facilities

As per data shared by World Bank[24], the literacy rate in Iraq is 84 % as of 2021, with male literacy rate of 90 % and female literacy rate of 78 %.

The total number of educational institutions including type of school, universities, colleges etc. as per Commission of Statistics and GIS department estimates of 2023 is around 215213. The educational profile for Iraq has been tabulated below in ***Table*** 4-11.

Table 4-11: Educational Profile in Iraq as of 2023

Type of Institution	No of Institution
Kindergarten	1268
Primary Schools	203719
Secondary Schools	9862
Vocational Training Centers/Institutes	331
Fine Arts Institute	33
Public Universities	Not Available
Private Universities	Not Available

Source: https://www.cosit.gov.iq/ar/2013-02-25-07-39-31

Health facilities in Iraq

As per report published by World Health Organization on Iraq Health Information System Review and Assessment, 2011[25] the total health facilities present in Iraq is 2652. Out of the same there are 168 General; and specialized public hospitals, 61 teaching hospitals (General and Specific), followed by 92 private hospitals, 1185 Primary Health Centers headed by medical doctors and around 1146 Primary Health Centers headed by health workers.

Occupation Profile in Iraq

As per data published by World Bank group[26], the rate of Labor Force Participation in Iraq as of 2024 is 41 %, this implies that 41 % of the population above 15 years of age is either involved in economic activities or are seeking for the same. The gender disaggregated data for Labor Force Participation is not available for year 2024, however as per data as of 2021 the male labor force participation rate in 68.2 % and the same for females is 10.8 % respectively.

Further as per, published data on Commission of Statistics and GIS website, the total economic activity rate of Iraq is 38.1 % for 2024, and the percentage of unemployment in Iraq is around 13.5 % respectively.

4.3.3 Governorate Profile: Baghdad

Baghdad Governorate is one of Iraq's most important and populous regions, centered around the nation's capital, Baghdad. Located along the Tigris River, it serves as the political, economic, and cultural heart of the country. The governorate includes both the dense urban core of Baghdad—known for its historic neighborhoods, markets, universities, and governmental institutions—and surrounding suburban districts. The Baghdad governorate is the smallest governorate in Iraq as far as land area is concerned with

[24] https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=IQ
[25] https://applications.emro.who.int/dsaf/libcat/emropd_110.pdf
[26] https://data.worldbank.org/indicator/SL.TLF.CACT.MA.NE.ZS?locations=IQ

total area of 4071 sq.km. The Tigris River passing through Baghdad divides the governorate in almost two equal halves. The districts and regions of Baghdad on western side (left bank) of Tigris River is called as Al-Karkh and the districts and region on eastern side (right bank) of Tigris River is called as Al-Rusafa.

The Baghdad governorate is land-locked, it is surrounded by Diyala governorate on east, Anbar governorate on west, Babylon governorate on south and Salah al-Din governorate on north directions respectively. [27]

There is total 14 districts falling under Baghdad governorate, out of which 5 districts within Al-Rusafa region namely Adhamiyah district, Al-Karrada district, Sadr City District, Rusafa and 9 Nissan (New Baghdad) district. Further the districts falling under Al-Karkh region includes Karkh, Khadhimiyah, Mansour, Al Rashid, falling within city limits and five cities beyond city limits including Al-Mada'in district, Taji district, Tarmiya district, Abu Ghraib and Mahmudiya district respectively. Out of 14 districts, 9 districts fall under urban jurisdiction and remaining 5 under rural/suburban/peripheral districts.

4.3.3.1 Demographic Profile of Baghdad

The demographic profile of Baghdad governorate is tabulated below in ***Table*** 4-12.

Table 4-12 Demographic Details of Baghdad as of 2023

Variables	Baghdad
Area (sq. km)	4071
Total Population	9265213
Population density	2275 persons/sq.km
Males	4701315 (50.69 %)
Females	4563898 (49.31 %)
Total Urban Population	8080012 (87.21 %)
Total Urban Male Population	4091107 (50.63 %)
Total Urban Female Population	3988905 (49.37 %)
Total Rural Population	1185201 (12.79 %)
Total Rural Male Population	610880 (51.54 %)
Total Rural Female Population	574993 (48.46 %)
Sex Ratio	971
Child Sex Ratio (data as of 2021)	948

Source: https://www.cosit.gov.iq/ar/2013-01-31-08-43-38

The total population of Baghdad governorate is around 9265213 of which male and female constitute 50.69 % and 49.31 % respectively. Baghdad governorate is predominantly urban governorate with total urban population constituting around 87.21 % and rural population of around 12.79 % respectively. The sex ratio of Baghdad governorate is around 971 which is considerably lower than sex ration of Iraq country which is 991.m The child sex ratio (population below 4 years of age) of Baghdad is around 948 (similar that of Iraq country).

4.3.3.2 Literacy and Education

In Baghdad Governorate, the gross enrolment rate for primary education in the 2019/2020 school year was 100% for girls and 104% for boys, while the net enrolment rate stood at 92% for girls and 94% for boys. At the secondary level, gross enrolment was 81% for girls and 82% for boys, with net enrolment rates of 70% for girls and 62% for boys. School completion rates were 73% for primary, 44% for lower secondary, and 32% for upper secondary education, whereas out-of-school rates were 8% at primary, 20% at lower secondary, and 46% at upper secondary level.[28]

[27] https://www.ecoi.net/en/file/local/1074303/1222_1190099310_iraq-governates-and-districts.pdf
[28]https://www.euaa.europa.eu/sites/default/files/publications/2021_11_EASO_COI_Report_Iraq_Key_socioeconomic_indicators_for_Baghdad_Basrah_and_Sulaymaniyah.pdf

According to the 2014 United Nations Human Development Report, youth illiteracy in Baghdad was 9.6% overall, with 11.5% among females and 8.2% among males. Furthermore, the governorate accounts for 48% of Iraq's universities and colleges and 53% of its scientific departments, making it the leading region for tertiary education. Six years of schooling, from ages six to twelve, are compulsory in Baghdad, as in the rest of Iraq.

Public schools in Baghdad often operate in shifts because multiple schools share the same building, and class sizes typically average around 50 students. Additionally, there is a shortage of qualified teachers, and the quality of education in both public and many private schools falls short of international standards. Private school enrolment costs and education quality vary significantly.

4.3.3.3 Occupational Profile

In Baghdad governorate, the percentage of officially employed population is 56.3%, pensioners around 27%, an officially registered and registered unemployed people of around 13.7%[29].

4.3.3.4 Social and Physical Infrastructure in the Study Area

4.3.3.4.1 Water Infrastructure & Sewage and Electricity supply in the Study Area

Based on discussion with project proponent it was inferred that the major source of water in Baghdad is Municipality supplied water, the same is used for drinking, construction purposes, domestic uses etc. Further, there are also bore holes dug at individual household level.

Further in 2018 and 2019, high levels of cadmium were detected in Baghdad's drinking water, posing serious health risks such as kidney failure and cancer. The highest concentrations were found in water sourced from the Tigris River and local wells, though contamination was also reported in bottled water.[30]

Baghdad's sewer system currently serves approximately 76% to 90% of households, but its aging infrastructure makes it inefficient. Additionally, the city's electricity supply from the grid is inadequate to fully operate the sewage treatment plant.

4.3.3.4.2 Education Infrastructure in the Study Area

In Baghdad Governorate, the gross enrolment rate for primary education during the 2019/2020 school year was 100% for girls and 104% for boys, while the net enrolment rate stood at 92% for girls and 94% for boys. At the secondary level, the gross enrolment rate was 81% for girls and 82% for boys, with net enrolment rates of 70% for girls and 62% for boys. School completion rates were 73% for primary, 44% for lower secondary, and 32% for upper secondary education. Conversely, out-of-school rates were 8% at the primary level, 20% at lower secondary, and 46% at upper secondary.[31]

The latest United Nations Human Development Report (2014) indicated that youth illiteracy in Baghdad was 9.6% overall, with 11.5% among females and 8.2% among males.

4.3.3.4.3 Health Facilities

According to the Ministry of Health's 2020 Annual Statistical Report[32], Baghdad Governorate had a total of 260 primary health care centres (PHCs), comprising 213 main centres and 47 sub-centres. Nearly 90% of these PHCs (232) were managed by physicians, while 28 centres were overseen by other health professionals. On average, each PHC served approximately 33,000 people. In addition, Baghdad hosted 51 specialised health centres, including 20 dental clinics, 3 centres for respiratory diseases, 2 centres for asthma and allergies, and 26 other specialized facilities. Nine medical institutions also functioned as training health centres.

At the secondary and tertiary care levels, Baghdad had 105 hospitals and specialized inpatient centers, split between 52 public hospitals and 53 private clinics. Of the public hospitals, 18 were teaching hospitals and 34 were non-teaching facilities. This group included 19 general hospitals, 28 specialised hospitals, and 5 tertiary-level care centres. Statistically, the availability of public hospitals at the secondary and tertiary care level equated to 0.6 hospitals per 100,000 population.[33]

[29] https://bdeex.com/naselenie/iraq/baghdad/

[30]https://www.euaa.europa.eu/sites/default/files/publications/2021_11_EASO_COI_Report_Iraq_Key_socioeconomic_indicators_for_Baghdad_Basrah_and_Sulaymaniyah.pdf

[31]https://www.euaa.europa.eu/sites/default/files/publications/2021_11_EASO_COI_Report_Iraq_Key_socioeconomic_indicators_for_Baghdad_Basrah_and_Sulaymaniyah.pdf

[32] https://moh.gov.iq/upload/1540.pdf

[33]https://www.euaa.europa.eu/sites/default/files/publications/2021_11_EASO_COI_Report_Iraq_Key_socioeconomic_indicators_for_Baghdad_Basrah_and_Sulaymaniyah.pdf

There is various health centres situated within 10 km radius of project site. The nearest hospitals and health centres include Ibn Sina Hospital (around 1.2 km from project site and the same is situated within International zone) Saint Raphael hospital (around 2.5 km from project site), Royal Private hospital (around 2.2 km from project site), Al Wariria Private Hospital (Around 2.5 km from project site), Baghdad Teaching hospital (Around 5 km from project site), and Al Khayal Private Hospital (around 6.5 km from project site). The nearest hospital to the project is Ibn Sina Hospital which was long recognized as the primary medical facility inside Baghdad's Green Zone, gaining prominence during the Iraq War for its treatment of coalition personnel and Iraqi civilians with severe combat injuries. In 2009, the hospital was returned to Iraqi control, and military medical operations were relocated to other sites. Today, although the Green Zone is largely reserved for government institutions and diplomatic missions, Ibn Sina Hospital continues to operate as a general hospital, with its precise role and administrative arrangements shaped by its location within the highly secured area.

During site visit it was inferred that project proponent has signed tie-ups with Saint Raphael hospital and Government Medical Hospital in Baghdad where the workers are referred by doctors in the medical aid centre of project proponent. Reportedly in case of medical emergency, basic first aid is provided by the doctor/nurse deployed in project clinic and later they are transferred to the above-mentioned tie-up hospitals.

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4.4 Ecological Baseline

To understand and establish an ecological baseline of the study area, a desk-based study and site assessment has been undertaken. The main objective behind this exercise is to identify the possible impacts on the species and habitats (present in the vicinity) due to the project-related activities, which ultimately help to select the mitigation and management strategies.

4.4.1 Objectives

The survey was conducted with the following objectives,

- Identification of internationally and/or nationally recognized areas of high biodiversity value e.g., Protected Areas (PAs), Key Biodiversity Areas (KBAs) / Important Bird and Biodiversity Areas (IBAs), Alliance for Zero Extinction (AZE) sites, etc.
- Identification of different habitats (natural, modified, and critical) falling within core and buffer zones.
- Documentation of floral and faunal [specifically herpetofauna (reptiles + amphibians), birds, and mammals] species based on direct sightings, calls, pugmarks (if any), etc.
- Trace out of any endangered or protected or restricted range floral species. Identification of any threatened (as per IUCN Red List), scheduled (as per Wildlife (Protection) Act, 1972), endemic or restricted-range and migratory or congregatory faunal species (as defined in IFC PS 6) from the study area.
- Identification of wildlife migratory corridors, avian migratory routes, and other important areas for ecological reasons such as breeding, nesting, foraging, resting, etc.

4.4.2 Ecological Baseline - Methods

To understand the existing ecological conditions in the study area, an ecological baseline has been prepared with the help of information gathered under, i. Literature Review and ii. Field Data Collection.

4.4.2.1 Literature Review

A literature review has been carried out to identify the presence of internationally and/or nationally recognized areas of high biodiversity value e.g., Protected Areas (PAs), Alliance for Zero Extinction (AZE) sites, etc.; and habitat of IUCN Threatened and Restricted-range species; and Key Biodiversity Areas (KBAs), which include Important Bird and Biodiversity Areas (IBAs) in and around the proposed project location. A list of floral and faunal species was also prepared along with their conservation status (as per IUCN red list) by utilizing collected secondary data during literature review. The dominant habitats in and around the project location were also identified with the help of google earth imagery and other available secondary data.

4.4.2.2 Field data Collection

A field survey was conducted to determine the existing ecological conditions (habitats, flora and fauna) within the study area. This baseline facilitates an assessment of the project's impacts upon ecological environment as well as it helps the development of appropriate mitigation measures. Habitats, which may support good biodiversity i.e., Open spaces, vegetation area, water bodies, etc. has been focused during the survey.

Habitat Survey

Different habitats (both natural, modified), available within the study area identified by the desktop review, were verified through site visit. Data regarding the type and quality of habitat with reference to flora and fauna supported were collected.

Floral Survey

The floral diversity of the study area was recorded by visual observation during the site visit and identified using published manuals. The information (Scientific publications) dealing with the floristic diversity of the related area available in the public domain were also considered in the survey.

Faunal Survey

Faunal species (specifically reptiles, birds, and mammals) from the study areas were recorded based on direct sightings, indirect evidence such as burrows, nests, etc.;

Identification and classification of any species recognized as Threatened (in accordance with International Union for the Conservation of Nature [IUCN] Red List Online Version 2025-2) and Identification of areas which are important or sensitive

for ecological reasons including their breeding, nesting, foraging, resting, overwintering areas including wildlife migratory corridors/avian migratory routes.

The Project site is located in an urban setup, within the Green Zone area of Baghdad City. Green Zone area attracts highest security due to the presence of sensitive locations and walking is totally prohibited in this area due to safety reasons. Therefore, a site walk over around the project site was not possible during the site visit. Photography is also prohibited in this area due to security concern. Therefore, a limited activity with respect to the assessment of ecological environment was performed during the site visit.

4.4.3 Ecological Baseline - Results

4.4.3.1 Literature Review - eBird Database

The historical data regarding the presence of birds in the region was extracted from the eBird Database. The major objective to extract this information was to see the incidence of migratory birds, vultures, and raptors in the region. As per the e-bird database[34],there are 227 avian species which have distribution in this region. some of the species are *Eurasian Sparrowhawk, Common Myna, Greater Hoopoe-lark, Mallard, Anser answer, Great White Egret, Gray Heron Eurasian Bittern, Eurasian Eagle-owl, Eurasian Thick-knee, Long-legged Buzzard, Greater Short-toed Lark etc. Moreover, 74 migratory species have been reported from this region. The migratory species which have ranges within the study area are Common Redstart, Common Redstart, Common Chiffchaff, Mountain Chiffchaff, Willow Warbler, Dunnock, Northern Pintail, Common Teal, Common Teal, Lesser White-fronted Goose, Eurasian Bittern, Red Knot, Little Stint, Ruff, Temminck's Stint, Rufous-tailed Scrub-Robin, Caspian Plover, Common Shelduck, Common redshank, Eurasian Blackbird, Song Thrush, Fieldfare* etc. The detailed list of Avian diversity reported from this region is given in ***Table*** 4-13 and ***Table*** 4-14.

Table 4-13 Avian diversity reported from this region

Sl No	Scientific name	Common Name	IUCN status (Version 2025-2)	Migratory status	Reported/ Observed
1	Accipiter nisus	Eurasian Sparrowhawk	LC	R	Reported
2	Acridotheres tristis	Common Myna	LC	R	Reported
3	Acrocephalus griseldis	Basra Reed Warbler	EN	M	Reported
4	Acrocephalus melanopogon	Moustached Warbler	LC	M	Reported
5	Acrocephalus palustris	Marsh Warbler	LC	R	Reported
6	Acrocephalus scirpaceus	Common Reed Warbler	LC	R	Reported
7	Actitis hypoleucos	Common Sandpiper	LC	R	Reported
8	Alaemon alaudipes	Greater Hoopoe-lark	LC	R	Reported
9	Alauda arvensis	Eurasian Skylark	LC	M	Reported
10	Alaudala heinei	Turkestan Short-toed Lark	lc	R	Reported
11	Alcedo atthis	Common Kingfisher	LC	R	Reported
12	Ammomanes deserti	Desert Lark	LC	R	Reported
13	Ammoperdix griseogularis	See-see Partridge	LC	R	Reported
14	Anas acuta	Northern Pintail	LC	M	Reported
15	Anas crecca	Common Teal	LC	M	Reported
16	Anas platyrhynchos	Mallard	LC	R	Reported
17	Anser albifrons	Common Teal	LC	M	Reported
18	Anser anser	Anser anser	LC	M	Reported

[34] https://ebird.org/region/IQ-BG/bird-list

Sl No	Scientific name	Common Name	IUCN status (Version 2025-2)	Migratory status	Reported/ Observed
19	Anser erythropus	Lesser White-fronted Goose	Vu	M	Reported
20	Anthus campestris	Tawny Pipit	LC	R	Reported
21	Anthus pratensis	Meadow Pipit	LC	M	Reported
22	Anthus spinoletta	Water Pipit	LC	M	Reported
23	Anthus trivialis	Tree Pipit	LC	R	Reported
24	Apus apus	Common Swift	LC	R	Reported
25	Apus pallidus	Pallid Swift	LC	R	Reported
26	Aquila heliaca	Eastern Imperial Eagle	Vu	R	Reported
27	Aquila nipalensis	Steppe Eagle	EN	M	Reported
28	Ardea alba	Great White Egret	LC	R	Reported
29	Ardea cinerea	Gray Heron	LC	R	Reported
30	Ardea purpurea	Purple Heron	LC	R	Reported
31	Ardeola ralloides	Squacco Heron	LC	R	Reported
32	Arenaria interpres	Ruddy Turnstone	NT	R	Reported
33	Argya altirostris	Iraq Babbler	LC	R	Reported
34	Asio flammeus	Short-eared Owl	LC	R/M	Reported
35	Athene noctua	Little Owl	LC	R	Reported
36	Aythya ferina	Common Pochard	VU	R	Reported
37	Aythya fuligula	Tufted Duck	LC	M	Reported
38	Aythya nyroca	Ferruginous Duck	NT	M	Reported
39	Botaurus stellaris	Eurasian Bittern	LC	M	Reported
40	Bubo bubo	Eurasian Eagle-owl	LC	R	Reported
41	Burhinus oedicnemus	Eurasian Thick-knee	LC	R	Reported
42	Buteo rufinus	Long-legged Buzzard	LC	R	Reported
43	Calandrella brachydactyla	Greater Short-toed Lark	LC	R	Reported
44	Calidris alba	Sanderling	LC	R	Reported
45	Calidris alpina	Dunlin	LC	R	Reported
46	Calidris canutus	Red Knot	NT	M	Reported
47	Calidris falcinellus	Broad-billed Sandpiper	VU	R	Reported
48	Calidris ferruginea	Curlew Sandpiper	VU	R	Reported
49	Calidris minuta	Little Stint	LC	M	Reported
50	Calidris pugnax	Ruff	LC	M	Reported
51	Calidris temminckii	Temminck's Stint	LC	M	Reported
52	Caprimulgus aegyptius	Egyptian Nightjar	LC	R	Reported
53	Carduelis carduelis	European Goldfinch	LC	R	Reported
54	Carpospiza brachydactyla	Pale Sparrow	LC	R	Reported
55	Cercotrichas galactotes	Rufous-tailed Scrub-Robin	LC	M	Reported

Sl No	Scientific name	Common Name	IUCN status (Version 2025-2)	Migratory status	Reported/ Observed
56	Ceryle rudis	Pied Kingfisher	LC	R	Reported
57	Cettia cetti	Cetti's Warbler	LC	R	Reported
58	Charadrius alexandrinus	Kentish Plover	LC	R	Reported
59	Charadrius asiaticus	Caspian Plover	LC	M	Reported
60	Charadrius dubius	Little Ringed Plover	LC	R	Reported
61	Charadrius hiaticula	Common Ringed Plover	LC	R	Reported
62	Chlamydotis macqueenii	Asian Houbara	VU	R	Reported
63	Chlidonias hybrida	Whiskered Tern	LC	R	Reported
64	Chlidonias leucopterus	White-winged Tern	LC	R	Reported
65	Chloris chloris	European Greenfinch	LC	M	Reported
66	Ciconia ciconia	White Stork	LC	R	Reported
67	Circaetus gallicus	Short-toed Snake-Eagle	LC	R	Reported
68	Circus aeruginosus	Western Marsh Harrier	LC	R	Reported
69	Circus cyaneus	Hen Harrier	LC	M	Reported
70	Circus macrourus	Pallid Harrier	NT	R	Reported
71	Circus pygargus	Montagu's Harrier	LC	M	Reported
72	Cisticola juncidis	Zitting Cisticola	LC	R	Reported
73	Cisticola juncidis	European Greenfinch	LC	R	Reported
74	Clanga clanga	Greater Spotted Eagle	Vu	R	Reported
75	Columba livia	Rock dove	LC	R	Reported
76	Columba palumbus	Common Wood-Pigeon	LC	R	Reported
77	Coracias benghalensis	Indian Roller	NT	R	Reported
78	Coracias garrulus	European Roller	LC	R	Reported
79	Corvus corax	Common Raven	LC	R	Reported
80	Corvus corone	Carrion Crow	LC	R	Reported
81	Corvus frugilegus	Rook	LC	M	Reported
82	Corvus monedula	Eurasian Jackdaw	LC	M	Reported
83	Corvus ruficollis	Brown-necked Raven	LC	R	Reported
84	Curruca communis	Common Whitethroat	LC	M	Reported
85	Curruca crassirostris	Eastern Orphean Warbler	LC	R	Reported
86	Curruca curruca	Lesser Whitethroat	LC	M	Reported
87	Curruca mystacea	Menetries's Warbler	LC	R	Reported
88	Curruca nana	Asian Desert Warbler	LC	R	Reported
89	Curruca nisoria	Barred Warbler	LC	M	Reported
90	Cursorius cursor	Cream-coloured Courser	LC	R	Reported
91	Egretta garzetta	Little Egret	LC	R	Reported
92	Emberiza calandra	Corn Bunting	LC	R	Reported

Sl No	Scientific name	Common Name	IUCN status (Version 2025-2)	Migratory status	Reported/ Observed
93	Emberiza cineracea	Cinereous Bunting	NT	M	Reported
94	Emberiza schoeniclus	Reed Bunting	LC	M	Reported
95	Erithacus rubecula	European Robin	LC	M	Reported
96	Eudromias morinellus	Eurasian Dotterel	LC	R	Reported
97	Falco cherrug	Saker Falcon	En	R	Reported
98	Falco columbarius	Merlin	LC	M	Reported
99	Falco naumanni	Lesser Kestrel	LC	M	Reported
100	Falco naumanni	Lesser Kestrel	LC	R	Reported
101	Falco peregrinus	Peregrine Falcon	LC	R	Reported
102	Falco subbuteo	Eurasian Hobby	LC	R	Reported
103	Falco tinnunculus	Common Kestrel	LC	R	Reported
104	Francolinus francolinus	Black Francolin	LC	R	Reported
105	Fringilla coelebs	Common Chaffinch	LC	R	Reported
106	Fringilla montifringilla	Brambling	LC	M	Reported
107	Fulica atra	Eurasian Coot	LC	R	Reported
108	Galerida cristata	Crested Lark	LC	R	Reported
109	Gallinago gallinago	Common Snipe	LC	M	Reported
110	Gallinago media	Great Snipe	NT	M	Reported
111	Gallinula chloropus	Common Moorhen	LC	R	Reported
112	Glareola pratincola	Collared Pratincole	LC	R	Reported
113	Grus grus	Common Crane	LC	R	Reported
114	Gyps fulvus	Griffon Vulture	LC	R	Reported
115	Halcyon smyrnensis	White-throated Kingfisher	LC	R	Reported
116	Haliaeetus albicilla	White-tailed Sea-eagle	LC	M	Reported
117	Hieraaetus pennatus	Booted Eagle	LC	R	Reported
118	Himantopus himantopus	Black-winged Stilt	LC	R	Reported
119	Hippolais languida	Upcher's Warbler	LC	R	Reported
120	Hirundo rustica	Barn Swallow	LC	R	Reported
121	Hypocolius ampelinus	Hypocolius	LC	M	Reported
122	Iduna pallida	Eastern Olivaceous Warbler	LC	M	Reported
123	Ixobrychus minutus	Common Little Bittern	LC	R	Reported
124	Lanius excubitor	Great Grey Shrike	LC	R	Reported
125	Lanius isabellinus	Isabelline Shrike	LC	M	Reported
126	Lanius minor	Lesser Grey Shrike	LC	M	Reported
127	Lanius nubicus	Masked Shrike	LC	M	Reported
128	Lanius phoenicuroides	Red-tailed Shrike	LC	M	Reported
129	Lanius senator	Woodchat Shrike	NT	R	Reported

Sl No	Scientific name	Common Name	IUCN status (Version 2025-2)	Migratory status	Reported/ Observed
130	Larus armenicus	Armenian Gull	LC	M	Reported
131	Larus cachinnans	Caspian Gull	LC	M	Reported
132	Larus canus	Mew Gull	LC	R	Reported
133	Larus fuscus	Lesser Black-backed Gull	LC	R	Reported
134	Larus genei	Slender-billed Gull	LC	R	Reported
135	Larus ichthyaetus	Pallas's Gull	LC	R	Reported
136	Larus ridibundus	Black-headed Gull	LC	R	Reported
137	Limosa lapponica	Bar-tailed Godwit	NT	R	Reported
138	Limosa limosa	Black-tailed Godwit	LC	R	Reported
139	Linaria cannabina	Common Linnet	LC	R	Reported
140	Locustella fluviatilis	River Warbler	LC	M	Reported
141	Lullula arborea	Woodlark	LC	R	Reported
142	Luscinia megarhynchos	Common Nightingale	LC	R	Reported
143	Luscinia svecica	Bluethroat	LC	R	Reported
144	Lymnocryptes minimus	Jack Snipe	LC	R	Reported
145	Mareca penelope	Eurasian Wigeon	LC	M	Reported
146	Mareca strepera	Gadwall	LC	R	Reported
147	Marmaronetta angustirostris	Marbled Duck	NT	R	Reported
148	Melanocorypha calandra	Calandra Lark	LC	R	Reported
149	Mergellus albellus	Smew	LC	M	Reported
150	Merops persicus	Blue-cheeked Bee-eater	LC	R	Reported
151	Microcarbo pygmaeus	Pygmy Cormorant	LC	R	Reported
152	Milvus migrans	Black Kite	LC	R	Reported
153	Motacilla alba	White Wagtail	LC	R	Reported
154	Motacilla cinerea	Grey Wagtail	LC	R	Reported
155	Motacilla flava	Western Yellow Wagtail	LC	M	Reported
156	Muscicapa striata	Spotted Flycatcher	LC	R	Reported
157	Neophron percnopterus	Egyptian Vulture	En	R	Reported
158	Netta rufina	Red-crested Pochard	LC	R	Reported
159	Numenius arquata	Eurasian Curlew	NT	M	Reported
160	Nycticorax nycticorax	Black-crowned Night Heron	LC	R	Reported
161	Oenanthe chrysopygia	Red-tailed Wheatear	LC	M	Reported
162	Oenanthe deserti	Desert Wheatear	LC	R	Reported
163	Oenanthe finschii	Finsch's Wheatear	LC	R	Reported
164	Oenanthe hispanica	Black-eared Wheatear	LC	M	Reported
165	Oenanthe isabellina	Isabelline Wheatear	LC	R	Reported
166	Oenanthe oenanthe	Northern Wheatear	LC	R	Reported

Sl No	Scientific name	Common Name	IUCN status (Version 2025-2)	Migratory status	Reported/ Observed
167	Oenanthe xanthoprymna	Kurdish Wheatear	LC	M	Reported
168	Oxyura leucocephala	White-headed Duck	EN	M	Reported
169	Pandion haliaetus	Osprey	LC	M	Reported
170	Passer domesticus	House Sparrow	LC	R	Reported
171	Passer hispaniolensis	Spanish Sparrow	LC	R	Reported
172	Passer moabiticus	Dead Sea Sparrow	LC	M	Reported
173	Passer moabiticus	Dead Sea Sparrow	LC	R	Reported
174	Pernis apivorus	European Honey-buzzard	LC	M	Reported
175	Phalacrocorax carbo	Great Cormorant	LC	R	Reported
176	Phoenicopterus roseus	Greater Flamingo	LC	M	Reported
177	Phoenicurus ochruros	Black Redstart	LC	R	Reported
178	Phoenicurus phoenicurus	Common Redstart	LC	M	Reported
179	Phoenicurus phoenicurus	Common Redstart	LC	M	Reported
180	Phylloscopus collybita	Common Chiffchaff	LC	M	Reported
181	Phylloscopus sindianus	Mountain Chiffchaff	LC	M	Reported
182	Phylloscopus trochilus	Willow Warbler	LC	M	Reported
183	Pica pica	Eurasian Magpie	LC	R	Reported
184	Plegadis falcinellus	Glossy Ibis	LC	R	Reported
185	Pluvialis squatarola	Grey Plover	VU	R	Reported
186	Podiceps cristatus	Great Crested Grebe	LC	R	Reported
187	Porphyrio porphyrio	Gray-headed Swamphen	LC	R	Reported
188	Prunella modularis	Dunnock	LC	M	Reported
189	Pterocles alchata	Pin-tailed Sandgrouse	LC	R	Reported
190	Pterocles orientalis	Black-bellied Sandgrouse	LC	R	Reported
191	Pterocles senegallus	Spotted Sandgrouse	LC	R	Reported
192	Pycnonotus leucotis	White-eared Bulbul	LC	R	Reported
193	Rallus aquaticus	Western Water Rail	LC	R	Reported
194	Recurvirostra avosetta	Pied Avocet	LC	R	Reported
195	Remiz pendulinus	Eurasian Penduline-Tit	LC	M	Reported
196	Rhodospiza obsoleta	Desert Finch	LC	R	Reported
197	Riparia riparia	Collared sand martin	LC	R	Reported
198	Saxicola torquatus	Common Stonechat	LC	R	Reported
199	Spatula clypeata	Northern Shoveler	LC	M	Reported
200	Spilopelia senegalensis	Laughing Dove	LC	R	Reported
201	Sterna hirundo	Common Tern	LC	R	Reported
202	Sternula albifrons	Little Tern	LC	R	Reported
203	Streptopelia decaocto	Eurasian Collared-Dove	LC	R	Reported

Sl No	Scientific name	Common Name	IUCN status (Version 2025-2)	Migratory status	Reported/ Observed
204	Streptopelia turtur	European Turtle-dove	Vu	R	Reported
205	Sturnus vulgaris	Common Starling	LC	R	Reported
206	Sylvia borin	Garden Warbler	LC	M	Reported
207	Tachybaptus ruficollis	Little Grebe	LC	R	Reported
208	Tadorna ferruginea	Ruddy Shelduck	LC	R	Reported
209	Tadorna tadorna	Common Shelduck	LC	M	Reported
210	Tringa erythropus	Spotted Redshank	LC	R	Reported
211	Tringa nebularia	Common Greenshank	LC	R	Reported
212	Tringa ochropus	Green Sandpiper	LC	R	Reported
213	Tringa stagnatilis	Marsh Sandpiper	LC	R	Reported
214	Tringa totanus	Common Redshank	LC	M	Reported
215	Troglodytes troglodytes	Northern Wren	LC	R	Reported
216	Turdus iliacus	Redwing	LC	R	Reported
217	Turdus merula	Eurasian Blackbird	LC	M	Reported
218	Turdus philomelos	Song Thrush	LC	M	Reported
219	Turdus pilaris	Fieldfare	LC	M	Reported
220	Turdus viscivorus	Mistle Thrush	LC	R	Reported
221	Tyto alba	Common Barn Owl	LC	R	Reported
222	Upupa epops	Common Hoopoe	LC	R	Reported
223	Vanellus gregarius	Sociable Lapwing	CR	R	Reported
224	Vanellus indicus	Red-wattled Lapwing	LC	R	Reported
225	Vanellus leucurus	White-tailed Lapwing	LC	R	Reported
226	Vanellus spinosus	Spur-winged Lapwing	LC	R	Reported
227	Vanellus vanellus	Northern Lapwing	NT	M	Reported

Abbreviation: En= Endangered, NT= Near Threatened, Vu= Vulnerable, LC= Least concern, R=Resident, M=Migrant

Table 4-14 Migratory avian species reported from this region

Sl No	Scientific name	Common Name	IUCN status (Version 2025-2)	Migratory status	Reported/ Observed
1	Acrocephalus griseldis	Basra Reed Warbler	EN	M	Reported
2	Acrocephalus melanopogon	Moustached Warbler	LC	M	Reported
3	Alauda arvensis	Eurasian Skylark	LC	M	Reported
4	Anas acuta	Northern Pintail	LC	M	Reported
5	Anas crecca	Common Teal	LC	M	Reported
6	Anser albifrons	Common Teal	LC	M	Reported
7	Anser anser	Anser anser	LC	M	Reported
8	Anser erythropus	Lesser White-fronted Goose	Vu	M	Reported

Sl No	Scientific name	Common Name	IUCN status (Version 2025-2)	Migratory status	Reported/ Observed
9	Anthus pratensis	Meadow Pipit	LC	M	Reported
10	Anthus spinoletta	Water Pipit	LC	M	Reported
11	Aquila nipalensis	Steppe Eagle	EN	M	Reported
12	Asio flammeus	Short-eared Owl	lc	R/M	Reported
13	Aythya fuligula	Tufted Duck	lc	M	Reported
14	Aythya nyroca	Ferruginous Duck	NT	M	Reported
15	Botaurus stellaris	Eurasian Bittern	LC	M	Reported
16	Calidris canutus	Red Knot	NT	M	Reported
17	Calidris minuta	Little Stint	LC	M	Reported
18	Calidris pugnax	Ruff	LC	M	Reported
19	Calidris temminckii	Temminck's Stint	LC	M	Reported
20	Cercotrichas galactotes	Rufous-tailed Scrub-Robin	LC	M	Reported
21	Charadrius asiaticus	Caspian Plover	LC	M	Reported
22	Chloris chloris	European Greenfinch	LC	M	Reported
23	Circus cyaneus	Hen Harrier	LC	M	Reported
24	Circus pygargus	Montagu's Harrier	LC	M	Reported
25	Corvus frugilegus	Rook	LC	M	Reported
26	Corvus monedula	Eurasian Jackdaw	LC	M	Reported
27	Curruca communis	Common Whitethroat	LC	M	Reported
28	Curruca curruca	Lesser Whitethroat	LC	M	Reported
29	Curruca nisoria	Barred Warbler	LC	M	Reported
30	Emberiza cineracea	Cinereous Bunting	NT	M	Reported
31	Emberiza schoeniclus	Reed Bunting	LC	M	Reported
32	Erithacus rubecula	European Robin	LC	M	Reported
33	Falco columbarius	Merlin	LC	M	Reported
34	Falco naumanni	Lesser Kestrel	LC	M	Reported
35	Fringilla montifringilla	Brambling	LC	M	Reported
36	Gallinago gallinago	Common Snipe	LC	M	Reported
37	Gallinago media	Great Snipe	NT	M	Reported
38	Haliaeetus albicilla	White-tailed Sea-eagle	LC	M	Reported
39	Hypocolius ampelinus	Hypocolius	LC	M	Reported
40	Iduna pallida	Eastern Olivaceous Warbler	LC	M	Reported
41	Lanius isabellinus	Isabelline Shrike	LC	M	Reported

Sl No	Scientific name	Common Name	IUCN status (Version 2025-2)	Migratory status	Reported/ Observed
42	Lanius minor	Lesser Grey Shrike	LC	M	Reported
43	Lanius nubicus	Masked Shrike	LC	M	Reported
44	Lanius phoenicuroides	Red-tailed Shrike	LC	M	Reported
45	Larus armenicus	Armenian Gull	LC	M	Reported
46	Larus cachinnans	Caspian Gull	LC	M	Reported
47	Locustella fluviatilis	River Warbler	LC	M	Reported
48	Mareca penelope	Eurasian Wigeon	LC	M	Reported
49	Mergellus albellus	Smew	LC	M	Reported
50	Motacilla flava	Western Yellow Wagtail	LC	M	Reported
51	Numenius arquata	Eurasian Curlew	NT	M	Reported
52	Oenanthe chrysopygia	Red-tailed Wheatear	LC	M	Reported
53	Oenanthe hispanica	Black-eared Wheatear	LC	M	Reported
54	Oenanthe xanthoprymna	Kurdish Wheatear	LC	M	Reported
55	Oxyura leucocephala	White-headed Duck	EN	M	Reported
56	Pandion haliaetus	Osprey	LC	M	Reported
57	Passer moabiticus	Dead Sea Sparrow	LC	M	Reported
58	Pernis apivorus	European Honey-buzzard	LC	M	Reported
59	Phoenicopterus roseus	Greater Flamingo	LC	M	Reported
60	Phoenicurus phoenicurus	Common Redstart	LC	M	Reported
61	Phoenicurus phoenicurus	Common Redstart	LC	M	Reported
62	Phylloscopus collybita	Common Chiffchaff	LC	M	Reported
63	Phylloscopus sindianus	Mountain Chiffchaff	LC	M	Reported
64	Phylloscopus trochilus	Willow Warbler	LC	M	Reported
65	Prunella modularis	Dunnock	LC	M	Reported
66	Remiz pendulinus	Eurasian Penduline-Tit	LC	M	Reported
67	Spatula clypeata	Northern Shoveler	LC	M	Reported
68	Sylvia borin	Garden Warbler	LC	M	Reported
69	Tadorna tadorna	Common Shelduck	LC	M	Reported
70	Tringa totanus	Common Redshank	LC	M	Reported
71	Turdus merula	Eurasian Blackbird	LC	M	Reported
72	Turdus philomelos	Song Thrush	LC	M	Reported
73	Turdus pilaris	Fieldfare	LC	M	Reported
74	Vanellus vanellus	Northern Lapwing	NT	M	Reported

Abbreviation: En= Endangered, NT= Near Threatened, Vu= Vulnerable, LC= Least concern, R=Resident, M=Migrant

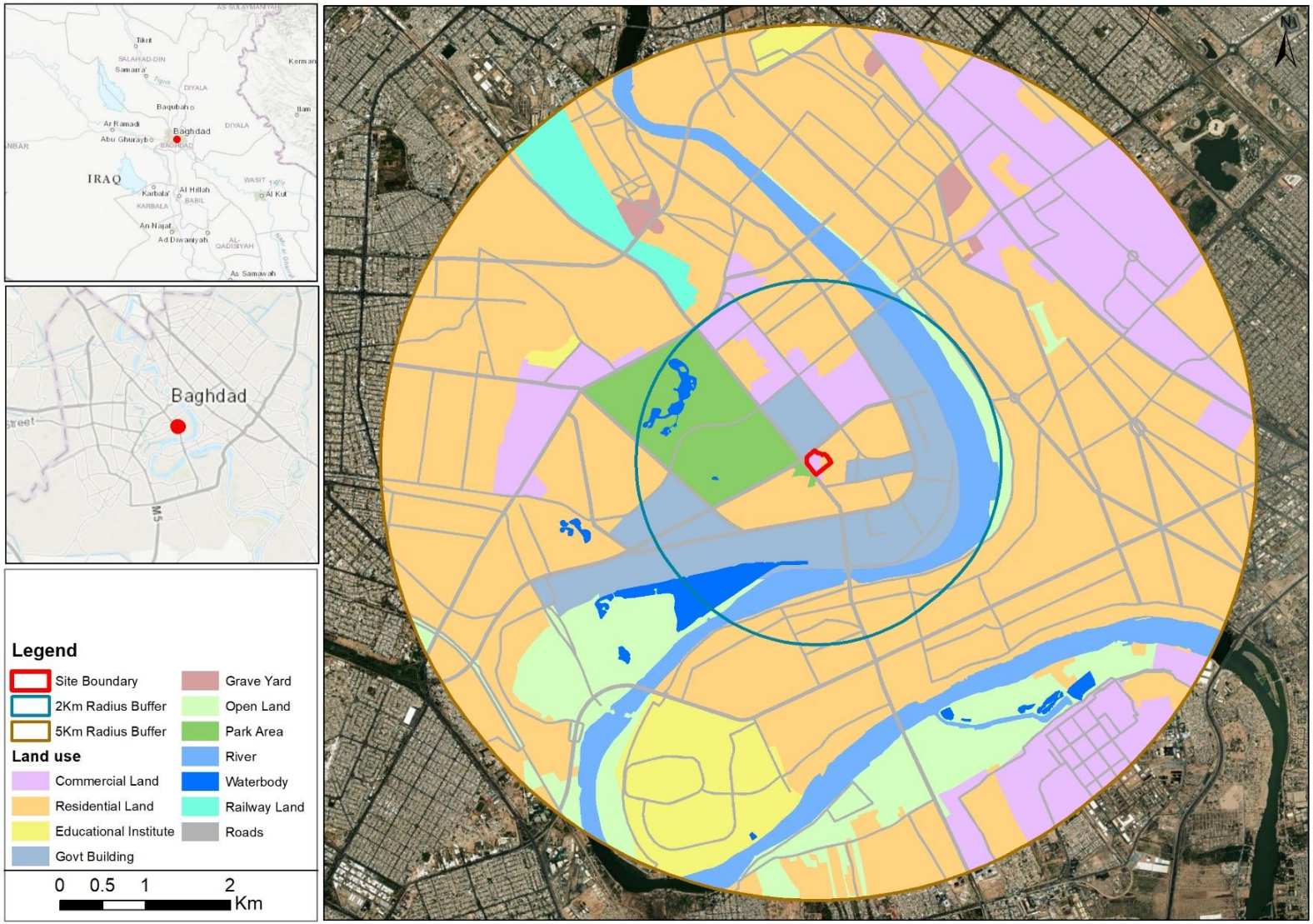
4.4.3.2 Habitat Survey

The project is located in urban landscape within the "GREE ZONE" area of Baghdad city. The analysis of habitat profile of the study area shows the project site is located on the modified habitat. No natural habitat is located within the project site. The same is also confirmed during the site visit. The modified habitats which are present within the study area are Residential Area (49.87%), Government Building (5.39%), Educational institute (3.97%), commercial Land (12.15%) etc. The natural habitats which are observed within the study area Open land (7.57%), river (6.48%), and Water body (1.05%). The habitat profile of the study area is provided in ***Table*** 4-15**.**

Table 4-15 Habitat profile of the study area

Natural Habitat	Area (Sq.km.)	%	Modified Habitat	Area (Sq.km.)	%
Waterbody	0.8691	1.05	Residential Land	41.2781	49.87
Open Land	6.2657	7.57	Graveyard	0.3819	0.46
River	5.3637	6.48	Educational Institute	3.2857	3.97
			Govt Building	4.4597	5.39
			Railway Land	1.2342	1.49
			Park Area	2.4292	2.93
			Commercial Land	10.0567	12.15
			Roads	7.1461	8.63

Figure 4-21 Habitat profile of the study area



Source: Deloitte GIS mapping

4.4.3.3 Floral Survey

4.4.3.3.1 Vegetation Profile

The vegetation profile of the study area is similar to any urban landscape. Trees are mainly observed along the roadside and within designated park area. At present, the project is in construction phase and approximately 50% of construction has been completed. Therefore, the vegetation profile of the project site in pre-construction phase cannot be established from the site visit. The vegetation observed from the study area are provided below ***Table*** 4-16. There are 31 floral species which have been observed within the study area. It is observed that along the roadside the dominant tree species is Phoenix dactylifera. Besides this, common species which are observed are *Acacia arabica, Albizzia lebbeck, Bougainvillea arborea, Cassia fistula, eucalyptus sp., Delonix regia, Terminalia sp., Cordia myxa* etc.

Table 4-16: Vegetation profile of the study area

S. No	Botanical Name	Family	Habit	IUCN Red list Status (version 2025-2)
1	Acacia arabica	Fabaceae	Tree	LC
2	Acacia cyanophylla	Fabaceae	Tree	LC
3	Acacia dealbata	Fabaceae	tree	LC
4	Agave americana	Asparagaceae	Shrub	LC
5	Albizzia lebbeck	Fabaceae	Tree	LC
6	Asparagus setaceus	Asparagaceae	Herb	NE
7	Bombax ceiba	Malvaceae	Tree	LC
8	Bougainvillea arborea	Nyctaginaceae	Shrub	NE
9	Carissa grandiflora	Apocynaceae	Evergreen shrub	NE
10	Cassia fistula	Fabaceae	Tree	LC
11	Catharanthus Roseus	Fabaceae	Shrub	LC
12	Citrus aurantium	Rutaceae	Evergreen tree	NE
13	Cordia myxa	Boraginaceae	Shrub	LC
14	Cymbopogon proximus	Poaceae	Herb	NE
15	Delonix regia	Fabaceae	Tree	LC
16	Ficus benghalensis	Moraceae	Tree	NE
17	*Ficus carica*	Moraceae	Tree	LC
18	Gynura aurantiaca	Asteraceae	Shrub	NE
19	Lantana camara	Verbenaceae	Shrub	NE
20	Nerium oleander	Apocynaceae	Shrub	LC
21	Olea eruopea	Oleaceae	Tree	NE
22	Phoenix dactylifera	Arecaceae	Tree	NE
23	Phonex canariensis	Arecaceae	Tree	NE
24	Pinus longifolia	Pinaceae	Tree	NE
25	Plumeria Obtusa	Apocynaceae	Tree	LC
26	*Prosopis farcta*	Fabaceae	Tree	LC
27	Punica granatum	Lythraceae	Tree	LC
28	Pyracantha coccinea	Rosaceae	Shrub/climber	NE
29	Rosa canina	Rosaceae	Shrub	NE

S. No	Botanical Name	Family	Habit	IUCN Red list Status (version 2025-2)
30	Rosa indica	Rosaceae	Shrub/climber	NE
31	Terminalia sp.	Combretaceae	Tree	LC

4.4.3.4 Faunal Survey

4.4.3.4.1 Herpetofauna

As per the literature review, 27 herpetofauna species have reported ranges in this region. out of the 27 species only two species i.e Euphrates Softshell Turtle and Egyptian Spiny–tailed Lizard are classified as Endangered (En) and Vulnerable (Vu) species as per IUCN Red data list, version 2025-2. Rest of the species are classified as Least concern (LC) from conservation point of view. The species which are reported from this region is given in ***Table*** 4-17. However, no herpetofauna was observed during the site visit and considering the location of the project, it is very unlikely that these species will occur within the project site.

Table 4-17 Herpetofauna reported from the study area

Sl No	Scientific Name	Common Name	IUCN status (Version 2025-2)	Observed /Reported
1	Acanthodactylus boskianus	Bosc's Fringe-toed Lizard	LC	Reported
2	Acanthodactylus grandis	Giant Fringe-toed Lizard	LC	Reported
3	Acanthodactylus orientalis	Acanthodactylus orientalis	LC	Reported
4	Bunopus tuberculatus	Baluch Ground Gecko	LC	Reported
5	Cerastes gasperettii	Arabian Horned Viper	LC	Reported
6	Cyrtopodion scabrum	Rough Bent-toed Gecko	LC	Reported
7	Eirenis coronelloides	Eirenis coronelloides	LC	Reported
8	Hemidactylus persicus	Persian Gecko	LC	Reported
9	Hemorrhois ravergieri	Spotted Whip Snake	LC	Reported
10	Heremites septemtaeniatus	Southern Grass Skink	LC	Reported
11	Indotyphlops braminus	Brahminy Blind Snake	LC	Reported
12	Lytorhynchus diadema	Crowned Leaf-nosed Snake	LC	Reported
13	Macrovipera lebetinus	Levantine Viper	LC	Reported
14	Malpolon moilensis	Moila Snake	LC	Reported
15	Myriopholis macrorhyncha	Hook-snouted Worm Snake	LC	Reported
16	Natrix tessellata	Dice Snake	LC	Reported
17	Ophisops elegans	Snake-eyed Lizard	LC	Reported
18	Platyceps najadum	Dahl's Whip Snake	LC	Reported
19	Platyceps ventromaculatus	Hardwicke's Rat Snake	LC	Reported
20	Psammophis schokari	Forskål's Sand Snake	LC	Reported
21	Rafetus euphraticus	Euphrates Softshell Turtle	EN	Reported
22	Spalerosophis diadema	Diadem Snake	LC	Reported

Sl No	Scientific Name	Common Name	IUCN status (Version 2025-2)	Observed /Reported
23	Stenodactylus slevini	Slevin's Sand Gecko	LC	Reported
24	Telescopus fallax	Cat Snake	LC	Reported
25	Uromastyx aegyptia	Egyptian Spiny–tailed Lizard	Vu	Reported
26	Varanus griseus	Desert Monitor	LC	Reported
27	Walterinnesia morgani	Walterinnesia morgani	LC	Reported

4.4.3.4.2 Avifauna (Birds)

A total of 15 avian species were observed from the study area during the site visit. All species are resident in nature. The diversity of avian species is also not significant. It can be attributed to absence of suitable habitat within the urban landscape. The avian species which are observed during the site visit are given in ***Table*** 4-18.

Table 4-18 Avian species observed during site visit

Sl NoScientific Name		Common Name	IUCN Red list status (version 2025-2)	Migratory Status
1	Alcedo atthis	Common Kingfisher	LC	R
2	Apus apus	Common Swift	LC	R
3	Ardea cinerea	Gray Heron	LC	R
4	Charadrius alexandrinus	Kentish Plover	LC	R
5	Columba livia	Rock dove	LC	R
6	Coracias benghalensis	Indian Roller	NT	R
7	Corvus corone	Carrion Crow	LC	R
8	Himantopus himantopus	Black-winged Stilt	LC	R
9	Milvus migrans	Black Kite	LC	R
10	Passer domesticus	House Sparrow	LC	R
11	Plegadis falcinellus	Glossy Ibis	LC	R
12	Riparia riparia	Collared sand martin	LC	R
13	Spilopelia senegalensis	Laughing Dove	LC	R
14	Vanellus indicus	Red-wattled Lapwing	LC	R
15	Streptopelia decaocto	Eurasian Collared-Dove	LC	R

4.4.3.4.3 Mammals

Based on the assessment of secondary information from review of literature and site visit, it is found that 27 mammalian species have reported ranges from this region. As per the conservation status, most of the species are considered as Least concern (LC). Out of the 27 species, only one species is considered as Vulnerable i.e. Arabian Sand Gazelle and one species is considered as Near Threatened (NT) as per IUCN red list category (version 2025-2). During site visit it was observed that the site is located in an urban landscape with minimal ecological value. No mammalian species were also observed during the site visit. Considering that project is located in an urban setup, it is very less likely that presence of these species will be reported from the project site and its surrounding area.

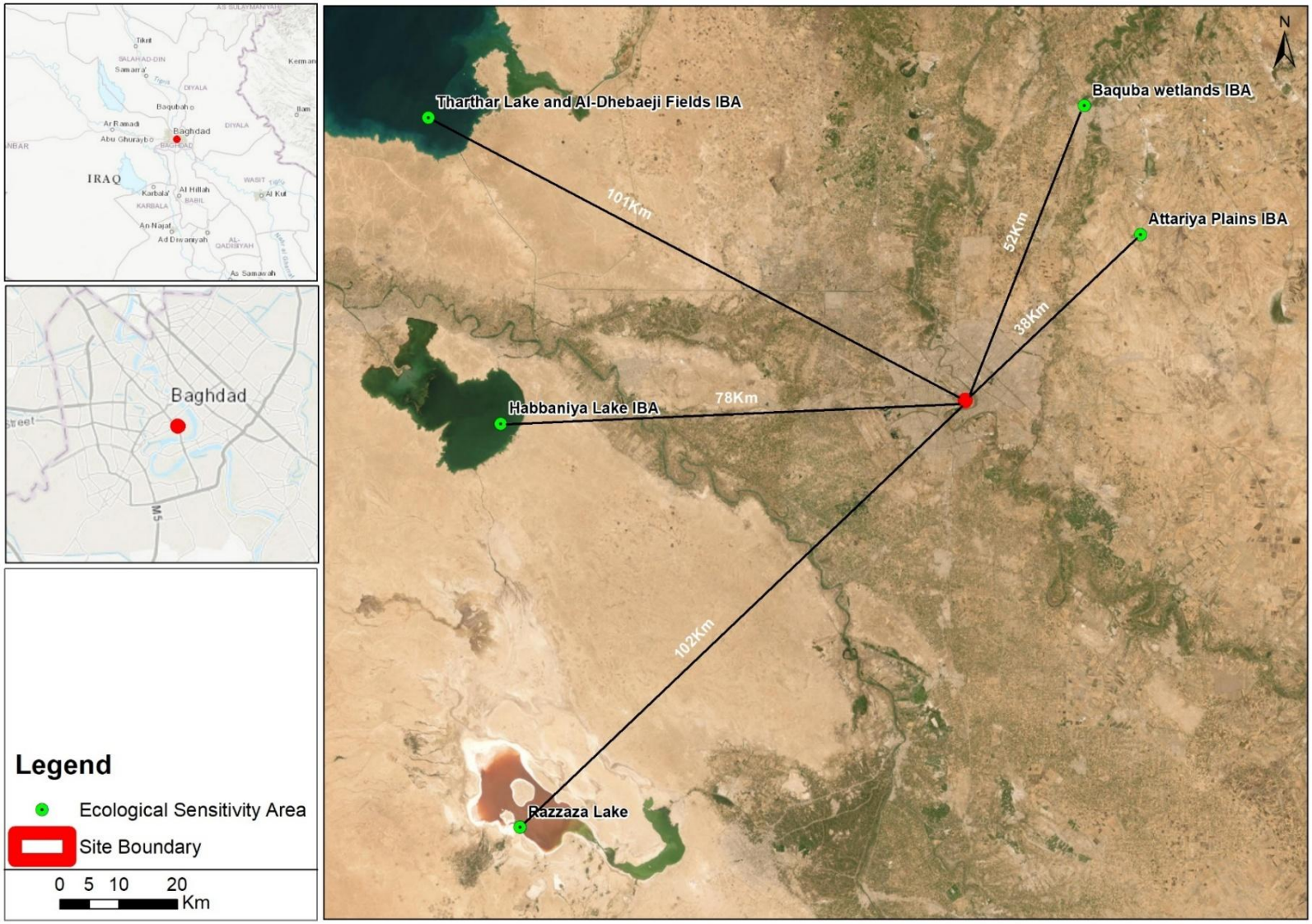
Table 4-19 Mammalian species diversity reported from the study area

Sl No.	Scientific Name	Common Name	IUCN Status (version 2025-2)	Observed/ Reported
1	Canis aureus	Golden Jackal	LC	Reported
2	Cnephaeus bottae	Botta's Serotine	LC	Reported
3	Crocidura gueldenstaedtii	Gueldenstädt's Shrew	LC	Reported
4	Felis chaus	Jungle Cat	LC	Reported
5	Felis lybica	Afro-Asiatic Wildcat	LC	Reported
6	Gazella subgutturosa	Arabian Sand Gazelle	Vu	Reported
7	Gerbillus mesopotamiae	Mesopotamian Gerbil	LC	Reported
8	Gerbillus nanus	Dwarf Gerbil	LC	Reported
9	Hyaena hyaena	Striped Hyaena	NT	Reported
10	Hystrix indica	Indian Crested Porcupine	LC	Reported
11	Jaculus jaculus	Lesser Egyptian Jerboa	LC	Reported
12	Martes martes	Pine Marten	LC	Reported
13	Meles meles	Eurasian Badger	LC	Reported
14	Mellivora capensis	Honey Badger	LC	Reported
15	Meriones crassus	Sundevall's Jird	LC	Reported
16	Meriones libycus	Libyan Jird	LC	Reported
17	Paraechinus aethiopicus	Desert Hedgehog	LC	Reported
18	Pipistrellus kuhlii	Kuhl's Pipistrelle	LC	Reported
19	Rattus rattus	Rattus rattus	LC	Reported
20	Rhinolophus hipposideros	Lesser Horseshoe Bat	LC	Reported
21	Rhinopoma microphyllum	Greater Mouse-tailed Bat	LC	Reported
22	Scarturus euphratica	Euphrates Jerboa	LC	Reported
23	Suncus etruscus	Pygmy White-toothed Shrew	LC	Reported
24	Sus scrofa	Wild Boar	LC	Reported
25	Tatera indica	Indian Gerbil	LC	Reported
26	Urva auropunctata	Small Indian Mongoose	LC	Reported
27	Vulpes vulpes	Red Fox	LC	Reported

4.4.3.5 Protected and Key Biodiversity Areas

The Project is located in middle of Baghdad city. There is no protected area within the study area i.e. within 5 km radius of the project site. It is noted from the desktop assessment that, there are two notified National Parks in Iraq, Halgurd-Sakran National Park, in the northern mountainous Kurdistan region and the Mesopotamian Marshes National Park in south, which highlights the country's wetland ecosystems. Beside these, few IBAs, as designated by the Bird Life International, are present in Iraq. The nearest IBA is Attariya Plains IBA which is located at a distance of 38km from the project site. Other IBAs which are located near to the project site are Baquba wetlands IBA at ~52 km, Habbaniya Lake IBA at ~78 km. A map showing the location of different IBAs with respect to the project site is provided in ***Figure*** 4-22.

Figure 4-22 Map showing locations of IBAs with respect to Project Site

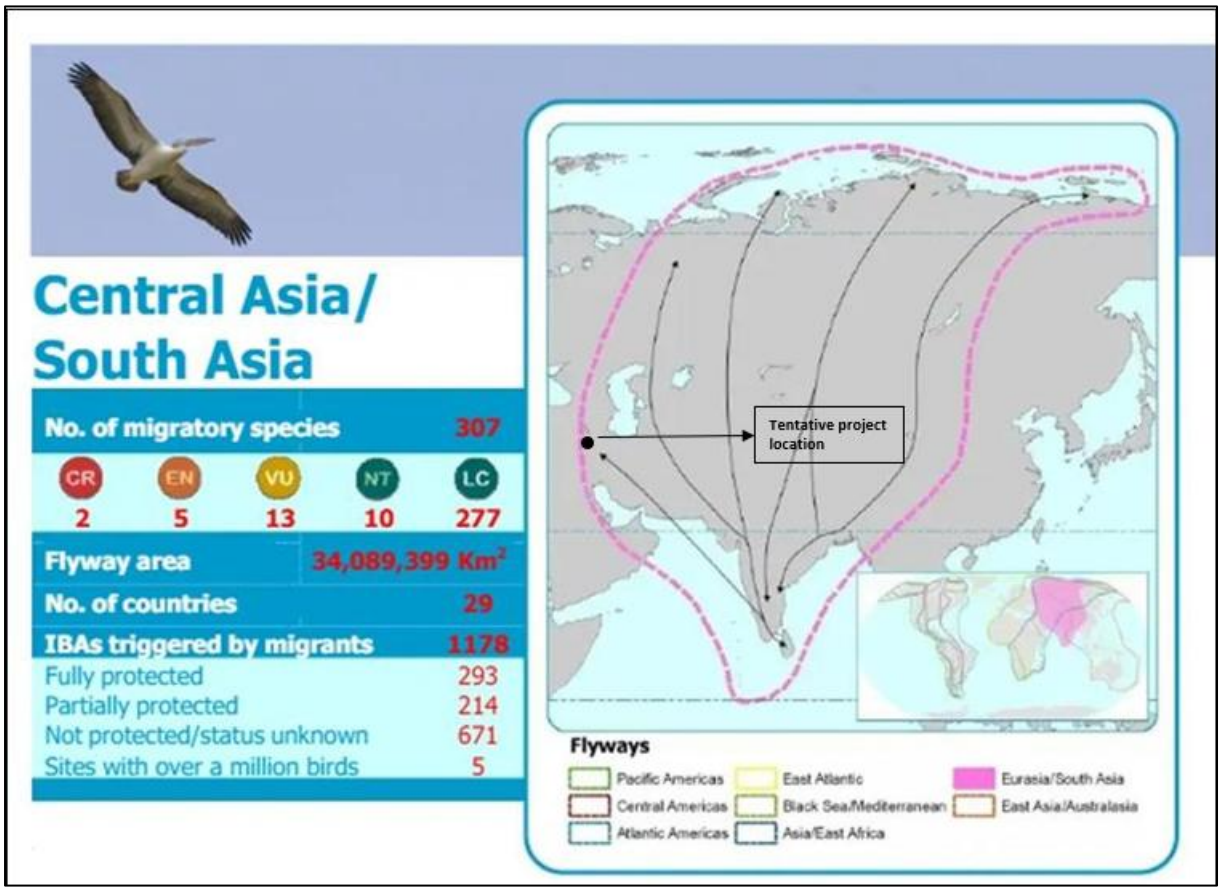


Source: Deloitte GIS Mapping

4.4.3.6 Bird Migration Flyways

Iraq majorly lies in the Central Asian Flyway. More than 300 species travel along the Central Asian Flyway, including a significant movement of the family Anatidae (Ducks, Geese and Swan), Gruidae (Cranes), etc. that travel from Europe/North Asia to the Indian subcontinent and occupy medium to large water bodies.

Figure 4-23 Map showing the Bird Migration pathway with respect to project location



5 Stakeholder Identification and Engagement

The subsequent section sheds light on the parameters of identification of and engagement with key stakeholders, to assess the impact of the project on them.

"Stakeholder Analysis" is understood as the process of identifying the individuals or groups that are likely to affect or be affected by a proposed project and sorting them according to their impact on the project and the impact the project will have on them. This information is then used to assess the way the interests of the stakeholders should be addressed in the project plan, policy, program, or other action.

5.1 Stakeholder Identification and Characterisation

A stakeholder is "a person, group, or organization that has a direct or indirect stake in a project/organization because it can affect or be affected by the Project/organization's actions, objectives, and policies". Stakeholders thus vary in terms of the degree of interest, influence and control they have over the project. While those stakeholders who have a direct impact on or are directly impacted by the project are known as Primary Stakeholders, those who have an indirect impact or are indirectly impacted are known as Secondary Stakeholders. Keeping in mind the nature of the project and its setting, the stakeholders have been identified and listed in the ***Table 5-1***:.

Table 5-1: Stakeholder Group Categorization

Category	Primary Stakeholder	Engagement Method	Secondary Stakeholders	Engagement Methods
Community	Local community residing in vicinity to project site	Information disclosure and implementation of external grievance redressal mechanism	Nil	--
	Adjacent land users	Information disclosure and implementation of external grievance redressal mechanism	Nil	--
	Local community residing in vicinity to the 3 labor camps.	Information disclosure, implementation of external grievance redressal mechanism and engagement with local community on frequent basis to understand if any issues are faced by them due to residence of migrant workers.	Nil	--
Institutional Stakeholders/Government bodies	Baghdad Municipality	Information disclosure and providing updates of project and related regulations on fixed intervals.	Traffic surgeons	Information disclosure and providing updates of traffic movement related to construction activities on daily basis.
	Local Police administration	Information disclosure and providing updates of project and related regulations on fixed intervals.	Nil	--
	Local Authorities	Information disclosure and providing updates of project and related regulations on fixed intervals.	Nil	--
Internal Stakeholders	• Engineering, Procurement & Construction (EPC) Contractor • Project engineers (civil, structural, MEP) and Construction manager and other employees of EPC.	Information disclosure and providing updates of project on regular intervals. Conduct regular meetings in form of focused group discussions,	Nil	--

Category	Primary Stakeholder	Engagement Method	Secondary Stakeholders	Engagement Methods
	• Worker Representatives • Workers • Security guards • Medical/Health Services Representatives • HSE Supervisor & Officers • HR Team and Admin from EPC Contractor • Security Officer at EPC Contractor • Suppliers • Sub-Contractors	toolbox talks, trainings, and one-to one interaction.		
Other Groups	NIL	--	Media	Information disclosure related to project implementation so as to control project narrative, misinformation, speculations related to project. Engagements would be conducted in form of controlled project announcements, milestone briefings in form of written press releases, dissemination of information official to news channels, media monitoring, interviews and crisis response,
	Nil	--	Local and national NGOs – environmental organizations and CSOs)	Information disclosure related to project implementation and demonstrating local economic benefits, youth employment, vocational trainings, inclusion of women workforce, so as to create local hiring drives and skill development activities. Discussion related working and labor conditions of existing workforce (both national and expats) and ensuring their well-being. Discussion related to environmental protection and upholding cultural integrity. Discussion can be undertaken related security consciousness within international zones and grievance redressal mechanism and requirement of CSR activities. Engagements would be conducted through written briefings, direct interaction.
	Nil	--	Utility & Infrastructure Stakeholders	Engagements related to disclosure of project, application of permits related to supply/connection of

Category	Primary Stakeholder	Engagement Method	Secondary Stakeholders	Engagement Methods
				utility and infrastructures for the project. Meetings related to coordination of utility supply, follow ups on permits and NOCs, site inspections, emergency drills, etc.
	Nil	--	Hotel Associations	Project proponent to conduct interaction with hotel association to brief about the project, submit application to be member of hotel associations, further written document related to recruitment of workforce can be submitted.

5.2 Stakeholder Mapping

"Stakeholder mapping" is a process of examining the relative influence that different individuals and groups have over a project as well as the influence of the Project over them. The purpose of stakeholder mapping is to:

- Identify each stakeholder group
- Study their profile and the nature of the stakes
- Understand each group's specific issues, concerns as well as expectations from the Project
- Gauge their influence on the Project

Based on such an understanding, the stakeholders are categorised into High Influence, Medium Influence and Low Influence.

The stakeholder engagement starts in the early stages of the Project, also needs to be included in the impact assessment and risk identification process and continues across the life cycle of the Project. The stakeholder analysis also shapes the stakeholder engagement strategy for the Project and needs to be continuously updated stakeholder analysis also helps to integrate the impacts and risk identified in the Project designing and during the implementation stages to help company better addresses the associated impacts with the Project.

5.3 Stakeholder Analysis

The influence and priority have both been primarily rated as:

- High Influence: This implies a high degree of influence of the stakeholder on the project in terms of participation and decision making or high priority to engage with the stakeholder
- Medium Influence: Which implies a moderate level of influence and participation of the stakeholder in the project as well as a priority level to engage the stakeholder which is neither highly critical nor are insignificant in terms of influence
- Low Influence: This implies a low degree of influence of the stakeholder on the project in terms of participation and decision making or low priority to engage that stakeholder

The intermediary categories of low to medium or medium to high primarily imply that their influence and importance could vary in that range subject to context specific conditions or also based on the responses of the project towards the community.

The coverage of stakeholders as stated above includes any person, group, institution, or organization that is likely to be impacted (directly or indirectly) or may have interest/influence over project. Keeping this wide scope of inclusion in stakeholder category and the long life of project, it is difficult to identify all potential stakeholders and gauge their level of influence over project at the outset of the project. Therefore, the project proponent is advised to consider this stakeholder mapping as a live document which should be revised promptly to make it comprehensive for any given period.

Table 5-2 provides a brief profile of the stakeholder groups identified, their key interests and concerns and the way they may be involved in the project lifecycle.

Table 5-2: Profile of stakeholders identified, their key interests and concerns and the way they may be involved in the project lifecycle

Relevant Stakeholders	Profile	Concerns and Expectations from the Project	Influence of Stakeholder on Project	Influence of Project on Stakeholder
Primary stakeholder				
Local community	The local community comprises households and individuals residing in and around the project area who may experience direct or indirect environmental, social, and economic changes during construction and operation. They represent the most immediate social context and interact daily with the project footprint. For the current project the local community comprises of residences and offices of government officials, bureaucrats, high profile residential area of government officials and international embassies etc. The zone is under tightened security and thus consultation with neighboring community could not be undertaken. Further local community for the project also comprise of residents residing in neighborhood of three labor camps. However, no community consultation could be conducted with them, but it was reported by camp manager that regular consultations are conducted by the camp manager with the local community to understand if they are facing any issues/ or have grievances related to workforce accommodation and their misconduct (if any).	The local community in Baghdad generally expects a new hotel project to deliver tangible benefits while respecting cultural and social norms. Key priorities include job creation and opportunities for local businesses, improved infrastructure such as roads and utilities, and enhanced public amenities. Residents also expect security measures and culturally sensitive practices in design and operations, transparent and inclusive engagement throughout construction and operation. Additionally, the community values responsible environmental management, avoidance of displacement, and sustainable practices that minimize disruption. Overall, they expect economic growth, social inclusion, and positive spillovers that improve quality of life.	The local community can influence the construction and operation of a hotel in Baghdad through active participation in public consultations and stakeholder engagement processes, where they provide input on design, cultural considerations, and environmental impacts. They can also leverage regulatory channels by raising concerns with municipal authorities to ensure compliance with laws and standards. Community committees and advocacy groups often negotiate employment opportunities, local procurement, and infrastructure improvements, while social media and public opinion can pressure developers to adopt socially responsible practices. Additionally, partnerships such as Community Development Agreements and the use of grievance mechanisms during construction and operation enable residents to monitor impacts and demand corrective actions, ensuring the project aligns with local needs and expectations.	The construction and operation of a hotel can significantly influence the local community by creating both positive and negative impacts. On the positive side, it can generate employment opportunities, stimulate local businesses through procurement and tourism, and lead to improvements in infrastructure and public services. It may also enhance the area's economic development and social amenities. Conversely, potential negative influences include increased traffic, noise, and pressure on local resources such as water and energy, and possible cultural conflict. Environmental concerns like waste generation and pollution during construction and operation can also affect community health and well-being. Overall, the project can reshape the socio-economic landscape, making proactive engagement and mitigation measures essential.
Vulnerable Groups	Vulnerable group refers to individuals or communities who may be disproportionately affected by the project's development, either due to their socio-economic status, physical condition, or social marginalization. For this project, the key vulnerable groups include immigrant workers of the project	The key expectations and concerns of the group from the project include: • Receiving benefits from the project in terms of economic opportunities and development programs. • Minimal disturbance to the community regarding access issues,	Vulnerable groups, especially women groups, can create significant opposition through protests, petitions, or public awareness campaigns leading to compromise of their safety and security aspects, further the migrant workers can also influence the project by halting the	The project may play a critical role in the development of these groups, by identifying specific opportunities and programs for the groups during construction and maintenance phases, providing work for local residents, including vulnerable groups

Relevant Stakeholders	Profile	Concerns and Expectations from the Project	Influence of Stakeholder on Project	Influence of Project on Stakeholder
	(from whom the identity documents/passports have been taken under control of project proponent), whose salaries are not disbursed on timely basis, women and also children living in neighborhoods of the worker camps and for the operations phase again mainly women and children in project vicinity.	pollution and influx of migrant workers. • Returning of passports and other identity documents/ marksheets/ degrees to respective person if taken.	project activities through agitation and raising complaints to Embassies if their concerns are not addressed adequately.	like women, youth, and low-income individuals, ensuring safety for the women and children and also ensuring the well-being of migrant workers.
Regulatory Authorities	Construction and operation of a hotel in Baghdad's Green Zone require approvals from multiple authorities. Key regulators include the Ministry of Construction, Housing & Public Municipalities for building permits and standards, Baghdad Municipality and Investment Commission for zoning and investment approvals, and the Engineers Syndicate for professional licensing. Security oversight is managed by the Green Zone Security Committee and Iraqi Security Forces, while environmental compliance falls under the Ministry of Environment and its consultancy bodies. Heritage protection is handled by the State Board of Antiquities & Heritage. These agencies collectively ensure compliance with planning, safety, environmental, and cultural regulations throughout construction and operation.	Regulatory authorities in Baghdad's Green Zone expect project proponents to fully comply with national and local building codes, zoning regulations, and investment laws while ensuring strict adherence to security protocols established for the area. They require comprehensive environmental assessments, including waste management and pollution control measures, as well as safeguards for cultural and heritage sites. Authorities emphasize transparency through timely submission of permits, technical documentation, and progress reports. Additionally, they expect robust health and safety standards for workers and guests, proactive engagement with local communities, and measures to mitigate social impacts. Overall, the focus is on legal compliance, security, sustainability, and responsible development aligned with Iraq's regulatory framework.	Regulatory authorities can exert considerable influence on a project by controlling key approvals and permits that determine whether construction and operation can proceed. They may require modifications to design and technical specifications to ensure compliance with building codes, zoning laws, and safety standards. In the Green Zone, security agencies can impose strict access protocols and operational restrictions, affecting timelines and logistics. Environmental and heritage regulators can mandate mitigation measures, sustainability practices, and archaeological safeguards, which may increase costs and extend schedules. Through ongoing monitoring and inspections, authorities can enforce compliance, impose penalties, or suspend work for violations. Additionally, investment and municipal bodies can shape project outcomes by requiring local employment, community engagement, and social responsibility initiatives, making regulatory influence a critical factor in project planning and execution.	A hotel project in Baghdad's Green Zone can influence regulatory authorities by increasing their workload and oversight responsibilities, requiring more frequent inspections, security coordination, and compliance monitoring. It may also enhance their visibility and accountability, as high-profile projects attract public and media attention. Additionally, successful implementation can strengthen the authority's reputation for effective governance and encourage future investment, while any compliance failures could lead to scrutiny of their enforcement capacity. Further the project will lead to socio-economic development in the area.
Opinion Leaders	This stakeholder group play a crucial role in shaping community perspectives and influencing project decisions. They serve as key intermediaries between the project	The expectations and concerns of this group from the Project, include: • Receiving benefits from the project in terms of employment and	This group is powerful enough to affect the functioning of the Project in their vicinity. This stakeholder group may play an important role in the public opinion	These groups, due to their social status, may already have access to several economic benefits from other Projects, and thus may not be completely dependent upon the

Relevant Stakeholders	Profile	Concerns and Expectations from the Project	Influence of Stakeholder on Project	Influence of Project on Stakeholder
	developers and the local community, often guiding the flow of information and acting as representatives of their community's interests. These stakeholder group members include the elders, community and political leaders in the village and play a critical role in the decision making in the local community	development of villages infrastructure • Regular updates on the project activities and the opportunities from the same. • Minimal disturbance to the community regarding access issues, and influx of migrant workers	formation, implementation of the community development activities planned by the Project	Project for access to development opportunities. However, depending on their role, community leaders (e.g., local government representatives or district heads) may influence or be influenced by the political context surrounding the project. If the project leads to positive outcomes, such as new infrastructure or job opportunities, community leaders may gain social capital and be viewed more favorably or vice versa.
Contractors and sub-contractors	This stakeholder group is comprised of the technical & non-technical staff of project and staff and workers of contractors.	The primary concerns and expectations of the group on the project include: • the role of the project in continued economic opportunity and work generation • • clarity in terms of scope of work, expectations, key performance indicators and timelines • timely and adequate disclosure of information to allow the project activities to be carried out • fair business opportunities and contract closure; and business continuity. • Safe and sound working condition • payment of salary on time basis.	This stakeholder group is critical for the smooth functioning and timely implementation of the project This group may also play an important role in the formation of public opinion towards the project	The influence of the project on the group pertains to the role of the project in business opportunities and the process of contract closure.
Workers and Employees	This group is comprised of skilled and semi-skilled and unskilled workers, involved in the project on a contractual basis.	The primary concerns and expectations of the stakeholder group pertaining to the project is as follows: • The role of the project in continued economic opportunity, work generation and a source of income. • Timely settlement of dues and payments in keeping with the legal requirements.	• This group may also play an important role in the formation of public opinion towards the project	The influence of the project on the group pertains to the roles of the project in the continuance of economic opportunities, timely payment of wages and ensuring the health and safety of the workers.

Relevant Stakeholders	Profile	Concerns and Expectations from the Project	Influence of Stakeholder on Project	Influence of Project on Stakeholder
		• Continued work opportunities safety and security at work.		
Secondary stakeholder				
Media	The media, comprising of both print and visual media, has a presence in the district. They are known to have played an extremely important role in generating awareness amongst the community.	The main expectations and concerns of the stakeholder from the project include: • Compliance with the regulatory requirements for the project. • Project's role in the development of the area. • Maintenance of positive relationship with the local community and other stakeholders. • Timely disclosure of information regarding the project activities	The influence of the stakeholder group on the project is likely to pertain to the opinion formation amongst other stakeholders towards the project	The influence of the project on the stakeholder is likely to be extremely limited due to the nature of the project activities
Local and national NGOs – environmental organizations and CSOs	Civil society organizations are active in health, environment, women's rights, disability support, and community welfare. **National and Local CSOs/NGOs:** Civil society groups in Baghdad focus on human rights, women's empowerment, democracy, and community development. Notable examples include the Iraqi Civil Society Solidarity Initiative (ICSSI) and its partners such as Women for Peace (Baghdad) and Tammuz (Baghdad), alongside organizations like the Civil Development Organization (CDO) and initiatives supporting digital literacy, justice, minorities, and returnees, despite challenges related to assembly restrictions and limited funding. These NGOs/CSO actively work on the following sectors: • Human Rights & Governance: Advocating for rights, fighting corruption, and supporting democratic participation. • Women & Youth: Empowering women politically, combating violence (like FGM), and promoting youth engagement.	In general, the CSO expect adherence to environmental and social safeguards, transparency, community outreach, and collaboration opportunities in awareness campaigns or community-benefit programs.	Low–medium influence, depending on their reputation and reach. Their advocacy can influence community sentiment and administrative oversight, particularly on issues affecting vulnerable groups.	Medium influence, as the project may create partnerships, strengthen civil engagement, and allow NGOs to implement community programs with project support.

Relevant Stakeholders	Profile	Concerns and Expectations from the Project	Influence of Stakeholder on Project	Influence of Project on Stakeholder
	• Digital & Economic Development: Promoting digital skills, supporting SMEs, and helping with reintegration. • Minorities & Returnees: Supporting vulnerable groups, minorities, and internally displaced persons (IDPs). **International Organization:** • IUF-UITA-IUL: The International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations (IUF) is a global federation of trade unions representing workers across agriculture and plantations, food and beverage production, hotels, restaurants and catering, and all stages of tobacco processing. The organization focuses on defending worker's rights, organizing and supporting trade unions, creating social dialogue and collective bargaining, leading global campaigns and solidarity actions, creating corporate accountability, enhancing gender equality and women's rights, providing training and capacity building and advocating for human rights and social justice. However as per official website of IUC, Iraq has not affiliated to the IUF. [35]			
Utility & Infrastructure Stakeholders	Public utility providers responsible for electricity, water supply, telecommunications, and waste management services under the oversight of respective Iraq ministries.	They expect timely technical data, clear infrastructure requirements, coordination for site access, and compliance with national utility standards. They also expect long-term demand stability for planning upgrades.	Medium influence, as delays in connecting electricity, water, or telecom networks can significantly postpone commissioning and operational readiness of the hotel	High influence, as the project boosts demand for utility services, supports infrastructure expansion, and provides long-term revenue streams for service providers.

[35] https://www.iuf.org/who-we-are/affiliates/

5.4 Engagement undertaken – Pre-impact assessment

Deloitte Team consulted with Project manager of IDCC and project representatives of UCC to understand the various engagement which have been conducted in the pre-construction phases respectively including formal engagements to ensure regulatory compliance, stakeholder alignment, and social acceptability.

- The first step is stakeholder mapping, which identifies all relevant parties—government bodies (such as the Ministries of Tourism, Planning, Environment, and the Green Zone security authority), local utilities and service providers, nearby establishments, and contractors.
- Reportedly, the land for the project has been transferred by NIC to project proponent, hence prior to the land transfer engagements have been conducted with Baghdad Mayoralty and NIC.
- Following this, public disclosure and consultations are conducted with the local community through the local government authority.
- Reportedly no direct stakeholder consultation with local community have been done prior to initiation stage as the project is being developed in government land and there were economic dependencies of local community on this land. Further since the project is in green zone, the project site is surrounded by residences of public servants, bureaucrats, government officials hence information related to the project has been disseminated to them through government authorities not through community consultation conducted by project proponent.
- During site visit it was observed that the Prime Minister's Guest house, Soldier Monument, Iraqi Military Aviation Museum, Office of Independent High Electoral Commissioner, Iraqi Parliament, Office of General Federation of Labour Unions, Ministry of Defence etc followed Office of Embassies of countries such as Egypt, United Kingdom, Netherlands etc are situated in close vicinity to project site hence no separate consultation could be done, however necessary information related to the project has been disclosed to them by the Baghdad Mayoralty and NIC.
- Further due to strict security protocols in the green zone, the project proponent has obtained necessary approvals from Ministry of Interior and Army officials deployed by Prime Minister's security council for allowing transportation and movement of personal vehicles of employees/visitors at site, the vehicles/buses transporting the contractual workers, the vehicles carrying construction materials, water tankers, sewage disposal tankers, etc to the project site.
- UCC has engaged with local transportation companies and logistics for deploying at the construction phase.
- UCC has engaged local caterers for providing food supply to the workers during construction phase.
- UCC has engaged with the local landowners for renting out labour camps in Karrada area.

5.5 Engagement as part of the Impact assessment – this assignment

This sub-section provides an understanding of the engagement activities undertaken as part of the ESIA process.

As part of ESIA study, consultations were conducted with various internal stakeholders associated with the project such as Legal Team, HR officer, Security guards, Security supervisor, Security manager, Camp boss, Camp Manager, Welfare officer, Workers, Project Director of IDCC, Doctor and Nurse at medical aid centre. These engagements aimed to ensure that stakeholders were aware of the project and provided insights for socio-economic assessment. The consultations also helped assess potential project impacts and develop a broad socio-economic profile. The other surrounding residential area was not covered due to restricted access.

5.5.1 Key feedback received during stakeholder consultation process

The workers expect clarity on the working hours and overtime practices, weekly holidays, leave entitlements. Some of the workers also raised concerns on delayed or disputed salary payments, timely grievance redressal, issues related to wages and overtime. In addition, few workers highlighted concerns on social security registration, accommodation conditions, safety training, medical access.

6 Analysis of Alternatives

The alternatives for development of the hotel are classified as No Project Scenario and Benefits of the Site Location.

6.1 No Project Scenario

If the proposed hotel is not developed, Baghdad will lose significant economic opportunities. These include direct employment during construction and operation phases, as well as indirect jobs in supply chains, transportation, and local businesses. The hospitality sector would miss out on attracting international travellers, conferences, limiting tourism growth and foreign investment. Additionally, the absence of a high-standard hotel reduces the city's competitiveness in hosting global events and business meetings.

The Green Zone is a highly secure and strategically important area in Baghdad, housing government offices, embassies, and international organizations. Without the hotel project, this zone remains underutilized for commercial hospitality purposes, despite its potential to serve as a hub for diplomatic and business tourism. This underutilization represents a missed opportunity to optimize existing infrastructure and security arrangements for economic development.

6.2 Selection of Site

The site selected for the hotel has following advantages:

- There are no protected areas, wetlands, forests, or critical habitats in the immediate vicinity. This means the development will not encroach upon or disturb ecologically sensitive zones such as wildlife sanctuaries, migratory bird habitats, or areas of high biodiversity value.
- Minimal Land Acquisition and Social Displacement: The site is within an existing administrative zone, reducing the need for additional land acquisition or resettlement. This minimizes social impacts such as displacement of residents or businesses, making the project more socially acceptable and compliant with IFC Performance Standards on Land Acquisition and Involuntary Resettlement.
- Better Infrastructure Availability - The Green Zone has relatively superior infrastructure compared to other parts of Baghdad, including reliable road connectivity, water supply, and security services. This reduces construction complexity and operational risks, ensuring uninterrupted services for guests and efficient logistics for hotel operations.
- By utilizing an existing urban plot, the project promotes ***brownfield development*** rather than converting agricultural or natural land. This approach aligns with sustainable land-use principles and reduces pressure on ecologically valuable areas outside the city.
- High Security and Controlled Access: The Green Zone is an administrative area with stringent security protocols, including checkpoints, surveillance systems, and restricted entry. This ensures enhanced safety for guests, staff, and assets, which is critical for a luxury hotel catering to diplomats, business travellers, and high-profile visitors. The controlled environment also minimizes risks associated with terrorism, theft, and civil unrest compared to other urban districts.
- Proximity to Government and Diplomatic Facilities: Being close to key government offices, embassies, and international organizations offers strategic benefits for the hotel. It positions the property as a preferred choice for official delegations, conferences, and diplomatic events, creating a strong business case and ensuring steady occupancy from high-value clientele.

7 Impact Assessment & Mitigation Measures

This section assesses the way the Project will interact with elements of the physical, ecological, or social environment to produce impacts to resources/ receptors. It has been organized as per the construction and operation phases of the project life cycle to understand the risks and impacts associated with each phase.

7.1 Project Activities

An overview of the typical project activities during different phases of a hotel project has been summarised below:

Table 7-1: Proposed Project Activities

Sr. No.	Project Phase	Activities
1.	Pre-Construction Phase	• Site Survey • Land Identification and Land lease • Project approvals and licenses • Master layout plan finalization for construction activities • Finalization of contractor
2.	Construction Phase	• Contractor Mobilization • Site preparation includes fencing, clearing of trees, bushes, pit filling, levelling and grading. • Construction of boundary wall • Transportation of Construction materials • Excavation of earth material for foundation work • Operation of Machinery and equipment, DG sets, Batching plant and construction vehicles • Generation and disposal of domestic solid waste • Consumption of water for construction and domestic use • Generation and discharge of hazardous solid waste • Surface runoff from the construction site • Accidental events of spillage of chemicals and oil • Installation of HVAC system • Development of internal access road • Development of temporary storage yard
3.	Operation Phase	• Daily operations (room cleaning and housekeeping, laundry services, food and beverage service). • Management of Utilities (HVAC, D.G. sets, water supply etc.) • Preventive & route maintenance of swimming pool, plumbing and drainage network, etc.) • Swimming pool and recreational area upkeep • Solid Waste management • Logistics and transportation

7.2 Scoping

As part of ESIA study, scoping exercise has been carried out to identify the potential area of influence for the project to identify potential interactions between the project and resources/receptors in the area of influence and the impacts that could result from these interactions and to prioritize these impacts in terms of their significance. This stage is intended to ensure that the impact assessment focuses on the issues that are most important for decision-making and stakeholder interest.

The impact interaction matrix highlighting the potential interaction between project activities and resources/receptors has been presented in ***Table*** 7-2**.**

7.2.1 Potential Impact Interaction Matrix

The potential interaction matrix for project activities and likely impacted resources/receptors is presented in the below ***Table*** 7-2

Table 7-2: Impact Interaction Matrix

Potential Impact Interaction Matrix		Environmental Aspect														
		Topography and Drainage	Land Use	Soil Environment	Groundwater Resources	Surface Water Resources	Air Environment	Noise Environment	Terrestrial Ecology	Aquatic Ecology	Land Based Livelihood	Economic Environment / Employment	Social and Cultural Environment	Occupational Health and Safety	Community Health & Safety	Traffic Environment
Activities	**Pre-Construction Phase**															
	Identification of land															
	Site Survey															
	Obtaining Regulatory clearance															
	Preparation of Master plan and finalisation of contractors															
	Construction Phase															
	Contractor Mobilization															
	Site Preparation including fencing, clearing of trees, bushes, pit filling, levelling and grading, construction of boundary wall	√	√	√			√	√	√		√		√	√	√	
	Transportation of construction material;			√			√	√		√				√	√	√
	Excavation of Earth material for foundation work			√	√		√	√	√					√	√	
	Operation of machinery and Equipment, DG sets, Batching plant (if any) and construction vehicles			√			√	√	√					√	√	
	Generation and disposal of domestic solid waste			√	√	√			√					√	√	
	Consumption of water for construction and domestic use				√	√									√	
	Generation and discharge of Municipal and hazardous solid waste			√	√	√								√	√	

Potential Impact Interaction Matrix		Environmental Aspect													
		Topography and Drainage	Land Use	Soil Environment	Groundwater Resources	Surface Water Resources	Air Environment	Noise Environment	Terrestrial Ecology	Aquatic Ecology	Land Based Livelihood	Economic Environment / Employment	Social and Cultural Environment	Occupational Health and Safety	Community Health & Safety	Traffic Environment
	Surface runoff from the construction site			√	√	√										
	Accidental events of spillage of chemicals and oil			√	√									√	√	
	Installation of HVAC system													√		
	Development of Internal access road		√	√			√		√							
	Development of temporary storage during the construction period	√	√	√			√		√					√		
	Operation Phase															
	Physical Presence of the Building and other areas		√													
	Generation of domestic wastewater and discharge			√	√	√								√	√	
	Generation of Municipal solid waste and Hazardous waste			√		√								√	√	
	Movement of Vehicles during operation period						√	√						√	√	√
	Operation of DG sets						√	√							√	

	Negative Impact
	Positive Impact

7.3 Scoped Out Interactions

Based on interactions defined in *Table* 7-3*,* the impacts on the following resources have been scoped out.

Table 7-3: Scoped Out-Potential Interactions

S.no.	Impact	Rationale for Scoping Out
1.	Impact on Cultural heritage	It is anticipated from the desktop assessment that no cultural heritage is impacted by the Project or its activity.
2.	Impact on Indigenous people	The project is being developed on government land. No private land has been taken for the construction activity. Therefore, impact on indigenous people is not considered during any phases of the project.
3	Impact on Ecology during operation phase	The project is developed in an urban setup, and ecological significance of the project site is negligible as project site is not located within any natural habitat or near to any ecologically significant area. Considering the nature of activities during the operation period, which is running of a commercial hotel, the impact on ecological environment has been scoped out for Operation period.

7.4 Impact Assessment Methodology

This section assesses the way the Project will interact with elements of the physical, ecological, or social environment to produce impacts to resources/ receptors. It has been organized as per the construction and operation phases of the project life cycle to understand the risks and impacts associated with each phase

7.4.1 Impact Estimation and Assessment

Criteria	Sub-Classification	Defining Limit
Spread: refers to area of direct influence from the impact of a project activity	Insignificant / Local spread	impact is restricted within the footprints of the Project boundary or within 500m of the boundary
	Medium Spread	impact is spread beyond 500m up to 2 km of the Project boundary
	High spread	impact is spread beyond 2 km to 5 km from footprint boundary of the Project
Duration: based on duration of impact and the time taken by an environmental component to recover back to its best possible pre-project state	Insignificant / Short Duration	when impact is likely to be restricted for duration of less than 12 months;
	Moderate Duration	when impact is likely to be extended up to 10 years
	Permanent	when impact is likely to be extended beyond 10 years
Intensity: defines the magnitude of Impact	Insignificant intensity	when resulting in changes in the environmental baseline conditions is up to 10%
	Low intensity	when resulting in changes in the baseline conditions up to 20%
	Moderate intensity	when resulting in changes in the baseline conditions for up to 30%
	High intensity	when change resulting in the baseline conditions beyond 30%
Nature: refers to whether the effect is considered positive or negative	Positive	When impact will result in positive or beneficial changes in the project area
	Negative	When impact will result in negative or adverse change in the project area

Criteria	Sub-Classification	Defining Limit
Frequency: refers to extent of occurrence of any activity/ task	Intermittent	Activities which may be undertaken intermittently but may not be continuous or have impact only when undertaken beyond certain intensity
	Routine	Activities which will be undertaken on regular and daily basis as part of construction or operation of the project

Based on the above, an impact significance matrix to assess the various impacts as presented in the table below. The potential impacts from Pre-construction, Construction, and Operation phases of the project are discussed in the subsequent sections.

7.4.2 Impact Significance Criteria

Spread	Duration	Intensity	Magnitude
Local	Short	Low	Negligible
Local	Short	Moderate	Small
	Moderate Duration	Low	
	Moderate Duration	Moderate	
	Permanent	Low	
Medium	Short	Low	
Local	Short	High	Substantial
	Moderate Duration	High	
	Permanent	Moderate	
Medium	Short	Moderate	
	Moderate Duration	Low	
	Moderate Duration	Moderate	
	Permanent	Low	
	Permanent	Moderate	
High	Short	Low	
	Short	Moderate	
	Moderate Duration	Low	
	Moderate Duration	Moderate	
	Permanent	Low	
Local	Permanent	High	Major
Medium	Short	High	
	Moderate Duration	High	
	Permanent	High	
High	Short	High	
	Moderate Duration	High	
	Permanent	Moderate	

In case of social and ecological impacts due to the project activities, vulnerability of the impacted receptor shall also be assessed in addition to characterising the magnitude of impact. Multiple factors have been considered while defining the vulnerability of the

resource/receptor, which may be biological, cultural or human as presented in table below. Other factors have been also considered while characterising vulnerability, such as legal protection, government policy, stakeholder views and economic value.

The ***vulnerability characterization*** used herein for social and ecological receptors are -

- Low
- Medium
- High.

Furthermore, for health and safety impacts due to the project activities, probability of incidence occurrence has been considered. The probability of an incidence occurrence has been established via qualitative scale as presented in ***Table*** 7-5**.**

The ***probability*** used herein for health and safety incidence are:

- Unexpected
- Possible
- Expected

Table 7-4: Criteria for Receptor Vulnerability

Receptors	Sub criteria	Low	Medium	High
Impact on Local Community	The impact on local community of their socio-economic condition would be raised due to: Labour Influx Employment Opportunities including providing services, local transportation, shops offering local specialties etc.	Minimum vulnerability consequently with a high ability to adapt to changes brought by the Project and opportunities associated with it	Some but few areas of vulnerability; but still retaining an ability to at least in part adapt to change brought by the Project	Profound or multiple levels of vulnerability that undermine the ability to adapt to changes brought by the Project
Habitat Sensitivity	Not Applicable	Habitats with negligible interest for biodiversity. Habitats with no, or only a local designation / recognition, habitats of significance for species listed as of Least Concern (LC) on IUCN Red List of Threatened Species Habitats which are common and widespread within the region, or with low conservation interest based on expert opinion	Habitats within nationally designated or recognized areas Habitats of significant importance to globally Vulnerable (VU) Near Threatened (NT), or Data Deficient (DD) species Habitats of significant importance for endemic species Habitats supporting significant concentrations of migratory species and / or congregator species Low value habitats used by species of medium value	Habitats within internationally designated or recognized areas Habitats of significant importance to globally Critically Endangered (CR) or Endangered (EN) species Habitats of significant importance to endemic and/or globally restricted-range species Habitats supporting globally significant concentrations of migratory species and / or congregator species Highly threatened and/or unique ecosystems, areas associated with key evolutionary species Low or medium value habitats used by high value species
Species Sensitivity	Not Applicable	Species with no specific value or importance attached to them Species and sub-species of Least Concern (LC) on the IUCN Red List of Threatened Species Not meeting criteria for medium or high value	Species on IUCN Red List as Vulnerable (VU) Near Threatened (NT), or Data Deficient (DD) Species protected under national legislation Nationally restricted range species, nationally important numbers of migratory, or congregator species Species not meeting criteria for high value, and species vital to the survival of a medium value species	Species on IUCN Red List as Critically Endangered (CR) or Endangered (EN) Species having a globally restricted range (i.e., plants endemic to a site, or found globally at fewer than 10 sites, fauna having a distribution range (or globally breeding range for bird species) less than 50,000 km2) Internationally important numbers of migratory, or congregator species Key evolutionary species, and species vital to the survival of a high value species

Table 7-5: Probability of Incidence Occurrence

Probability	Defining Limit
Unexpected	The incident is unexpected but may happen at any time during routine operations (probability less than 20%)
Possible	The incident is expected to happen at any time during routine operations (probability greater than 20% and less than 50%)
Expected	The incident will occur during normal routine operations (probability greater than 50%)

7.5 Impacts on Physical Environment

The proposed Project site is in an urban setup. The impacts have been identified based on evaluation of the project activities and presence of sensitive receptors. This section outlines the potential impacts on the physical environment due to project activities planned during construction and operational phases of the Project lifecycle.

7.5.1 Impacts during Construction Phase

7.5.1.1 Land Use

It is anticipated that the land use of the project site would be impacted during the construction phase. The land required for the project is 46415 m^2 i.e. 4.6415 ha. The details of land use within the project site and its surround area (i.e. within the study area) is given in ***Table*** 4-2 and ***Figure*** 4-6 in ***Section 4.2.4*** for reference. The present land use of the project site can be categorized as commercial land. The project site is surrounded by residential area and recreational park area. It is observed that government as well as private residential structures are present within the 2 km radius of the project site.

The activities which will contribute to land use changes are site clearance, excavation work, setting up of storage area for construction machinery and storage area of construction waste. . The project is in the construction phase. Therefore, the land use of the project site at the pre-construction stage could not be ascertained. However, from the desktop assessment of historical Google earth imagery, presence temporary structures were observed. The proposed change in land use is expected to be permanent, given the nature and scale of the project.

Control Measures for the Project

The project construction activities are restricted within the site boundary.

Impact Magnitude

The magnitude of the impact, which is negative in nature, is determined based on several factors such as spread, duration, frequency and intensity of the impact as described in ***Section 7.4.2***. It is anticipated that the spread of the impact would be local as the change of land use would be restricted only to the project footprint area. No change of land use is anticipated outside the project footprint area. Further, the project site is located within the urban setup and well connected through road network. And all the construction facilities such as labour camp, site office, and storage area would be developed within the site premises and no additional land is required for these facilities. Therefore, change of land use due to development of access road, site office, labour camp and storage area are not anticipated. The duration is considered permanent as it will continue till the project life period. Considering the project is located within the highly developed urban landscape, the intensity is considered as small as no impact is predicted outside the project premises.

Mitigation Measures proposed for the Project

- Construction activity should be restricted to project footprint area.
- The project shall not alter the existing land use in the areas surrounding the project facility. .

	Nature of Impact	Spread Impact	ofDuration	Intensity	Frequency	Magnitude of Impact
Without Mitigation Measures	Negative	Local	Permanent	Low	Routine	Small
With Mitigation Measures	Negative	Local	Permanent	Low	Routine	Small to negligible

7.5.1.2 Topography and Drainage

Analysis of historical images on google earth indicates that the topography of the project site is mainly flat in nature. The natural elevation of project site ranges from 38.10 to 55 m amsl. Highest elevation of 55 m amsl, is on the eastern side of the plot. It is anticipated that topography of the project site would be impacted during the construction period due to several activities such as excavation of site, site clearance and site leveling. It is estimated that approx. 300000 m^3 earth material would be excavated during construction period out which 80000 m^3 would be used for backfilling. The rest of the 220000 m^3 earth material would be stored at the construction site and would be disposed to the Al Za franya construction waste dumping ground located at a distance of 7.5 km through municipality vehicle. It is observed that there is no natural drainage like river, pond etc. located within the project site or its close vicinity (***refer Section 4.2.5*** and ***Figure*** 4-6). The nearest water body is located at a distance (i.e aerial distance) of ~ 1 km from the project site. Therefore, it is anticipated that construction work will not impact or alter any natural drainage system within the study area.

Control Measures for the Project

The EPC contractor on site has been instructed to avoid unnecessary alterations to the existing topography. Natural drainage patterns across and around the project site are being maintained to an extent practicable to ensure uninterrupted surface runoff and prevent localized waterlogging.

Impact Magnitude

The proposed construction work will impart a negative impact on the natural topography of the project site. However, the impact will be limited to only project footprint area. Therefore, the spread of impact is considered as Local as per section 7.4.2. The duration of the impact is considered as short as it is coterminous with the construction period which is 19 months. The intensity and frequency of the impact is considered as Low and Intermittent as impact will only be restricted to the project footprint area and will not alter the topography of the adjoining area. Therefore, considering the spread, duration and intensity of the impact, the overall impact magnitude is considered as negligible.

Proposed Mitigation Measures

- Carry out levelling and grading activities with as little disturbance to the existing contour as possible, in order to retain the general slope of the site.
- To the extent possible, disruption/alteration of micro-watershed drainage patterns should be avoided.
- Efforts should be made to avoid any disruption or alteration to the existing micro-watershed drainage patterns.
- During transportation of excess earth material to the designated dumping ground, to ensure that earth material is covered with tarpaulin sheet.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Short	Low	Intermittent	Negligible
With Mitigation Measures	Negative	Local	Short	Low	Intermittent	Negligible

7.5.1.3 Air Quality

The project site is located in an urban setting, surrounded by a densely populated area comprising both residential and commercial buildings.

The ambient air quality at the project site and its surrounding area is expected to be impacted during the construction phase. Activities with the potential to deteriorate air quality include:

- Fugitive dust emissions from site clearing, excavation work, cutting and levelling work, stacking of soils, handling of construction material, transportation of material, emission due to movement of vehicles and heavy construction machinery, operation of DG set and batching plant (if any).
- Vehicular emissions due to movement of construction vehicles
- Exhaust emissions from construction machineries, other heavy equipment like bull dozers, excavators, and compactors
- Dust emissions from the batching plant

It is anticipated that generation of fugitive dust and emission from movement of construction vehicle will increase the concentration of particulate matter (PM10 and PM 2.5 and SOx and NOx) within the project influence area. In addition to that, emission from the movement of construction vehicles and operation of diesel generator and construction machinery contribute to increase the concentration of PM, NOx and SOx in the ambient air. Further, dust will also be generated from the operation of batching plant. It is observed that, batching plant is located inside the site premises and all materials i.e. Sand, and aggregate are stacked in an open place. This could act as a potential source of dust generation during high wind situation and contribute to increasing the concentration of particulate matter in ambient air. It is also observed during site visit that construction debris are openly stored inside project site.

Dust generated from the construction activity such as site clearance, excavation of soil and dispersal dust from the stored material will also increase the concentration of Particulate matter in the ambient air.

Control Measures for the Project

- Preventive measures such as storage of construction material in sheds, covering of construction materials during transportation are undertaken, for reducing dust emissions
- Stockpiling is minimized by coordinating excavation, spreading, re-grading, and compaction activities, with cement supplied directly from silos and only sand and aggregates stored on site as required.
- Proper maintenance of engines and use of vehicles are ensured.

Impact Magnitude

An increase in particulate matter concentration is expected to negatively impact local air quality within the project's influence zone. Based on the type and nature of construction activities, this impact is anticipated to remain largely confined to the project footprint and its immediate surroundings, extending no more than 500 meters. Therefore, the impact is considered as local. The intensity of the impact is considered as moderate as project site is surrounded by densely populated residential and commercial building which acts as sensitive receptors. The duration is considered as short duration as the impact is limited to only construction phase which is approximately 16 months. The frequency of these activities is considered Routine as they will not occur continuously. Therefore, taking into account the spread, duration, and intensity of the impact, the overall impact magnitude is assessed as substantial.

Proposed Mitigation Measures

- The project proponent and its EPC contractor shall comply with air quality monitoring requirements defined by Iraqi Regulation No. 4 of 2012 (Protection of Ambient Air from Pollution):
  - Article 6 obliges the concerned authorities to provide the Ministry with the result of examining the exhaust concerning the moveable sources every (6) six months.
  - Article 10 provides that emissions from mobile sources must be compatible with the emission criteria related to such moveable sources. Those sources should be subjected to the exhaust examination once at least per year.
  - Article 12 provides that if emissions from fixed sources exceed the specified emissions limits, the owner of the polluting emissions source should take all possible precautionary measures for mitigating the quantity of pollutants resulting from the combusted materials through improved technology or appropriate control of the conditions of combustion.
- Install temporary dust barriers around the construction site to contain dust and prevent its spread to nearby settlement areas.
- Cover construction materials and excavated soil heaps with tarpaulin sheets and store them away from residential zones.
- During windy conditions, cover all stockpiled materials prone to generating airborne dust with canvas or plastic sheets.
- Regularly sprinkle water inside the project site to suppress dust emission.

- Ensure emissions from diesel generators (DG sets) and other stationary equipment are minimized by keeping engines properly tuned and well-maintained.
- Limit the speed of construction vehicles to 10–15 km/h to reduce fugitive dust emissions from vehicular movement.
- Strictly prohibit the open burning of waste at the construction site.
- Conduct regular inspections and maintenance of vehicles and machinery to ensure optimal performance.
- Vehicles and machinery will be serviced regularly and fitted with appropriate emission control equipment, where practicable.
- Switch off machinery and equipment when not in use to reduce unnecessary emissions.
- Use prefabricated materials wherever possible to limit localized air pollution during construction.
- The sand and aggregate for the batching plant should be stored under covered area to reduce the emission of dust generation.
- Conduct ambient air quality monitoring in accordance with the relevant regulatory obligations.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Short	Moderate	Routine	Substantial
With Mitigation Measures	Negative	Local	Short	Low	Routine	Small

7.5.1.4 Ambient Noise

The project is surrounded by residential and commercial structures. A desktop assessment indicates that settlement areas are located to the east, north, and southwest of the project site, with the eastern settlement directly adjoining the site boundary. The project is positioned at a major junction near the Monument to the Unknown Soldier, a recognized historical landmark. In view of these nearby sensitive receptors, Iraqi Law No. 21 of 1966 concerning noise prevention in public places is applicable.

In accordance with Iraqi Law No. 27 of 2009 (Protection and Improvement of the Environment) and Instruction No. 3 of 2012 (National Emission Limits for Activities and Works), noise levels must not exceed the limits prescribed by the WHO Guidelines for Community Noise (1999) during the operation of machinery, equipment, alarms, sirens, and loudspeakers.

It is anticipated that the ambient noise level of the project site and its adjoining area would be impacted during construction phase due to construction activities. The sources of noise in the construction phase include civil work; operation of batching plant, DG sets and construction machinery such as cranes, drillers, bull dozers etc.; and movement of vehicles at project site. There will also be increased noise levels because of increased anthropogenic movement in the area due to the influx of construction laborers. Noise would also be generated due to the movement of heavy earth moving vehicles during levelling and compaction of earth at the project site, transportation of equipment and construction materials; operation of material handling equipment, stationary equipment and other types of project equipment.

Control Measures for the Project

Normal working hours for the contractor are defined as 8:00 am to 6:00 pm. Any work undertaken outside these hours is limited to activities that do not generate significant noise.

Impact Magnitude

The impact magnitude is considered based on the spread, duration and intensity of the impact. During the construction phase noise will be generated from the construction site due to operation of construction equipment. Typically, sound
pressure levels of the earth moving vehicles and construction machinery would not be more than 90 dB (A). It is anticipated that the noise level will be attenuated within the 500 meters from the source of noise. Therefore, the spread has been considered as local. The duration is considered as short as excess noise will be generated only during the construction period i.e. 19 months. Further, the project site is surrounded by residential and commercial area. It is observed that residential and commercial structures are present just adjacent to the eastern and southern side of the project site. on the west and northern side of the project site, park and government buildings are there. Therefore, increase in noise level during the construction period will cause increase in the existing noise level of this area. However, as the noise will be generated in phased manner only during the operation of construction

equipment, the intensity is considered as High Therefore, considering these facts the overall impact magnitude is considered as Substantial.

Proposed Mitigation Measures

- Operate only well-maintained equipment on-site.
- Provide acoustic enclosures for all the noise emitting machineries to reduce noise levels at the nearby settlements.
- If it is noticed that any particular equipment is generating too much noise then lubricating moving parts, tightening loose parts and replacing worn out components should be carried out to bring down the noise and placing such machinery far away from the households as possible.
- Limit the number of heavy vehicles required for the Project to only those that are necessary.
- Machinery and construction equipment that may be in intermittent use should be shut down or throttled down during non-work periods.
- Consider the location of the project site, it is recommended to provide noise barrier of 6 – 10 meters height around the zone & construction activities to reduce the propagation of noise.
- Practice Minimal use of vehicle horns and heavy engine breaking in the area
- Noise limits for construction equipment to be installed at the project area during peak construction such as front loaders concrete mixers, cranes (moveable), will not exceed 75 dB (A), measured at one meter from the edge of the equipment in free field.
- Construction activities would be restricted during daytime (preferably 6 AM to 6 PM) only.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Short	High	Routine	Substantial
With Mitigation Measures	Negative	Local	Short	Moderate	Routine	Small

7.5.1.5 Soil Environment

7.5.1.5.1 Soil Erosion and Compaction

During construction Phase, soil erosion and soil compaction are anticipated, within the project site, due to following activities-

- Site Clearance activity
- Stripping and stockpiling of soil layers.
- Excavation for construction of foundations of building.
- Movement of heavy construction vehicles on earthen road

The topsoil is expected to be susceptible to erosion due to site clearance activities. Vegetation removal is necessary for site preparation before construction begins. Historical Google Earth imagery indicates that the proposed project site previously supported vegetation cover. Consequently, clearing this vegetation will not only result in the loss of topsoil but will also expose it to wind and water erosion, ultimately leading to deterioration of soil health. In addition to that, movement of heavy machinery and continuous traffic during construction period would compact the soil, reducing its porosity and permeability. This compaction limits water infiltration leading to poor drainage and increased surface runoff, which further intensifies soil erosion.

Control Measures for the Project

- Existing roads are used for site access to the extent practicable.
- Disturbed areas will be restored and re-vegetated post completion of construction activities, where feasible, to maintain existing topography and minimize soil erosion.

Impact Magnitude

Since the construction phase will last for limited period of time i.e., 19 months, the duration has been classified as short. Furthermore, since the soil erosion and compaction may occur due to movement of vehicles on unpaved area within the Project site, the spread has been classified as local. The intensity has been classified as low to moderate, and the frequency has been classified as routine. Therefore, based on impact significance criteria, the impact magnitude is assessed to be Small.

Proposed Mitigation Measures

- As a best practice, site clearance, piling, excavation and access road strengthening will not be carried out during the rainy season to minimize erosion and run-off.
- Soil should be ploughed in compacted areas after completion of construction work.
- The stockpiles of the soil will be kept moist/covered to avoid wind erosion of the soil.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Short	Low to Moderate	Routine	Small
With Mitigation Measures	Negative	Local	Short	insignificant	Routine	Negligible

7.5.1.5.2 Soil Contamination

Soil may get contaminated during the construction period due to various reasons. The main contributor to soil contamination would be improper management of waste material, both municipal solid waste and hazardous waste. It is anticipated that, during construction period various types of waste such as municipal solid waste, construction waste, hazardous waste, E-waste, and liquid sewage waste will be generated.

Municipal domestic waste consisting of food waste, plastic, glass, aluminum cans and wastepaper will also be generated by the construction workforce at any canteen facility/ rest area. A small proportion of the waste generated during construction phase will be hazardous and may include used oil, hydraulic fluids, waste fuel, grease and waste oil containing rags. If improperly managed, solid, and hazardous waste could create negative impacts on land. Additionally, soil contamination during the construction phase may result from leaks and spills of oil, lubricants, or fuel from heavy equipment, improper handling of chemical/fuel storage and wastewater. Such spills could have a long-term impact on soil quality. It is estimated that, during the construction period, approximately 3357.5m^3 of waste would be generated, of which 1920 m^3 is sewage and 1653.4 m^3 of general mixed waste. It is understood that municipal waste generated during the construction period is transported to Al Baya Waste compaction station for disposal. Similarly, sewage waste generated during the construction period is primarily stored within the site premises in concrete sewage tank. From sewage tank, sewage water is disposed through municipal sewage tanker.

Wastewater generated from the Batching plant is also stored primarily within a concrete sewage tank, and from there it is transported through municipal sewage tank.

Control Measures for the Project

Domestic waste, general mixed waste, plastic, metal, and paper waste are segregated at the site and sent for recycling through authorized channels. Concrete waste, excavated soil, and earth are collected using earth-moving trucks and transported to the government-designated Za'faraniya Construction Waste Dumping Area. Hazardous waste and materials are properly labelled and stored at designated on-site locations before being disposed of through authorized agencies. Medical waste is collected, handled, and disposed of through an authorized arrangement with the nearby St. Rafaels Hospital.

Impact Magnitude

Any leaks and spills of oil from project activities may contaminate the soil in project site and nearby areas, therefore the spread has been classified as medium. Furthermore, contamination of soil may last for long period of time, thus the duration has been classified as moderate. The intensity has been classified as moderate as the soil contamination may have impact on the soil of project area and nearby areas. Therefore, the impact magnitude as per impact significance criteria has been assessed to be Substantial.

Proposed Mitigation Measures

- Ensure that no unauthorized dumping of used oil and other hazardous waste/ material is undertaken at the site.
- Designated areas should be provided for Solid Municipal Waste and ensure daily collection, and disposal through municipal authority.
- Construction Waste should be stored separately and be periodically collected by an authorized facility.
- Store all waste in a shed that is protected from the wind, rain, storms, etc.
- Maintain a logbook for quantity and type of hazardous waste generated.
- Use of spill control kits to contain and clean minor spills and leaks.
- Unloading and loading protocols should be prepared for diesel, oil and used oil respectively and workers trained to prevent/contain spills and leaks, and
- In case of accidental/unintended spillage, the contaminated soil should be immediately collected and stored as hazardous waste.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Medium	Moderate	Moderate	Intermittent	Substantial
With Mitigation Measures	Negative	Medium	Moderate	Low	Intermittent	Small

7.5.1.6 Water Resources

7.5.1.6.1 Water Availability

During the construction phase, water will primarily be required for civil works, particularly for preparing construction materials such as concrete. Additional water will be needed for domestic use and drinking purposes. It is estimated that approximately 14,091.83 m³ of water will be required for civil works, 9,690.65 m³ for domestic use, and 4,277.45 m³ for drinking purposes, resulting in a total water demand of about 28,059.93 m³ during the construction period. Water will be supplied by the Baghdad Municipality, and no community water sources will be utilized for construction activities.

Impact Magnitude

During the construction phase, water will be supplied by the Baghdad municipality, and no community water sources will be utilized. Consequently, the spatial impact is classified as local. The duration is considered short, as the water requirement is limited to the 19-month construction period.

Baghdad faces considerable water management challenges due to rapid urbanization, population growth, and climate variability. The city depends heavily on the Tigris and Euphrates rivers for its water supply, as rainfall is highly unpredictable. Urban expansion and population increase have raised per capita water consumption to about 250 liters per day within Baghdad and up to 300 liters per day in surrounding sub-districts. The population has grown from approximately 3.98 million in 2000 to nearly 8.05 million in 2020, resulting in an estimated daily water demand of around 2.01 million cubic meters. Compared to this overall demand, the water requirement for the project during construction is negligible. Therefore, considering the extent, duration, and intensity of the impact, the overall impact magnitude is assessed as small.

Proposed Mitigation Measures

- Construction laborers deputed onsite to be sensitized about water conservation and encouraged for optimal use of water.
- Permission from concerned authority should be obtained by the Project, before initiation of construction period.
- Recycling/reusing to the extent possible
- Install water meter to monitor the daily water consumption during construction.
- Regular inspection for identification of water leakages and preventing wastage of water is necessary for efficient utilization of water.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Short	Low	routine	Small
With Mitigation Measures	Negative	Local	Short	insignificant	routine	Negligible

7.5.1.6.2 Water Quality

There is a risk of groundwater contamination due to improper sewage management at the project site office or accidental spills and leaks in storage areas. Several water bodies, including rivers and ponds, are located within a 2 km radius of the project site; however, none are present within the site itself or within a 500 m buffer zone. Water quality in the study area could be affected by poor handling of domestic wastewater, wash water, sewage, chemical or fuel spills, and improper waste disposal.

During the construction phase, approximately 1,920 m³ of sewage water is expected to be generated. Additionally, wash water will result from cleaning construction equipment on-site. Other sources include washing paint brushes and lubricant containers. The composition of wash water varies by source—for example, water from concrete mixer cleaning will contain sand and cement particles, while water from painting or equipment washing may include harmful chemicals. Site runoff and drainage could also carry elevated levels of suspended solids and contaminants.

In addition to that, to check the water contamination two Reverse Osmosis (RO) filter machines have been installed at the site for drinking water. Water is supplied by Baghdad Municipality and comes directly to underground storage tank. There are two underground storage tanks each with a capacity of 37.85 m^3.

Control Measures for the Project

- Planning of toilets, soak pits and septic tanks, waste collection areas are situated away from natural drainage channels.
- Provision for impervious storage areas, especially for fuel & lubricant are maintained onsite.

Impact Magnitude

Since, any spillage or leaks may contaminate the groundwater of the Project area, the spread has been classified as Medium. Furthermore, there will be long term impact on groundwater quality in case of leaks/spills, the duration has been classified as moderate. The intensity has been classified as low due to low to moderate percolation rate of soil, which may seep the contaminant deep into ground water. Therefore, the overall impact has been classified as Substantial.

Proposed Mitigation Measures

- Collect all surface runoff from the construction site through storm water drainage system and garland drain network and channelize the flow through adequately sized sedimentation tank before discharging to nearby municipal stormwater drainage network;
- Chemicals and oil storage would be provided with secondary containment structures in the form of dykes/bunds so that any accidental leakage or spillage can be contained and cleaned up immediately;
- Material stored at site, both construction material and Construction waste, will be provided with garland and will be covered with tarpaulin to control material runoff during rainfall;
- Ensure the regular testing of RO water to maintain the quality of the water.
- Ensure periodical replacement of RO filter for effective use.
- The RO discharge water should not be directly discharged to any natural water sources.
- Regular cleaning of drains would be done to restrict the blockage in the drain, ensuring free flow of water;
- It should be ensured that the manholes and the stormwater drainage does not get clogged or dislodged;
- An impervious storage area shall be provided on site for the safe storage of any hazardous waste, if generated. Bio toilets would be provided at site, and the generated sewage would be vacuum collected and treated in a skid mounted modular STP, provided at respective construction zones.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Medium	Moderate	Low	Intermittent	Small
With Mitigation Measures	Negative	local	Moderate	Low	Intermittent	Negligible

7.5.2 Impacts during Operation Phase

7.5.2.1 Ambient Air quality

During the operation phase, ambient air quality is anticipated to be affected by emissions from diesel generators, which will serve as an alternate power source during power outages. It is planned to deploy nine diesel generators, each with a capacity of 2,500 kVA. Their operation is expected to emit NO_x and SO_x, which could impact local air quality if not properly mitigated. Additionally, vehicular movement associated with hotel operations will contribute to ground-level concentrations of these pollutants.

Control Measures for the Project

- D.G. sets will be used for power back up only.
- A maintenance schedule should be prepared for maintenance of diesel generators.
- Use of low sulfur diesel for DG set.

Impact magnitude

The diesel generators will be used during the operation phase only as power backup solution in case of an emergency. Therefore, the spread has been considered as Local. The duration of impact is considered as permanent as it is required throughout project life cycle. It is also observed that commercial and residential structures are present adjacent to the Project site which acts as a vulnerable receptor for air pollution. Therefore, considering the existing baseline scenario, nature of source of emission and presence of vulnerable receptors, the intensity of the impact has been considered as moderate. In addition to that, the overall impact significance is considered as substantial based on the duration, spread and Intensity of the impact.

Proposed Mitigation Measures

- Limit DG operation to essential periods; use automatic shutdown when grid power is restored.
- DG sets should be maintained on regular basis to significantly reduce the emission
- Adequate stack height of DG Sets would be maintained (at least 6m higher than the nearest building) to disperse the air pollutants and dilute the pollutant concentration in the vicinity.
- Use of low Sulfur diesel for DG sets.
- All DG sets would be complying to regulatory requirement of Government of Iraq.
- Educate operational staff on fuel handling, maintenance, and pollution prevention protocols.
- Implement periodic stack emissions monitoring and ambient air quality surveys in accordance with Iraqi Ministry of Environment standards. Install CO and gas leak detectors in boiler room with alarm and automatic shut-off.
- Implement regular flue inspection and combustion tuning to ensure optimal efficiency and low emissions from boiler.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Permanent	Moderate	Intermittent	Substantial
With Mitigation Measures	Negative	Local	Permanent	Low	Intermittent	Small

7.5.2.2 Ambient Noise

The source of noise during the operation period would be from diesel generator sets and movement of vehicles. It is estimated that 9 DG sets of 2500 KVA each will be deployed during the operation phase as a power back up source. These generators will be used during the emergency situation. As per general understanding, 2500 KVA Diesel Generator is a large industrial unit, and its noise generation capacity depends on factors like design, enclosure type, and load. In general understanding, Open-type (no enclosure) DG set can exceed 95–100 dB(A) at 1 meter, whereas DG set with standard acoustic enclosure usually reduces noise to around 75–85 dB(A) at 1 meter distance from the source. In case of DG set with sound attenuated enclosure, sound level can be brought down to 63–78 dB(A) at 7 meters.

Impact Magnitude

The duration is considered as Permanent, as it is likely to be impacted throughout the project life. The spread is considered as low considering impact will attenuate within the project site and its adjacent area. It is also observed that commercial and residential structures are present adjacent to the Project site which acts as a vulnerable receptor for air pollution. Therefore, considering the existing baseline scenario, nature of source of emission and presence of vulnerable receptors, the intensity of the impact has been considered as moderate. And the overall impact significance is considered as Substantial.

Proposed Mitigation Measures

- As a part of standard operating practice, necessary noise prevention and control measures viz. use of acoustic barriers, regular use of Personal Protective Equipment (PPE) to the works engaged near DG set, regular preventive maintenance of equipment etc. must be implemented.
- DG set would be placed in suitable acoustic enclosure.
- Mount DG sets on anti-vibration pads or spring isolators to prevent structural noise transmission.
- Ensure walls, doors, and ceilings of the D.G. room have sound-absorbing materials (e.g., mineral wool, acoustic panels).
- Unnecessary honking of Passenger vehicles should be prohibited.
- Conduct periodic noise level measurements at property boundaries and sensitive areas to ensure compliance with IFC and local standards.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Permanent	Moderate	Intermittent	Substantial
With Mitigation Measures	Negative	Local	Permanent	Low	Intermittent	Small

7.5.2.3 Soil Environment

7.5.2.3.1 Soil Contamination

Soil may get contaminated during the operation period from accidental leakage of underground sewage network and diesel fuel tank, leakage of used oil from DG sets as well as oil-soaked jute and rags generated from the maintenance activity. During the operation period diesel will be stored in 5 underground water tanks, capacity of 50000L each for operation of DG set. Accidental leakage from these underground diesel storage tanks can significantly contaminate the surrounding soil due to the nature of diesel as a hydrocarbon mixture. When diesel escapes into the subsurface, it migrates downward through soil pores under the influence of gravity until it encounters a less permeable layer or the groundwater table. During this process, diesel acts as a light non-aqueous phase liquid (LNAPL), which means it floats on groundwater and creates a persistent source of contamination. Its hydrophobic properties cause it to adhere strongly to soil particles, especially those rich in organic matter, making cleanup difficult. Over time, the leaked diesel reduces soil porosity and oxygen availability, disrupting microbial activity and soil health.

In addition to that, projects will dispose off generated sewage to the municipal sewage system through underground piping network. Any disruption or leakage in the piping network have potential to contaminate the surrounding soil environment.

Control Measures for the Project

The Sewage network and underground diesel tanks will be monitored regularly to check any accidental leakages.

Impact Magnitude

Since the impact on soil due to any accidental spillage from sewer line and Diesel tank can be expanded to larger area than restricted to only project site, the spread has been considered medium. The duration is considered as moderate as impact is expected to be for longer period. The intensity is considered as moderate, since soil in the area has a low to moderate percolation rate; therefore, any leaks/spillage of hazardous oil may seep into the soil and further into groundwater table. Therefore, considering the overall Impact significance is considered as substantial.

Proposed Mitigation Measures

- Spill control kits should be used to promptly contain and clean up minor spills and leaks during operation and maintenance (O&M) activities.
- Develop and implement guidelines and procedures for immediate response and cleanup following any spillage incidents.
- Sewage generated on-site should be treated and disposed of through sewage treatment plant.
- Transport vehicles and equipment must undergo regular maintenance to prevent oil leaks.
- Prepare loading and unloading protocols for diesel, oil, and used oil, and ensure that workers are trained to prevent and manage spills and leaks.
- Hazardous material and waste will be properly labelled, stored onsite at a location provided with impervious surface and in a secondary containment system.
- It is to be ensure that that no unauthorized dumping of used oil and other hazardous waste is undertaken at the site.
- A logbook should be maintained for quantity and type of hazardous waste generated.
- All the hazardous waste and biomedical waste required to be handed over to the authorized vendor.
- Oil/chemicals would be stored on paved impervious surfaces with proper shade and bund and secondary containment would be provided for fuel storage tanks.
- Unloading and loading protocols should be prepared for fuels, acids, chemicals respectively and workers trained to prevent/contain spills and leaks, and in case of accidental/unintended spillage, the contaminated soil should be immediately collected and stored as hazardous waste.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Medium	Moderate	Moderate	Intermittent	Substantial
With Mitigation Measures	negative	Medium	Short	Low	Intermittent	Small

7.5.2.4 Water Resources

7.5.2.4.1 Water Availability

During operation phase, water would be required for domestic use kitchen use, laundry use etc. Water will also be required for landscaping activity. A detailed estimation of water requirement is provided in ***Table*** 2-5 and ***Table*** 2-6 in ***Section 2.5***. It is estimated that approximately 628 m^3/day of water will be required during the operation period encompassing all water demand for domestic use, kitchen use, laundry use and landscaping activity. In addition to that water would be required for fire management. It is understood that water will be supplied by Baghdad municipality directly to the hotel through existing water pipeline.

Impact Magnitude

The water during the operation period will be supplied by Baghdad municipality and community water body will not be used to source the water. Therefore, the spread is considered as Local. Duration is considered as permanent as this water demand is required for entire project life.

Baghdad is grappling with major water management challenges driven by rapid urbanization, population growth, and climate variability. The city depends heavily on the Tigris and Euphrates rivers for its water supply, as rainfall remains highly unpredictable.

Accelerated urban development and rising population have pushed per capita water consumption to about 250 litres per day within Baghdad and up to 300 litres per day in surrounding sub-districts. The population has surged from roughly 3.98 million in 2000 to nearly 8.05 million in 2020, resulting in an estimated daily water demand of approximately 2.01 million cubic meters. When this overall demand is compared to the water requirement for the project during its operational phase, the project's demand appears negligible. Therefore, considering the extent, duration, and intensity of the impact, the overall impact magnitude is assessed as low.

Proposed Mitigation Measures

- It should be ensured that the there is no leakage of water from the water distribution system
- Water meter to be installed at water take point to monitor the usage of water.
- Water conservation measures to be implemented.
- Implement water recycling if feasible.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Permanent	Low	Routine	**Small**
With Mitigation Measures	Negative	Local	Permanent	insignificant	Routine	**Negligible**

7.5.2.4.2 Water Contamination

During the operational phase, wastewater generated will mainly comprise domestic sewage from guest rooms and common areas, as well as wastewater from laundry and laboratory activities. If not properly managed, these waste streams could increase the pollution load in receiving land or water bodies and pose a risk of groundwater contamination. It is estimated that approximately 533.8 m^3/day of wastewater will be generated, assuming that about 85% of total water consumption is converted to wastewater. All wastewaters will be collected through an internal drainage system and discharged directly into the existing municipal sewer network for treatment. As no surface water bodies are located within the project site, and wastewater will not be discharged on land or into surface water, the risk of surface and groundwater contamination during operation is considered low.

Impact Magnitude

Since the generated wastewater is directly to the municipal sewer network, the overall impact significance is considered as Negligible.

Proposed Mitigation Measures

- Installation of flowmeters at each of the outlets from the buildings to monitor the generation of wastewater.
- The surface runoff from hotel premises shall be diverted to a settlement tank for settlement of suspended solids. The overflow shall be treated in water treatment unit and recycled in the Project.
- The sewer network should be checked regular to prevent any accidental leakage from sewage pipeline.
- Route boiler condensate through a neutralization unit (limestone or equivalent) prior to discharge to control acidity.
- Discharge treated boiler condensate and softener regeneration brine only through approved sewer network.
- Use corrosion-resistant piping (PVC/HDPE) for boiler condensate lines to prevent leaks and material degradation.
- Conduct periodic inspections of the boiler room and condensate systems to identify and address leaks or blockages promptly.
- Optimize boiler blowdown and water softener regeneration cycles to minimize wastewater generation and pollutant load.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Permanent	insignificant	Routine	**Negligible**
With Mitigation Measures	Negative	Local	Permanent	insignificant	Routine	**Negligible**

7.6 Impacts on Ecological Environment

The possible impacts on the biological environment in construction and operation phase have been assessed below

7.6.1 Construction Phase: Impact Assessment

7.6.1.1 Habitat modification due to Vegetation Clearance

Habitat modification is anticipated during the construction phase. The main cause of habitat modification will be site clearance activity for the construction period. At present, the project is in construction phase. Therefore, it could not be possible to ascertain the floral diversity within the project site before initiation of construction activities. However, desktop analysis of google earth imagery indicates that the project is located in a modified habitat within the Baghdad city. The land use of the project site can be classified as commercial area. The analysis of Google earth imagery also reveals that, no dense vegetation was present within the project site before starting of construction, only few individual trees, concentrated mainly on the western boundary of the project site. The project site also experiences high anthropogenic pressure, and very few trees are located mainly along the existing road network.

It is anticipated that clearance of vegetation would lead disturbance to local avian species to some extent considering high anthropogenic pressure on the existing environment. But, as project is not located within any natural habitat, the habitat disturbances would not be very significant.

Impact Magnitude

The site clearance activity will be limited to only project footprint area. No site clearance is planned beyond the project site boundary. Therefore, the spread of impact is considered as Local. The duration of the impact is considered as permanent considering the project land will be used permanently for operation of commercial hotel. The intensity of the impact would be low considering the project site is located within highly urbanized area and no natural habitat is going to be disturbed during the construction period. Therefore, considering the spread, duration and intensity, the overall impact has been classified as small.

Proposed Mitigation Measures

- No tree falling activities will be carried out outside the project footprint area.
- Before cutting off any tree, ensure that no nest of avian species is present on tree.
- Carry out plantation of native plants within the project boundary, on the available land.
- Prohibit use of herbicides.
- Prohibit unnecessary disturbance of neighboring vegetation due to vehicular movement and destruction of floral resources.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Permanent	Low	Routine	Small
With Mitigation Measures	Negative	Local	Permanent	Insignificant	Routine	Negligible

7.6.1.2 Habitat disturbance due to Construction Activity

Disturbances on existing habitat is anticipated due to construction activities such as site preparation and foundation work, movement of construction vehicles, artificial illumination from the construction site, increase noise level, influx of labour, and increases movement of people and goods. These activities are evaluated in terms of habitat and species disturbance.

Site preparation will involve removal of vegetation. Analysis of Google Earth imagery indicates that only a few standing trees are present within the project site, primarily concentrated along the western boundary. The floral species recorded in this region (are common and widely distributed. Consequently, vegetation clearance is anticipated to be minimal. However, even limited removal of vegetation may result in habitat disturbance for faunal species, particularly avifauna, due to loss of nesting and foraging areas.

Generation of noise during the construction period is associated with construction work, operation of construction machineries and movement of construction vehicles. It is anticipated that noise generated during the construction work would have negative impact on the existing avian species. Generation of noise may force the avian species to avoid the surrounding area of construction site which ultimately leads to disturbance of their habitat.

Movement of construction vehicles, particularly within the project site, will generate fugitive dust. Dust deposition on foliage along roadsides and adjacent areas can reduce photosynthetic efficiency by obstructing leaf surfaces, ultimately impacting plant health and growth. This indirect effect may alter the microhabitat and food availability for dependent species.

Artificial illumination from the construction site and camp office during nighttime may disrupt the nocturnal behaviour of certain mammalian and avian species. Artificial illumination also has potential to affect the avian species nested near to the construction site by altering their biological clock if occur for longer period of time.

Impact Magnitude

The site clearance and construction activity will be limited to only project footprint area. No construction activity is planned beyond the project site boundary. Therefore, the spread of impact is considered as Local. The duration of the impact is considered as permanent considering the project land will be used permanently for operation of commercial hotel. The intensity of the impact would be low considering the project site is located within highly urbanized area and no natural habitat is going to be disturbed during the construction period. Therefore, considering the spread, duration and intensity, the overall impact has been classified as small.

Proposed Mitigation Measures

- Restrict vegetation clearance activities within the project site.
- Prohibit unnecessary disturbance of neighbouring vegetation due to vehicular movement, and destruction of floral resources.
- Do not harm any nests of ground dwelling birds/reptiles and in case of disturbance, quickly notify to the competent authority for rescue.
- All construction activities would be undertaken with appropriate noise mitigation measures to minimize disturbance to faunal species specially the herpetofauna in the region.
- Restrict construction activities to daylight hours to prevent disruption of the natural night period by artificial lighting.
- To prevention of introduction of Invasive Alien Species, it is recommended that clients would include a provision in suppliers 'contracts that equipment/machineries would arrive "clean as new".
- An Invasive Species Management plan should be developed for management of Invasive species.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Permanent	Low	Routine	Small
With Mitigation Measures	Negative	Local	Permanent	Insignificant	Routine	Negligible

7.6.2 Operation Phase: Impact Assessment

During the operation phase, the impact on existing ecological environment is not anticipated as no natural habitat is involved as the project is located in a highly urbanized area in Baghdad city.

7.7 Impacts on Socio- Economics

The socio-economic assessment would be carried out in the given below criteria for all the phases of the Project including:

- Pre-construction (planning) phase
- Construction Phase
- Operation Phase

7.7.1 Impact during Planning Phase

7.7.1.1 Transfer of Government Land

Based on discussion with Client it was inferred that government land has been transferred for the project by Baghdad Municipality. There were 22 land parcels which have been merged and transferred for the project. Total land required for the project is 46415 sq. m (4.64 hectares, the land for the project is present within Green Zone which a highly secured zone designated for government offices, international Embassies, residential area of Ministers and Bureaucrats etc. The land has been leased out for 40 years and Estithmar has obtained Investment Certificate from National Investment Commission. As understood the land was initially part of Iraqi President Saddam's Hussain's Presidential Palace, however post collapse of his regime the land has been transferred to Baghdad Municipality. The land has been transferred by the Baghdad Municipality for development of the project.

As confirmed by the Project representative, the land was provided in clear and vacant condition, with:

- No residential or commercial structures
- No agricultural activity
- Minimal greenery and no significant ecological features
- There were no recorded claims, encroachments, or customary users

Control Measures for the Project

Reportedly Project Proponent has obtained land transfer certificate from National Investment Commission, through the Baghdad Mayoralty and also obtained Investment Certificate from NIC.

Impact Magnitude

At this stage, the impact magnitude is considered low to moderate. This is due to following reasons:

- The land parcel is state-owned and officially designated for government and development within the "Green Zone" area of Baghdad city.
- Official records show no evidence of private ownership, agricultural activity, or existing occupants in the land parcel.

Proposed Mitigation Measures

To ensure full compliance with Iraqi regulatory requirements—as well as good international industry practice (e.g., IFC PS5,)—the following mitigation measures are proposed:

- Verify and document the current occupancy status, operational condition, and any historical land use.
- Engage local authorities and consult surrounding community members to confirm:
  - Whether any informal users were ever present
  - Whether the State previously undertook clearance actions
  - Record written minutes and attendance sheets to substantiate due diligence
  - Assess if any displacement or loss of access occurred prior to granting the concession
  - Document adherence to Iraqi procedures for State land reclamation
  - Develop a corrective action plan if any gaps are identified
- Maintain comprehensive records, including land transfer documents, valuation reports, concession agreements, and official State approval letters.
- Archive all findings from site inspections and stakeholder consultations.
- Establish and publicly communicate a Grievance Redress Mechanism (GRM) accessible to local communities and potential claimants.
- Ensure alignment of all land-related processes with national laws governing State property, land concessions, investment regulations, and municipal-level administrative approvals.

7.7.2 Impact during Construction Phase

7.7.2.1 Impact due to Migrant workers

The project will employ skilled, semi-skilled and unskilled workers, including contractual and regular employees and local and Migrant workers. As per information received from EPC Contractor, there are around 2170 contractual workers deployed at site of

which the majority are migrant workers from other countries Bangladesh, Egypt, India, Kenya, Pakistan, Syrian Arab Republic and around Iraq. Around 1725 migrant workers are provided accommodation in three labour camps. Based on information obtained from HR official of UCC at site it was inferred that of 400 workers from Iraq, around 80-90 workers are from other Governorates of Iraq. Hence majority of workers deployed at site are migrant workers. The regular skilled workers comprise of migrant workers, from different governorates of Iraq and also from other countries such as Pakistan, India, Bangladesh, Kenya etc depending upon the need for technical expertise. Semi-skilled/unskilled labourer can be hired locally from the project village and the study area villages. As per details shared, there are around 1593 workforce, of which 1488 unskilled workforce, around 198 semi-skilled workforce and around 198 skilled workforces. The details regarding the workforce of the Project site are estimated to be 2500-3000 numbers of maximum workers during construction phase.

During site visit it was inferred that UCC provides labour camps in rented buildings in Karrada area around 3-5 km from project site, the labour camps are situated in residential areas.

The project proponent has ensured to guarantee labourers with the Law of 37 of 2015 (Labour Law) which prohibits forced labourers and employment of minor children below the age of 15 years in any hazardous activities like construction work. As per UCC's policies, the minimum age of employment is 18 years.

The labour influx is likely to create the following issues:

- Labor influx in the Baghdad city may add pressure to their resources like food supply, water, and sanitation facility etc.
- Labor influx may add health and safety and security risks for the residents in Green Zone and in vicinity to labour camps.
- Labor influx may also lead to safety and security issues for local residents.
- This may impact human rights related to violation of the right to non-discrimination in the local area in the process of employment. The employment process of the local community may possibly violate the human rights of non- discrimination, corruption, accountability, and transparency.
- Labor influx may add health and safety risks for the city like spread of contagious diseases and communicable diseases such as STDs and HIVs/AIDS
- Cases of violence against women where safety gets affected by external community in their proximity.
- Conflict with local cultures, values and religious/societal sentiments could arise between project engaged staff/laborers and local people.

Control Measures for the Project

The project is being developed by EPC contractor which has developed a site specific EHS plan, as well as procedures for monitoring the EHS performance in line with UCC's corporate requirement and Project Proponent's requirement. There are camp bosses deployed in each labor camp and camp manager supervising the worker's accommodations for all three camps and also training them about Dos and Don'ts's at the labor camps respectively. Further UCC has site specific Labor Camp HSE plan which is implemented at site.

Impact Magnitude

At this stage, the impact magnitude related to potential labor influx is assessed as substantial to small.

Rationale:

- The project is located within a secured Green Zone and the labor camps are situated in Karrada area within ambit of Baghdad Municipality where adequate municipal infrastructure and services are available.
- Workforce requirements are largely met by migrant workers from other countries and also from local area and regional labor markets within Iraqi governorates.

Proposed Mitigation

The intensity of labour influx and welfare is understood to be low, and hence the following measures should be put in place to ensure that the local community's safety and convenience, as well migrant labour welfare is maintained:

- Regular Monitoring and auditing mechanism should be in place for monitoring the sub-contractors and suppliers with respect to compliance to IFC PS 2 requirements, in terms of resource, migrant workers, child labor and forced labor, health and safety, payment of wages, etc.

- The Project shall provide training or induction program related to the gender sensitization and gender-based violence to all employees at the time of commencement of their job.
- Provide training to all workers (contracted or migrant) during their commencement of job on Gender policies and procedure of filling of complaint. Further, refresher training shall be given in every quarter to each worker.
- Implement a hiring policy prioritizing local and provincial residents to reduce need for migrant labor and enhance local economic benefits.
- Enforce a mandatory Code of Conduct for all workers addressing behavior, interactions with local communities, respect for cultural norms, prevention of Gender-Based Violence/Sexual Exploitation and Abuse/Sexual Harassment, and sanctions for violations.
- Conduct regular health check-ups, communicable disease screening, and awareness programs on HIV/AIDS, STDs, and general hygiene to minimize public health risks.
- Establish rules governing worker movements, use of local services, and interaction with the community to avoid social tensions and cultural conflicts.
- Implement separate, confidential GRMs for workers and community members to report labour-related issues, Gender-Based Violence/Sexual Exploitation and Abuse/Sexual Harassment concerns, discrimination, or conflicts.
- Train security personnel in the Voluntary Principles on Security and Human Rights (VPSHR), with clear protocols to prevent intimidation, harassment, or excessive use of force.
- Maintain ongoing engagement with municipal authorities and community representatives in Baghdad.
- Conduct awareness sessions for workers on local customs, religious practices, and societal expectations within Baghdad to reduce cultural friction.
- Project proponent is recommended to ensure that basic facilities such as bio-toilets, clean drinking water are provided to the workers deployed by EPC Contractors during construction and operation phase.
- The turnkey/EPC Contractors as appointed are recommended to formulate Contractor Management Plan, and Labor Influx Management Plan and implement the same at site. The project proponent to ensure that the above-mentioned plans are being implemented and are as per corporate plans of UCC, Qatar and Estithmar corporate plans also manage and supervise that the working condition of the contractual workforce as referred to in the EPC Agreement are adhering to the Contractor Management Plan and Labor Influx Management Plan of Estithmar.
- UCC is recommended to ensure that site specific Labor Camp HSE plan is implemented at site.
- The contractors would also need to groom the migrant workers about Dos and Don'ts during they stay at project site.
- The project proponent would also ensure that the waste generated by the migrant workers while residing in vicinity to project site are disposed properly thereby not causing nuisance to the surrounding communities.
- The project proponent would formulate GRM for the contractual workers including the migrant workers and also make them aware of the process to followed to lodge any complaints or grievances. Further, the complaints lodged would be timely redressed and recorded for future reference.
- UCC is recommended to obtain Social Security registration from MoLSA and ensure that the welfare facilities are provided to them as per Law no 18 of 2023.
- UCC is recommended to provide health/medical insurance to the workers.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Receptors' Vulnerability	Magnitude of Impact
Without Mitigation Measures	Negative	Medium	Short	Insignificant	Intermittent	High	Substantial
With Mitigation Measures	Negative	Medium	Short	Insignificant	Intermittent	Medium	Small

7.7.2.2 Stress on Local Community

As understood around 2500-3000 workers are being deployed during construction stage. During site visit it is to be understood whether the labours are local or migrant from other Governorates/countries. An influx of laborers into a city can significantly affect local resources in various ways. One of the most immediate impacts is increased pressure on housing, often leading to higher rents, overcrowding, and even the growth of informal settlements when supply cannot keep up with demand. However, as reported by Client labor camps have been formed to provide accommodation for the workers. Public services such as healthcare, education, transportation, and waste management also experience added strain, resulting in longer wait times, reduced service quality, and greater demand on administrative systems. During site visit it was inferred that there are two medical aid centers operated by UCC, one medical aid center is situated within project site and the other one in Karrada area which can be accessed by the workers from

their labor camp. Reportedly the medical centre has preliminary first aid provisions. For any further treatment, the workers visit the associated hospitals (tie up) - Government hospital and to Saint Rapheal hospital. This may likely create additional pressure on the existing local health care facility. Additionally, the consumption of essential utilities—including water, electricity, and fuel—rises sharply, placing stress on infrastructure that may already be aging or insufficient. Environmental impacts can also occur, as more people generate greater amounts of waste, contribute to air pollution, and drive urban expansion that reduces green spaces. Traffic congestion typically worsens due to the increased population, leading to longer travel times and higher maintenance needs for transportation networks. Economically, the influx can be beneficial by expanding the workforce and stimulating local businesses, but it may also create downward pressure on wages and competition for jobs. Socially, rapid population growth can challenge community cohesion and cultural integration.

The project-related construction activities are understood to span for 19-20 months and would require water for drinking, cooking and sanitary purposes. As reported by the Client team, construction water requirement will be met through Baghdad Municipality. This water consumption during construction phase may put stress on water resources used during construction phase.

Impact Magnitude

The impact magnitude is considered substantial to small, as the construction phase is temporary would last for short duration of time and the project area is situated in urban setting with adequate supply of water, fuel through public utility systems. The Baghdad city has good network of existing roads and highways and basic infrastructure that can support limited additional pressure. As understood power supply in Baghdad city is erratic, however reportedly along with government electricity supply additional DG Sets are being used to source power for the construction site including labor camps.

Proposed Mitigation Measures

1. A worker code of conduct shall be established to prevent construction workers and contractors from using local community resources such as water, fuel etc. and emphasis shall be given to use the resources provided by the Contractors. The code shall be communicated to all contractors and workers.
2. Alternate sources of water, such as water tankers, shall be identified to reduce dependency on a single government supplied water schemes.
3. Periodic maintenance of roads used for transportation of construction materials shall be undertaken to minimize wear and disruption caused by construction activities.
4. A Grievance Redressal Mechanism shall be provided for all key stakeholders to report and resolve concerns related to the misuse of locally available resources.
5. Adequate sanitation, waste disposal, and drinking water facilities shall be provided for construction workers to prevent pressure on the resources.
6. Construction timelines and material transport schedules shall be coordinated to minimize stress on local infrastructure and community resources.
7. UCC to ensure that the medical aid centres are equipped with lighting & potable water, vehicular access for ambulance, fully stocked first-aid kit, blood pressure monitor, stethoscope, digital thermometer, oxygen cylinder with regulator & masks, AED (recommended on large sites), splints and immobilization supports, eye-wash station (or bottles), burn treatment kit, CPR mask / resuscitation bag etc. as per ILO standards. [36]

	Nature Impact	ofSpread Impact	ofDuration	Intensity	Frequency	Receptors' Vulnerability	Magnitude of Impact
Without Mitigation Measures	Negative	Local	Short	Low	Intermittent	Medium	**Substantial**
With Mitigation Measures	Negative	Local	Short	Insignificant	Intermittent	Low	**Small**

[36] https://www.ilo.org/topics-and-sectors/occupational-safety-and-health-guide-labour-inspectors-and-other/how-can-occupational-safety-and-health-be-managed/first-aid.

7.7.2.3 Impact on Economy and Employment

Construction of a hotel can have significant positive impacts on both the economy and employment, during the construction phase. The construction of a hotel stimulates the economy by generating substantial investment in materials, equipment, and local services, which in turn boosts business activity in the area. During the construction phase, it creates a wide range of jobs for engineers, architects, construction workers, suppliers, and transport providers, contributing directly to employment and income generation. Additionally, during construction phase, Client/EPC Contractors can also partner with local suppliers for food, furniture, laundry, transport service, requirement of heavy machineries and equipment for construction and other services for the benefit of workers deployed in construction site by creating indirect jobs and strengthening local industries Hence, local businesses may experience increased demand for goods and services such as food, transportation, and accommodation to support the workforce. These impacts are anticipated to be positive, localized, and temporary, limited to the duration of the construction activities.

The local community is likely to be benefited from the economic opportunities to be created from the following:

- Civil work during construction phase including construction of boundary walls and other works
- Self-employment options for individuals possessing vocational or technical training skills like electricians, welders, filters etc
- Additionally, there would be some skilled labour required that would be brought in from other governorates (if not present in the local area) that would also lead to a spike in economic activity in the area, during the construction phase.
- Contracting opportunities for locals possessing tractors, dumper trucks or their vehicles which would be needed to carry away excavated soil and other material. Creation of indirect employment for local community through establishing small shop like tea stalls, supply of intermediate raw materials, repair outlets, hardware stores etc. However, these are likely to be temporary.
- Furthermore, there may be a need for skilled labour from other regions if it is not readily available locally. This influx of skilled workers during the construction phase would also contribute to an increase in economic activity within the area. This would lead to better business opportunities for smaller vendors in the area owning petty shops, petty contractors' firms, etc. for providing essential goods and services to the Project.

Control Measures for the Project

The project proposes to prioritize the recruitment of local labour wherever feasible and ensure that contractors comply with labour regulations and provide fair wages. Coordination with local vendors for the sourcing of construction materials and services is intended to support the local economy. During site visit it was inferred that UCC has deployed local transportation company for providing vehicles and buses for commuting the workers from labour camps to project site. Further local caterers have been involved for providing food service for the workers. UCC has also deployed local companies for providing equipment and heavy machineries required during construction phase. Further as inferred, the raw materials required during construction phase such as sand, aggregate, steel etc are majorly procured from Iraq.

Impact Magnitude

The economic benefit of the project during construction is expected to be substantially positive, as it will provide temporary employment and stimulate local business activity, but the impact will be confined to the construction period.

Proposed Mitigation Measure proposed for the project

- A transparent hiring plan shall be implemented to maximize local employment (around 50 %) and inform the community about available job opportunities.
- Equal access shall be provided to both female and male residents for available employment opportunities.
- Skill development and technical or vocational training shall be arranged for local residents, including women, to enhance employability beyond the project.
- Local procurement of materials and services shall be encouraged wherever feasible.
- Timely payment of wages/salaries to local workers shall be ensured to maintain economic stability.
- A mechanism shall be established to audit sub-contractors and suppliers to ensure compliance with the use of local labour laws and resources.
- The Client would formulate a grievance mechanism for all stakeholders including contractor and contractual workers so that they can raise and register their grievance with respect to jobs and employment opportunities.

	Nature of Impact	Spread Impact	ofDuration	Intensity	Frequency	Receptors' Vulnerability	Magnitude of Impact
Without Mitigation Measures	Positive	Local	Permanent	Moderate High	ofRoutine	Medium	**Substantial Positive Impact**
With Mitigation Measures	Positive	Local	Permanent	Moderate High	ofRoutine	Medium	**Substantial Positive Impact**

7.7.2.4 Labour Rights and Welfare

The project will employ skilled, semi-skilled and unskilled workers, across the project lifecycle, which will include contractual and regular employees and local and migrant workers. The hotel construction can provide many job opportunities, but it may also expose workers to challenges such as long working hours, unsafe conditions, and inconsistent wage protections—especially if contractors rely on temporary, low-skilled, or migrant labour. In some cases, limited oversight can lead to poor enforcement of safety standards, inadequate protective equipment, and higher risk of workplace injuries. Wage-related issues may also arise, including delayed payments, lack of written contracts, or withholding of benefits such as overtime pay and social security contributions. Additionally, workers may face job insecurity due to short-term contracts common in the construction sector.

At the same time, growth in the hotel industry can encourage improvements in labour rights if authorities and developers prioritize compliance with Iraqi labour laws and international standards. Hence, the overall, the impact of hotel construction in Baghdad on labour rights and welfare is mixed: whereby it offers major employment potential and skills development, but also carries risks related to safety, wage fairness, and job security if adequate regulation and monitoring are not enforced.

During the site visit, several potential compliance and welfare concerns were identified. These shall be included for review through internal and external audits and subsequent addressal through mitigation measures. There is a need for improvement in:

- Transparency around working hours and overtime practices, leaves and entitlements, and scheduled monthly payment of salary.
- Grievance resolution mechanisms to address workers issues related to timely payment of wages and overtime, social security registration for contractual and temporary workers.
- Occupational health and safety management system including safety training, toolbox talks, PPEs and related aspects.
- Accommodation conditions including sanitation facilities, ventilation, water supply, and food quality.
- Work scheduling practices, particularly for night-shift operations.
- Medical support comprising of access to on-site medical care, health insurance coverage and out-of-pocket expenses for treatment.
- Provision of personal protective equipment (PPE) and security gear.

With respect to freedom of association and collective bargaining, no formal workers' unions were identified. However, management has established worker representative mechanisms, including nationality-based and labour-camp-based representatives, who serve as a channel for communicating general worker concerns.

The site has an established worker representation mechanism, with eight representatives selected based on nationality and communication ability to facilitate effective engagement. Representatives meet regularly with the Welfare Officer, with issues formally documented and escalated to management.

Approximately 15–20 female staff are deployed on site and are provided with separate washroom facilities and dedicated workspaces; female employees reported a respectful work environment with no incidents of discrimination or SEAH, although childcare facilities are not currently available.

Labour Accommodation:

During the site visit, some areas for improvement were noted in the labour camp facilities. Shared washrooms are used by many occupants, which places pressure on available facilities, and first-aid support within the camps is limited. Workers also shared

feedback regarding food quality. In addition, fire safety arrangements at the labour camps would benefit from further improvement to better align with good practice.

Workers shared that ongoing enhancements to welfare provisions and camp management would further support a positive living environment and strengthen overall worker well-being including unrest among workers, discrimination of workers etc.

Control Measures for the Project

During site visit it was inferred that to ensure labour rights and welfare, UCC has deployed welfare officer who is responsible for overall welfare of the workers at site. Further there is HSE manager to manage the HSE aspects, HR manager at site with separately appointed camp manager and camp bosses at labour camps. Reportedly welfare calendar is formulated at site level as per which various welfare activities such as medical check-ups and recreational activities are to be conducted.

Impact Magnitude

The intensity of the impact is evaluated as Major to Small

Proposed Mitigation Measures

- The labour accommodation facility for contractual workers and as well as for regular employees should meet the requirements of the IF PS2 standards, EBRD Worker Accommodation norms, ILO norms and other GIIP guidance in terms of space per worker, water, and sanitation facilities, first aid, lighting and ventilation, health and safety, grievance redressal, welfare etc. and regular monitoring should be undertaken to ensure compliance through the project lifecycle
- Project should also ensure a monthly and regular auditing mechanism for monitoring the contractors and suppliers with respect to compliance to the applicable reference framework, in terms of resources, migrant workers, child labour and forced labour, health and safety, payment of wages, social security and welfare schemes etc as per Law no 37 of 2015.
- Project shall also establish provisions related to non-employment and abolition of any form of child labour and forced labour in the contractual agreement with suppliers and as well as contractors
- Establish a grievance redressal mechanism in place and impart GRM training on regular basis to the workers and workers employed by supplier to make them aware on the process on reporting any concern or grievance related to work activities.
- UCC is recommended to ensure that the welfare activities are duly implemented as per scheduled calendar.
- UCC is recommended to provide medical facilities and conduct medical check-up for the workers on timely basis and maintain records of same for future reference.
- UCC is recommended to ensure that the working hour for the workers are adhering to Law No 37 of 2015 and implementation provision of overtime wage payment in case the work is exceeding 8 hours/day or 48 hours/week.
- UCC is recommended to ensure that weekly offs are provided to the workers with provisions of leaves.
- Project proponent is recommended to conduct formal labour audit during construction phase to systematically assess UCC's compliance with applicable labour laws, contractual obligations, and international labour standards, with particular focus on wages, working hours, overtime, social security, occupational health and safety, grievance mechanisms, and worker welfare. The audit would also identify gaps related to legal compliance, ethical employment practices, and risk exposure, while ensuring fair treatment of workers, protection of labour rights, and alignment with regulatory requirements and IFC Performance Standard 2.
- Further, to ensure the labour rights and welfare, the project shall implement ILO's fundamental instruments ratified by Iraq[37]:
    - Forced Labour Convention, 1940 (No 29)
    - Right to Organise and Collective Bargaining Convention, 1949 (No. 98)
    - Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)
    - Equal Remuneration Convention, 1951 (No. 100)
    - Abolition of Forced Labour Convention, 1957 (No. 105)
    - Discrimination (Employment and Occupation) Convention, 1958 (No. 111)
    - Minimum Age Convention, 1973 (No. 138) (Minimum age specified: 15 years
    - Worst Forms of Child Labour Convention, 1999 (No. 182)

[37] https://normlex.ilo.org/dyn/nrmlx_en/f?p=NORMLEXPUB:11200:0::NO::P11200_COUNTRY_ID:102974

- Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)

	Nature of Impact	Spread of Impact	Duration of	Intensity	Frequency	Receptors' Vulnerability	Magnitude of Impact
Without Mitigation Measures	Negative	Local	Short	High	Routine	High	Major
With Mitigation Measures	Negative	Local	Short	Moderate	Routine	Medium	Small

7.7.2.5 Occupational Health and Safety

During construction phase, the potential occupational health and safety risks which are observed are as follows:

- Risks of workers falling from heights while constructing hotel tower or installing components.
- Injuries from improper lifting techniques or machinery malfunctions.
- Risk of crushing injuries or falling loads during hoisting operations.
- Risks of operator error or accidents due to prolonged shifts or fatigue.
- Risks of electrical shock or burns during the installation of electrical components, wiring, and connections.
- Potential for serious burns or injuries from arc flashes during electrical work.
- Potential for workers to be caught between machinery during construction phase.
- Significant risk of injury or fatality from working on elevated platforms, towers, or scaffolding during assembly of components in hotel.
- Accidents involving construction vehicles, cranes, and transport trucks on-site.
- Risk of injuries from pedestrian workers being struck by moving vehicles or equipment.
- Prolonged exposure to loud machinery, cranes, and other equipment could lead to hearing loss or damage.
- Risks from exposure to paints, chemicals, solvents, or lubricants used during assembly or maintenance.
- Risks related to entering confined spaces, such as basements, without proper ventilation or safety protocols.
- Difficulty in evacuating workers during emergencies due to tight working conditions.
- Risks from working in high temperatures or direct sunlight for prolonged periods in Baghdad.
- Risks of cuts, abrasions, or crushing injuries from power tools, welding equipment, and other machinery.
- Potential accidents from faulty or improperly maintained equipment.
- Disease caused due to consumption of unhygienic water.
- Additional risks include fire hazards from flammable materials, inadequate site security, and limited access to clean water, sanitation, and first aid.

Control Measures for the Project

The Client shall implement a comprehensive site-specific Occupational Health and Safety (OHS) framework to ensure the safety and well-being of all personnel during construction and operation phases. During site visit it was inferred that UCC has Quality Policy, Occupational Health and Safety Policy and Fire Safety policy in place and for the same site-specific health and Safety plan, site-specific Emergency Response Plan, Fire safety plan etc are in place. Reportedly as part of Occupational Health and Safety during construction phase the EPC Contractors has developed checklists, templates, and plans in line with OHS requirements of Client. These include:

- EHS Audit Checklist to ensure compliance with safety standards and practices.
- EHS Training Template to provide structured training to all workers.
- Incident Reporting and Investigation procedures to document, analyse, and prevent workplace incidents.
- Emergency Response Framework to address any onsite accidents or emergencies effectively.
- Training and Competence programs to ensure that all workers are qualified and competent for their respective tasks.
- Personal Protective Equipment (PPE) are provided to all workers, including safety shoes, helmets, goggles, safety gloves, earmuffs, harness belts and face masks as applicable to the work being performed.

Impact Magnitude

Occupational health and safety risks are expected to be confined to the Hotel project site. The spread of the impact has therefore been categorized as local. The construction phase of hotel is expected to last approximately 19-20 months, and the impact duration has been classified as short. The intensity of potential impacts has been classified as high due to the presence of heavy machinery, electrical equipment, and construction activities.

The Client has a corporate-level occupational health and safety management system that will be implemented at the site, to mitigate and manage any hazard which can lead to adverse effects on workers. Therefore, the overall impact magnitude has been classified as substantial. Workers may be exposed to fire hazards, physical hazards, and chemical hazards if adequate training, awareness, and management measures are not effectively communicated and implemented. Consequently, the probability of occurrence of such incidents has been categorized as unexpected to possible.

Proposed Mitigation Measures

- All workers, including regular and contracted personnel, shall be provided with training on health and safety policies and procedures, with appropriate refresher courses conducted throughout the lifecycle of the Project.
- A site-specific training calendar shall be developed and implemented onsite.
- A permitting system shall be implemented for work in confined spaces and to ensure that cranes and lifting equipment are operated only by trained and authorized personnel.
- Appropriate safety harnesses and lowering/raising tools shall be used for work at heights.
- Safe drinking water supply, meeting IQS 417/2009 standards[38] and WHO standards, shall be provided for all workers.
- Workers shall be provided with adequate breaks, including at least a 30-minute interval after five hours of work.
- Adequate lavatory facilities, including toilets and washing areas, shall be provided for the expected workforce at the Project site.
- First aid boxes shall be maintained at all construction sites, with a qualified person appointed to manage them, and expired medicines shall be replaced as required by law.
- All equipment shall be turned off and checked when not in use.
- All construction activities (to the extent possible) should be carried out during daytime hours and vigilance should be maintained for any potential accident.
- Working hours shall be adjusted to limit exposure to extreme heat during summer months.
- Personal Protective Equipment, including safety shoes, helmets, goggles, earmuffs, and face masks, harness belts hall be provided to all workers, and a PPE inventory shall be maintained onsite.
- Structural integrity of all work areas and equipment shall be checked before commencing any work.
- Electrical and maintenance work shall not be carried out during poor weather conditions.
- Excavated areas shall be temporarily fenced to prevent access by outsiders and wildlife.
- Rest areas shall be provided for workers to take meal and tea breaks.
- Regular medical check-ups shall be conducted for all project personnel and workers.
- Periodic occupational health and safety audits shall be carried out by Client's corporate team or an external party to ensure compliance with all safety standards.
- Structural integrity should be checked before undertaking any work
- Work permits and job safety analysis to be conducted prior deployment of workers.

	Nature of Impact	Spread Impact	ofDuration	Intensity	Frequency	Probability of Occurrence	Incidence	Significance of Impact
Without Mitigation Measures	Negative	Local	Short	High	Routine	Unexpected to Possible		Substantial
With Mitigation	Negative	Local	Short	Moderate	Routine	Unexpected		Small

[38] https://tj-es.com/ojs/index.php/tjes/article/view/1606

	Nature of Impact	Spread Impact	ofDuration	Intensity	Frequency	Probability of Occurrence	Incidence	Significance of Impact
Measures								

7.7.2.6 Community Health and Safety

Based on Google Earth imagery review, the Project is surrounded by commercial and residential land use. During site visit it was inferred that there are private land parcels surrounding the project land where residential buildings are present. Further, there are government residential areas, Prime Minister's Guest House in vicinity to project site. During site visit it was observed that there are few residential structures in vicinity to the project site and there is no access restriction for such residential buildings due to the project. Further the labour camps are situated in residential areas hence there can be community health and safety risks for the local residents and local community around labour camps.

However, there are community health and safety risks associated during construction phase, which are listed below:

- Dust and Air Pollution: Excavation and material handling generate dust and fine particles, causing respiratory issues for nearby residents.
- Noise Pollution: Heavy machinery and equipment produce high noise levels, leading to stress, sleep disturbance, and potential hearing problems.
- Traffic Congestion and Accident Risk: Increased movement of project-related vehicles may disrupt traffic flow and increase the risk of road accidents, potentially affecting emergency service access. Project-related traffic will primarily use Qadisya Expressway and Arbataash Tamuz Street, which connect to Airport Road the main arterial route linking the Green Zone and central Baghdad to Baghdad International Airport with peak movements expected during morning and evening commute hours, hotel check-in/check-out periods, and service deliveries. In accordance with the traffic risk assessment, sensitive receptors along these routes include nearby residential areas, government buildings, and commercial buildings.
- Vibration Impact: Pile-driving and excavation can cause ground vibrations, potentially damaging nearby structures and disturbing residents.
- Hazardous Material Exposure: Improper handling of chemicals, fuels, and construction materials can contaminate soil and water, posing health risks.
- Sanitation and Disease Risks: Worker camps with poor hygiene may lead to the spread of communicable diseases to surrounding communities.
- Emergency Safety Hazards: Unsecured construction zones, falling objects, and open excavations increase injury risks for workers and passersby.
- Security and Safety Risks for community near labour camps: Influx of huge number of migrant labours from various background and nationalist may pose safety and security to local community near labour camps.
- Risk related to Harassment and Gender Violence: There are all male migrant labours deployed at site who are provided accommodation in labour camps situated in residential area, hence there is potential risks associated with harassment and gender violence particular to women and children in the local community.

Control Measures for the Project

Control measures planned for the Project include:

- The project has traffic management plan which is implemented at site to access control and traffic management protocols to regulate vehicle entry, parking arrangements, and internal circulation.
- Designated pick up and drop off points are present within the premises.
- Signage, speed-control measures, and pedestrian safety infrastructure are installed within and around the hotel.
- Trained security personnel are deployed to manage access gates, coordinate traffic movement, and ensure safe interactions between vehicles and pedestrians.

Impact Magnitude

Since the community health and safety risks will be present throughout the project lifecycle, the duration has been assessed to be Permanent. The community health and safety risks will be related to environment pollution, traffic, safety etc. Therefore, the spread

of the impact will be local. The intensity has been assessed to be moderate as settlement is present adjacent to the project boundary. Therefore, the impact magnitude has been categorized as Substantial.

Proposed Mitigation Measures

- UCC is recommended to ensure that the Traffic Management Plan (TMP) is implemented during construction phase, covering internal circulation, parking allocation, and routing of service vehicles.
- UCC to ensure installation of speed bumps, pedestrian walkways, zebra crossings, and road markings around the site.
- UCC to conduct periodic monitoring of traffic flows, community complaints, and safety incidents, followed by corrective actions as needed.
- UCC to formulate site specific community health and safety management plan and implement at site incorporating emergency response protocols: evacuation plans, first-aid, firefighting systems, and drills involving both staff and local emergency services.
- UCC to deploy a Community Liaison Officer (CLO) and a Grievance Redress Mechanism (GRM) accessible to neighbours.
- UCC to spray water regularly on exposed soil and dusty areas. Further ensure that trucks are covered while transporting loose materials and install dust screens or barriers around the site perimeter. Further, UCC to maintain proper storage for cement and aggregates in enclosed spaces.
- UCC is recommended to use noise barriers or acoustic panels near residential areas. The EPC Contractor to schedule high-noise activities during daytime hours only. Further, periodic maintenance of construction equipment is to be done to reduce noise emissions.
- UCC to monitor vibration levels using appropriate instruments. It would adopt low impact piling or drilling techniques where possible. UCC to inform nearby residents before starting high-vibration activities and inspect adjacent structures regularly for signs of damage.
- UCC is recommended to ensure that chemicals and fuels are stored in secure, labeled containers and train workers on safe handling and emergency procedures.
- It is recommended to provide spill kits and secondary containment for hazardous substance and dispose of hazardous waste through authorized channels.
- UCC to secure excavation areas with fencing and barriers and install warning signs at hazardous zones.
- It is recommended to formulate site-specific community grievance redressal mechanism and also make the local community aware of same.
- UCC to formulate labor accommodation management plan and train the workers about do's and don'ts at the labour camp for ensuring cultural integrity and social and security of women and children and implement the same at site.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Short	High	Intermittent	Substantial
With Mitigation Measures	Negative	Local	Short	Low	Intermittent	Small

7.7.2.7 Safety and Security

The Hotel is being developed in the Green Zone/International zone of Baghdad. The zone is highly sensitive and secured due to presence of government structures and office, embassies and headquarters. Based on review of Google Earth imagery, it is inferred that there are embassies, government structures including Soldier's Monument, Prime Minister's Guest House, government employees' residences, and resident of bureaucrats and high security within 2-3 km from the project site. Thus, if migrant labours are deployed without proper background verification, the risk of security threats cannot be ruled out. The security risks are particularly pronounced, including the potential for terrorist attacks, bombings, or mortar strikes, as the Green Zone has historically been a target for insurgent activity. Workers may also face threats from civil unrest, protests, targeted kidnappings, or theft and vandalism of construction materials and equipment.

The labour camps are situated in residential area of Karrada area in Baghdad. The labour camps houses around 2000 migrant workers from various nations, ethnicity and background. Hence there are risks associated to theft, assault, petty crimes, clashes with local residents, clashes between workers within labour camps, communal tensions, safety and security issues to women and children.

Control Measures for the Project

The EPC Contractor has formulated site specific security plan which is implemented at site. Further, there are security guards, security in-charges and security manager deployed at site to ensure safety and security at site. Further safety protocols are implemented including use of personal protective equipment, implementation of emergency evacuation plans, secure perimeters, physical surveillance, coordination with authorities, etc. The security management plan has been formulated for the construction site and there is no explicit mention of security and safety at the labour camps or surrounding areas. The safety management plan incorporates actions plans for protection of the Public, but it majorly focusses on safety related to traffic movement, community health and safety in alignment with IFC PS 4, and not including action points related implementation of safety and security of the local community in vicinity to project site as well near labour camps.

Proposed Mitigation Measures

- EPC Contractor to ensure that there is restricted access, frequent security checkpoints, complex permitting processes, and limited emergency response capabilities potentially delaying construction and increasing vulnerability.
- EPC Contractor to ensure site-specific security plan is implemented at site and also update the security management plan to incorporate security aspect of local community in vicinity to project and labour camps.
- Coordinate with local authorities and security agencies to ensure rapid response in case of incidents such as attacks or civil unrest and obtain special badges from Ministry of Interiors.
- UCC to implement emergency evacuation plans, including safe shelters and clearly defined escape routes.
- UCC to conduct regular drills for fire, evacuation, and security incidents.
- UCC to maintain on-site first aid and medical facilities or ensure rapid access to nearby medical care.
- UCC to keep an updated incident response and reporting system to track near-misses and accidents, facilitating continuous improvement.
- It is recommended to implement use of security devices such as cameras installed throughout site with remote monitoring, and use of drones while undertaking critical work on site. All entry and exit points shall be covered through manned gates to prevent entry of unauthorized personnel.
- Provide training to the security guards as per security plan of UCC.

	Nature of Impact	Spread Impact	ofDuration	Intensity	Frequency	Receptors' Vulnerability	Significance of Impact
Without Mitigation Measures	Negative	Local	Short term	High	Routine	Unexpected to Possible	Substantial
With Mitigation Measures	Negative	Local	Short term	Moderate	Routine	Unexpected	Small

7.7.2.8 Gender-based Violence and Harassment (GBVH)

During site visit it was inferred that 2500 to 3000 workforce including employees and contractual workers will be deployed at site. Presently there are around 2170 contractual workers deployed at site and all migrant workers are male workers. Around 1725 male migrant workers from various nations are provided accommodation across 3 labour camps which are situated within residential areas. This may have a potential high-risk of GBVH affected local community members and other workers. Risk factors that increase the potential for GBVH include:

- Large-scale influx of mainly transient male workers into host communities with low capacity to absorb the sudden increase of workers
- Workers with different backgrounds and way of living come together to work at a particular site. Further, around 15 female employees are deployed at site, this might will increase the risk the GBVH among female employees.

- Remote locations where people have limited access to resources to report GBVH and receive support
- Poorly designed or maintained physical spaces on project sites and in workers' accommodation.
- Informal workers, whose informality means they may either be more vulnerable to GBVH due to lack of contracts or that potential perpetrators may go unidentified due to lack of background checks.

Significance

The overall significance of the GBVH is substantial, considering the huge number of workers coming in close vicinity to the local community. Further, as reported, the workers' accommodation will also minimize the interaction of workers with the local community.

Proposed Measures for the Project

Project will incorporate following procedure to address the potential risks of GBVH in construction phase:

- UCC to appoint senior focal points in both Project and contractors with responsibility for ensuring that commitments and policies to prevent GBVH
- UCC to put in place monitoring systems at the highest levels for regular reporting on GBVH
- UCC to include requirements around GBVH in code of conduct, policies, and protocols for contractors, including training on policies and procedures once developed
- UCC to ensure code of conduct are publicly disclosed in local languages and are widely accessible to all workers and all groups of people in project areas – visual campaigns (on billboards or other communication platforms available) are strongly suggested due to their effectiveness
- Establish safe, confidential, and accessible grievance mechanisms for local communities
- UCC to include options to report anonymously if preferred
- Ensure all security guards' background checks including references from most recent employers.
- Use robust recruitment processes to select, train, manage and monitor security companies and personnel
- Deliver periodic mandatory training on GBVH to all workers including contractors, subcontractors and core suppliers
- Contractor to conduct effective awareness campaigns that might include perspective taking and role-playing exercises as part of the training
- Include assessment of gender and safety risks in bidding process for contractors
- UCC to vet sub-contractors for prior efforts to address GBVH through prevention and response and to ensure contracts include clauses on GBVH
- Provide lighting around project sites, including around latrines and access routes.
- Install separate, lockable latrines for female workforce within project site.

	Classification Impact	ofNature Impact	ofRange Impact	ofPeriod & Scale	Vulnerability Receptors	ofMagnitude Impact	ofSignificance of Impact
Without Mitigation Measures	Negative	Adverse	Local	Short Term	Medium	Small	Substantial
With Mitigation Measures	Negative	Adverse	Local	Short Term	Low	Negligible	Negligible

7.7.3 Impact during Operation Phase

7.7.3.1 Labour Rights and Welfare

For the Project, the workforce will be an asset, and a sound worker-managed relationship is a key ingredient to the substantiality of the Project. Failure to establish and foster a sound worker-manager relationship can undermine the workers'/employee's commitment and retention, which can jeopardize the Project's schedule. Conversely, through a constructive worker-manager relationship and by treating workers fairly and providing them with safe and healthy working conditions, the project may see tangible benefits, such as the enhancement of efficiency and productivity.

As reported the project operational activities for the hotel would require specialised trained and certified employees for operation of the hotel's tourism and hospitality industry. Around 500-700 staffs would be deployed during operation phase and hence, Client

and the Hotel Operator have to ensure to guarantee labourers/ employees with the Right against exploitation as per Law no 35 of 2015.

Further, there can be specialised professionals been deployed from other countries/governorates during operation phase.

Impact Magnitude

The overall impact significance of the labour rights and welfare impact is Major. The significant of the impact is based on (but not limited to):

- Working conditions and management of worker relationship: Human Resource policy, working relationship, working conditions and terms of employment, workers' organization, non-discrimination, retrenchment, and grievance mechanism
- Protecting the workforce: Migrant workers, child labour, and forced and bonded labour
- Occupational health and safety: Providing workers with a safe and healthy work environment.

Control Measures for the Project

The project will establish and develop project specific human resource policies or SOPs in compliance with applicable reference framework of this report, regular monitoring and audit of the workers' working conditions & terms of employment and provide safe working place.

Proposed Mitigation Measures: The following additional mitigation measures are suggested to ensure compliance with labor laws/provisions, applicable reference framework and as well as industry best practices:

- Project to implement HR policies and SOP at site level. The HR Manual to include the following:
  - Organizational chart and clear description of responsibilities between HR/Admin functions at the project level and corporate level
  - Code of conduct
  - Tools, a set of forms and register, labor contracts, supporting the implementation of HR policy and procedures
  - Workers' GRM to cover permanent staff and non-employees (agency workers and contractors)
  - HR and labor training plan and materials
  - Monitoring, auditing reporting arrangement
  - Policy on retrenchment and layoff of staff with a commitment to develop retrenchment plan if required at least 3 months prior to retrenchment
  - Recruitment schedule for key staff
  - Continuous review and update HR MS
- Establish workers engagement plan and grievance redressal mechanism – to showcase the engagement mode and model of the project with workers and to allows the workers to report any concern or grievance related to work activity
- The labor accommodation and guest houses facility for contractual workers and as well as for regular employees should meet the requirement of the applicable reference framework, and EBRD and IFC's guidelines on workers' accommodation – in terms of space per workers, water, and sanitation facilities, first aid, lighting and ventilation, etc. Further, the project will undertake regular (basis of fixed timeline) monitoring to ensure compliance through the Project lifecycle
- The Project should also ensure a monthly and regular auditing mechanism for monitoring the sub-contractors and suppliers with respect to compliance with the applicable national regulations and applicable reference framework for this report. The compliance will be in terms of (but not limited to) resources, workers' working conditions, migrant workers, child labor and forced labor, GBVH (Gender-based violence and harassment), health and safety, etc.
- The Project will also establish provisions related to non-employment and abolition of any form of child labour and forced and bonder labor in the contractual agreement with contractors. Further, the Project publicly will showcase its commitment toward non-employment of child labor and forced and bonded labor.
- The Project will ensure the labor rights and welfare in compliance with the ILO's eleven (11) fundamental instruments:
  - Forced Labour Convention, 1940 (No 29)
  - Right to Organise and Collective Bargaining Convention, 1949 (No. 98)
  - Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)
  - Equal Remuneration Convention, 1951 (No. 100)
  - Abolition of Forced Labour Convention, 1957 (No. 105)
  - Discrimination (Employment and Occupation) Convention, 1958 (No. 111)

- Minimum Age Convention, 1973 (No. 138) (Minimum age specified: 15 years
- Worst Forms of Child Labour Convention, 1999 (No. 182)
- Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Receptors' Vulnerability	Magnitude of Impact
Without Mitigation Measures	Negative	High Spread	Local	Low	Routine	High	Substantial
With Mitigation Measures	Negative	Local	Local	Low	Routine	Low	Small

7.7.3.2 Occupational Health and Safety

Operating a five-star hotel in Baghdad can involve a range of occupational health and safety risks due to both the nature of hospitality work and the local context. Staff may face ergonomic hazards from repetitive tasks such as housekeeping, lifting heavy luggage, or standing for long periods at reception or in food service areas. Kitchens present additional risks, including burns, cuts, slips, and exposure to high temperatures. Security-related risks are more pronounced in Baghdad, where employees may be exposed to heightened threats such as civil unrest, explosions, or armed conflict, requiring robust emergency preparedness and security protocols. Facilities maintenance workers may encounter electrical, mechanical, and chemical hazards when servicing hotel infrastructure, while all employees may face indoor air-quality issues from inadequate ventilation or generator exhaust if power systems are not properly maintained. Additionally, stress and fatigue can be significant in a luxury hotel environment, where high service expectations, long shifts, and dealing with demanding guests can impact mental well-being. Addressing these risks requires comprehensive training, strong safety management systems, and vigilant security and emergency planning.

Control Measures for the Project

The Client shall implement a comprehensive site-specific Occupational Health and Safety (OHS) framework to ensure the safety and well-being of all personnel during operation phase.

Impact Magnitude

Since occupational health and safety risks will be confined to project sites, the spread has been categorized as local. Furthermore, since the operation phase will last for longer period, the duration of occupational health and safety risks during operation has been classified as long and the intensity has been classified as moderate. Therefore, the impact magnitude has been classified as Substantial.

The staff at the hotel may be exposed to possible fire hazards, physical hazards, and chemical hazards, if adequate training, awareness, and management measures are not communicated to the workers. Therefore, the probability of incidence occurrence has been categorized as unexpected to possible.

Proposed Mitigation Measures

- To address ergonomic risks, the hotel should implement staff training on safe lifting techniques, provide mechanical aids for handling luggage, and rotate tasks to reduce repetitive strain.
- Housekeeping and front-of-house teams should be equipped with ergonomically designed tools and supportive footwear.
- In kitchen and food service areas, strict adherence to food safety and kitchen safety protocols should be enforced, including proper PPE, slip-resistant flooring, machine guarding, fire-suppression systems, and routine equipment maintenance.
- A site-specific training calendar should be developed and implemented onsite
- Hospital tie-ups with nearby hospitals should be done
- Adequate fire safety systems including fire extinguishers, sand buckets should be provided on site
- Safe drinking water supply should be provided for the workers
- An up to date first aid box should be provided at site and a trained person should be appointed to manage it

- The site-specific occupational health and safety plan and emergency management plan should be implemented at the project location. The nearest hospital, ambulance, fire station and police station should be identified in the implemented emergency management plan.
- Personal Protective Equipment (PPEs) including safety shoes, high visibility vest, protective gloves and face masks (to be used in kitchen & food handling, housekeeping, maintenance) should be provided to the workers. A PPE inventory should be maintained onsite
- Structural integrity should be checked before undertaking any work
- Electrical and maintenance work should not be carried out during poor weather
- Annual health checkups of workers should be undertaken
- Considering the heightened security context in Baghdad, the hotel should establish comprehensive security management plans, including controlled access points, trained security personnel, emergency drills, and coordination with local authorities.
- Bomb-blast resistant design features, CCTV systems, and well-rehearsed evacuation procedures further reduce security risks.
- Fire hazards can arise from the electrical systems, overheating components, or flammable materials within the turbine. A fire in the nacelle or electrical room can pose serious risks to workers.
- For maintenance staff, risk assessments should be conducted for all electrical, mechanical, and chemical tasks, supported by lock-out/tag-out procedures, PPE, and hazard communication systems.
- To enhance indoor air quality, the hotel should ensure proper ventilation, regular HVAC servicing, safe storage and use of chemicals, and well-maintained generators with adequate exhaust systems.
- Mental health risks can be mitigated by ensuring reasonable shift schedules, providing rest breaks, offering employee assistance programs, and promoting a supportive work environment.
- Overall, establishing an Occupational Health and Safety Management System aligned with international standards (e.g., ISO 45001) ensures continuous monitoring, incident reporting, and improvement of safety performance.
- There would be arrangements for hygienic sanitation facilities for all the laborers working at site.
- An accident reporting, and monitoring record would be maintained.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Probability of Incidence Occurrence	Significance of Impact
Without Mitigation Measures	Negative	Local	Permanent	Moderate to low	Routine	Unexpected to Possible	**Substantial**
With Mitigation Measures	Negative	Local	Permanent	Moderate to low	Routine	Unexpected to Possible	**Small to Negligible**

7.7.3.3 Community Health and Safety

Based on Google Earth imagery review, the Project is surrounded by commercial and residential land use. Anticipated impacts to community H&S include increase in road traffic and safety risk, light pollution, air emission and noise pollution due to operation of D.G. sets. Further during operation phase workforce will be deployed for operation of the hotel and reportedly there will be influx of migrant workforce and the O&M contractor to provide guest house facilities/worker's camps to the workforce (including employees and contractual workers if deployed) thus there be impacts to communities neighboring the worker camps, Gender Based Violence and Harassment, disease outbreak risks (i.e. migrant workers), impacts to surrounding road infrastructure and educational facilities from HGVs, strain on local health services and also related Community Health and Safety impacts during operation (towards customers of the hotel as this is a public building) including life and fore safety.

Control Measures for the Project

Control measures planned for the Project include:

- The project will implement access control and traffic management protocols to regulate vehicle entry, parking arrangements, and internal circulation.
- Designated pick up and drop off points within the premises.
- Signage, speed-control measures, and pedestrian safety infrastructure will be installed within and around the hotel.

- Trained security personnel will be deployed to manage access gates, coordinate traffic movement, and ensure safe interactions between vehicles and pedestrians.

Impact Magnitude

Since the community health and safety risks will be present throughout the project lifecycle, the duration has been assessed to be Permanent. The community health and safety risks will be limited to the access road due to traffic, safety and security risks to community surrounding worker's camps, stress on local resources due to influx of workers during operation phases etc. Therefore, the spread of the impact will be local. The intensity has been assessed to be moderate as settlement is present adjacent to the project boundary. Therefore, the impact magnitude has been categorized as Small.

Proposed Mitigation Measures

- O&M Contractor to develop and enforce a detailed Traffic Management Plan (TMP) for the operational phase, covering internal circulation, parking allocation, and routing of service vehicles.
- O&M Contractor to ensure installation of speed bumps, pedestrian walkways, zebra crossings, and road markings around the site.
- O&M Contractor to conduct periodic monitoring of traffic flows, community complaints, and safety incidents, followed by corrective actions as needed.
- O&M Contractor to establishment of a Community Liaison Officer (CLO) and a Grievance Redress Mechanism (GRM) accessible to neighbours.
- O&M Contractor to establish emergency response protocols: evacuation plans, first-aid, firefighting systems, and drills involving both staff and local emergency services.
- O&M Contractor to install acoustic enclosures, vibration isolators, and silencers on generators and HVAC systems.
- O&M Contractor to apply acoustic glazing and insulation to guest rooms facing busy streets.
- Implement nighttime lighting controls—down-shields, low-glare LEDs—to minimize light spill.
- Utilize low-sulphur diesel and adequate stack height to be provided to D.G. sets.
- Record and track security incidents, complaints, near-misses, with transparent follow-up mechanisms for community concerns.
- O&M Contractor to formulate labor accommodation management plan for the operation phase and implement the same at site.

	Nature of Impact	Spread of Impact	Duration	Intensity	Frequency	Significance of Impact
Without Mitigation Measures	Negative	Local	Short	Moderate	Intermittent	Small
With Mitigation Measures	Negative	Local	Short	Low	Intermittent	Negligible

7.7.3.4 Employment Opportunity

The hotel could foster positive effects like local employment, tourism, and economic activity, but may also increase property values—putting pressure on affordable housing and local community dynamics. It is anticipated that operation of hotel would require deployment of, housekeeping team, front office staffs, food and beverage staffs, administrative staffs, marketing and sales staffs, IT management staffs etc. Reportedly, during site visit it was inferred that during operation phase, the Operation and Maintenance Contractor may collaborate with local Hospitality institutions in Baghdad and across Iraq for recruiting staffs thereby providing local job opportunities and reducing migration.

7.8 Climate Change Vulnerability Assessment

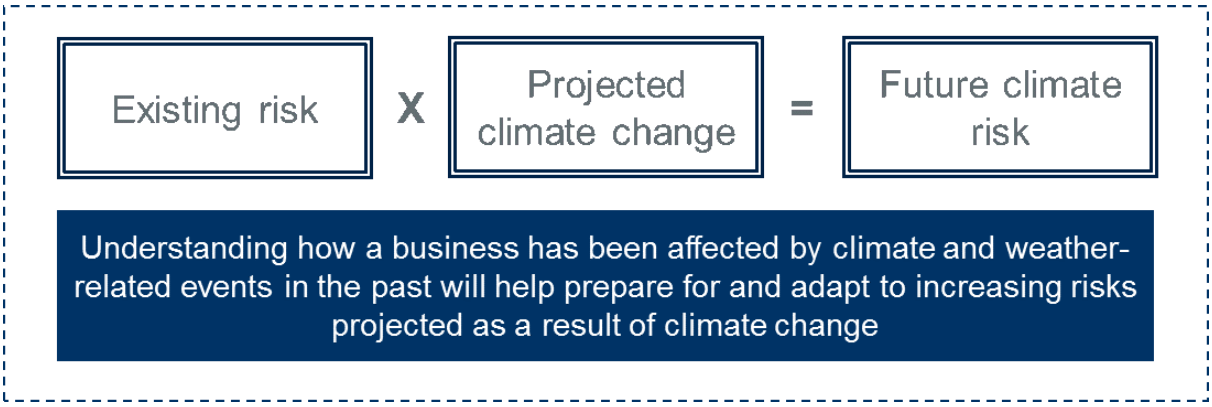
Climate change vulnerability assessment is based on historical data from global, regional, and national databases followed by qualitative evaluation of impacts of climate change on natural hazards. It should be noted that this is a very high-level review of publicly available information, and no detailed site-specific analysis or modelling has been undertaken. Hence, further investigation may be required to quantify the risks in more detail for consideration of adaptation.

Deloitte is dedicated to understanding the climate and assessing the potential threats posed by climate change across the study area and committed to supporting the development of Climate Change Vulnerability Assessments (CCVA) to ensure that assets remain resilient to climate change, variability, and natural hazards. This report utilizes projections from the Coupled Model Intercomparison Project Phase 6 (CMIP6), as featured in the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6). CMIP6 has broadened the range of models and scenarios, introducing new versions linked to Shared Socio-Economic Pathways (SSPs).

- SSP1-2.6 - it represents a sustainable pathway where the world shifts towards a more sustainable and equitable path, with strong investments in health, education, and green technologies. Under this scenario, the radiative forcing is approximately 2.6 W/m² by 2100 and it emphasize on green growth, reduction in inequality, and extensive efforts to mitigate climate change through reduced emissions, increase energy efficiency, and the widespread adoption of renewable energy (RE) sources. This pathway aims to limit global warming to well below 2°C, with efforts to keep it below 1.5°C above pre-industrial levels.
- SSP2-4.5 – it represents a middle-of-the-road development where trends broadly follow historical patterns. It reflects a future where social, economic, and technological trends do not shift markedly from historical patterns. Under this scenario, radiative forcing is approximately 4.5 W/m² by 2100 and with moderate mitigation and adaptation efforts, with a balance between economic growth and environmental protection. The GHG emissions peak around mid-century and then decline, resulting in a global temperature increase of around 2.1°C to 3.5°C by 2100.
- SSP5-8.5 - it envisions a future dominated by rapid economic growth and technological advancements driven by high fossil fuel dependency. Under this scenario, the radiative forcing is approximately 8.5 W/m² by 2100 and with high energy demand, extensive use of fossil fuels, and minimal efforts to curb emissions lead to a high concentration of GHGs in the atmosphere. This results in significant global warming, with temperature increases potentially exceeding 4°C by the end of the century. This pathway represents a worst-case scenario for climate change impacts.

The process of assessment of climate risks involves the evaluation of likely impacts from climate change projections on the existing baseline risks to inform on potential future risks, shown in ***Figure*** 7-1.

Figure 7-1: Process to evaluate threats due to natural hazards under climate change scenario

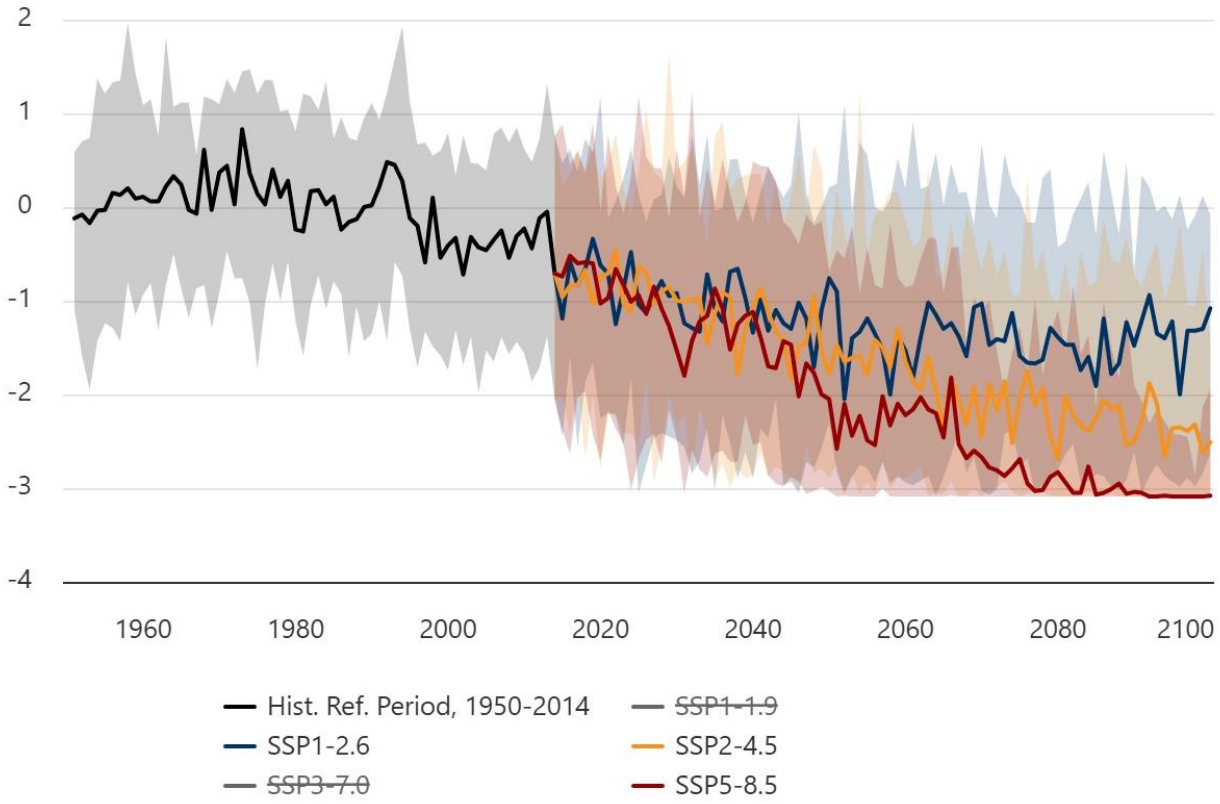


7.8.1 Drought Water Availability

World Bank Climate Change Knowledge Portal has been used to estimate annual Standardized Precipitation Evapotranspiration Index (SPEI). The SPEI is a widely used index to measure drought conditions, taking into account both precipitation and potential evapotranspiration. It is designed to quantify the severity of droughts by considering both the amount of precipitation and the atmospheric demand for water (evapotranspiration). Negative value of SPEI indicates increase drought and decrease water availability, positive value indicates decrease drought and increase water availability and no changes in SPEI Index means no changes about water availability. ***Figure*** 7-2 shows the Projected Annual SPEI Drought Index anomaly (relative to the 1950-2014 reference period) for each of the chosen scenarios (CMIP6 SSP1 2.6, SSP2 4.5 and SSP5 8.5) and the range of results for the model ensemble.

The annual SPEI Drought Index average values indicate negative trends in the future for all three scenarios (CMIP6 SSP1-2.6, SSP2-4.5, and SSP5-8.5). There is a distinct asymmetry in the ensemble values, showing a tendency for more extreme negative values, which indicate an increased drought risk. The range on the negative side is nearly one-and-a-half times that on the positive side, suggesting a tendency toward increased drought conditions in the future.

Figure 7-2: Projected timeseries anomaly of annual SPEI drought index for Baghdad, Iraq (Ref. time period: 1950-2014) for 2015-2100

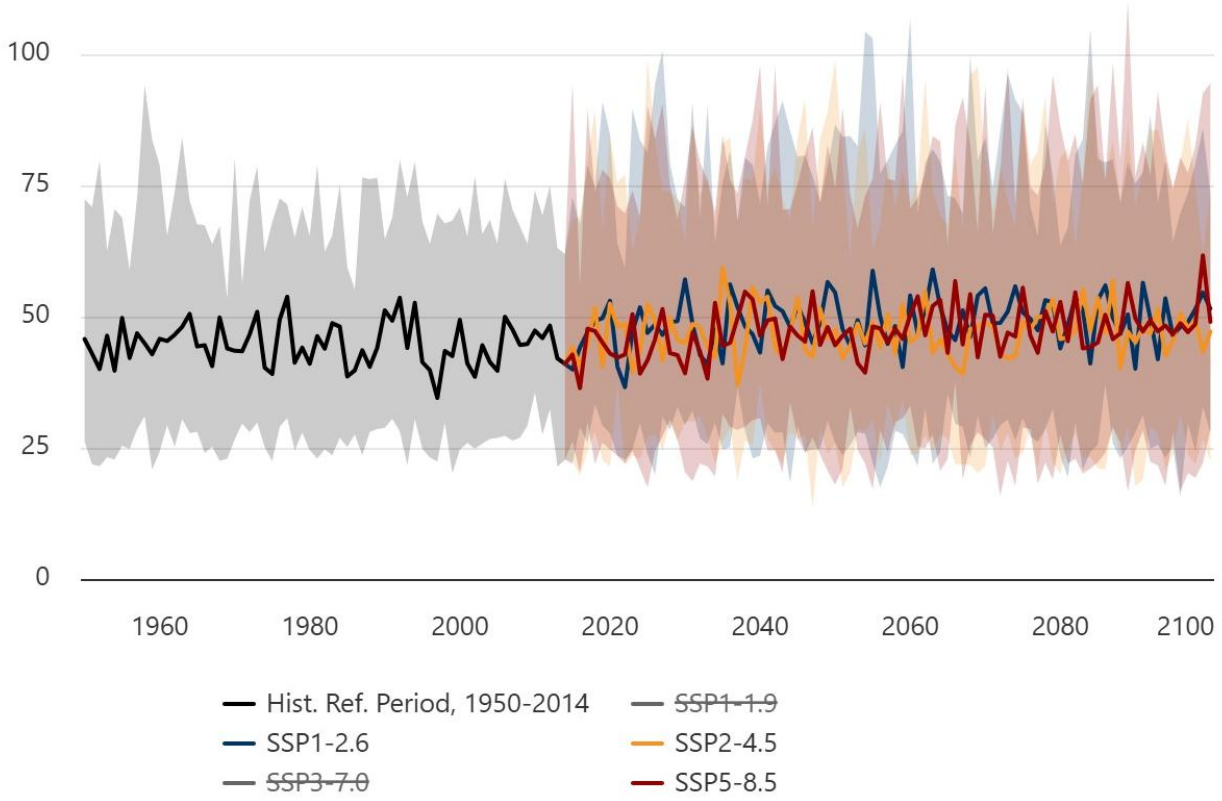


Source: World Bank Climate Change Knowledge Portal

7.8.2 Precipitation

World Bank Climate Change Knowledge Portal has been used to project future precipitation in the study area. The future time period considered is 2040-2059. ***Figure*** 7-3 below shows the monthly mean projected precipitation percentage change anomaly (reference period – 1950-2014) for each of the chosen scenarios (CMIP6 SSP1 2.6, SSP2 4.5 and SSP5 8.5) and the range of results using the multi-model ensemble. Average precipitation anomaly is the indicator for precipitation decrease, where any change lesser than 0 signals precipitation decrease from historical trend. Decrease precipitation trend leads to reduced runoff and streamflow, lower groundwater recharge, increased drought frequency and severity.

Figure 7-3: Projected timeseries Anomaly of Average Largest Monthly Cumulative Precipitation Baghdad, Iraq; (Ref. Period: 1950-2014) for 2020-2100



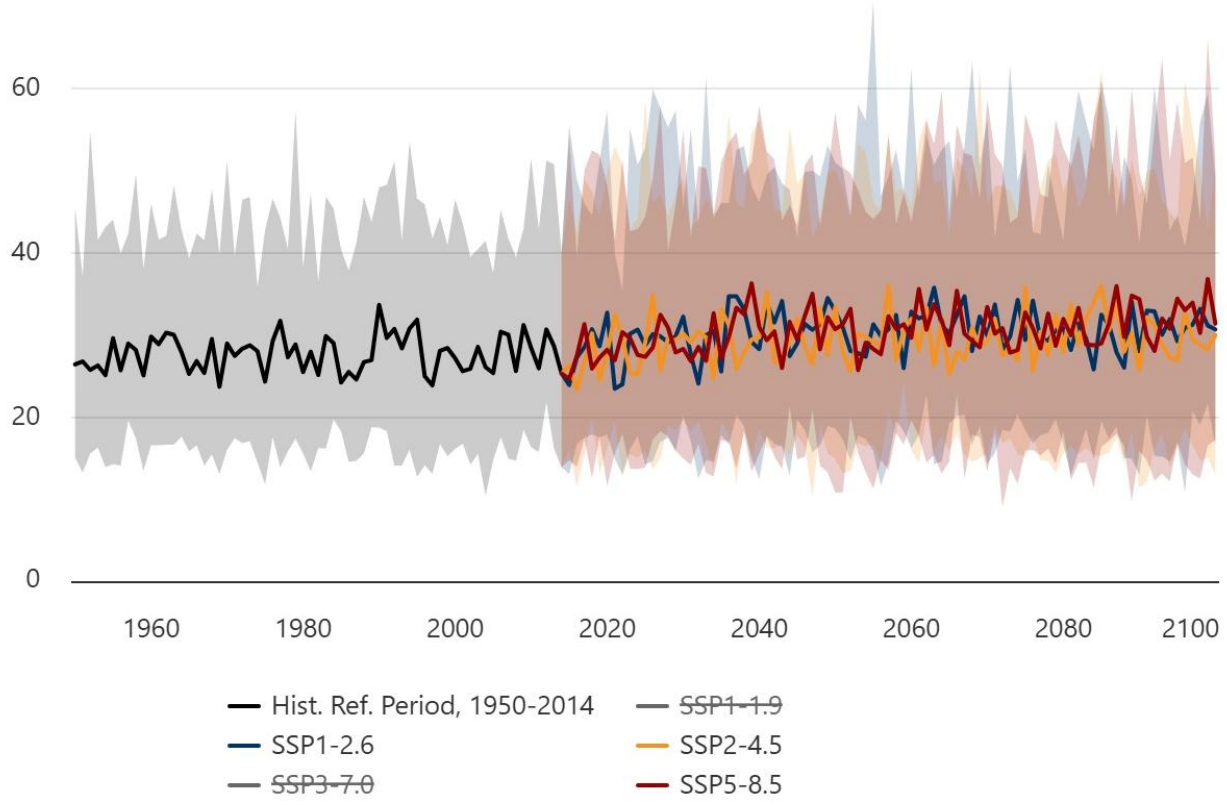
Source: World Bank Climate Change Knowledge Portal

7.8.3 Flood and Wind Speed

The indicator for flood risk is average largest 5-day cumulative rainfall during the monsoon season and the threshold constitutes less than 35 mm of rainfall in the monsoon season. There is no direct indicator for wind speed, indirect indicator is average largest 5-day cumulative rainfall which indicates a likelihood of higher winds. Same condition will apply for onshore storms, indirect indicator -– average largest 5-day cumulative rainfall indicates a likelihood of onshore storms, and it indicates intensity of storm frequency and conditions.

World Bank Climate Change Knowledge Portal, using estimate average largest 5-day cumulative rainfall has been used to project future flood risks (time period 2015-2100) in the study area. ***Figure*** 7-4 below shows the monthly mean 5-day cumulative rainfall anomaly (relative to the 1950-2014 reference period) for each of the chosen scenarios (CMIP6 SSP1 2.6, SSP2 4.5 and SSP5 8.5) and the range of results using multi-model ensemble. It clearly shows that in future projections, A slightly increase or equal in the average largest 5-day cumulative rainfall indicates a high likelihood of reduced runoff and streamflow, diminished groundwater recharge, and increased drought frequency and severity, with low confidence.

Figure 7-4: Projected timeseries Anomaly of Average Largest 5-Day Cumulative Precipitation, Baghdad, Iraq (Ref. Period: 1950-2014)



Source: World Bank Climate Change Knowledge Portal

7.8.4 Sea Level Rise

The potential impacts of sea level rise driven by climate change are not applicable to Baghdad, Iraq, as the region is not located within coastal areas vulnerable to inundation from rising ocean levels.

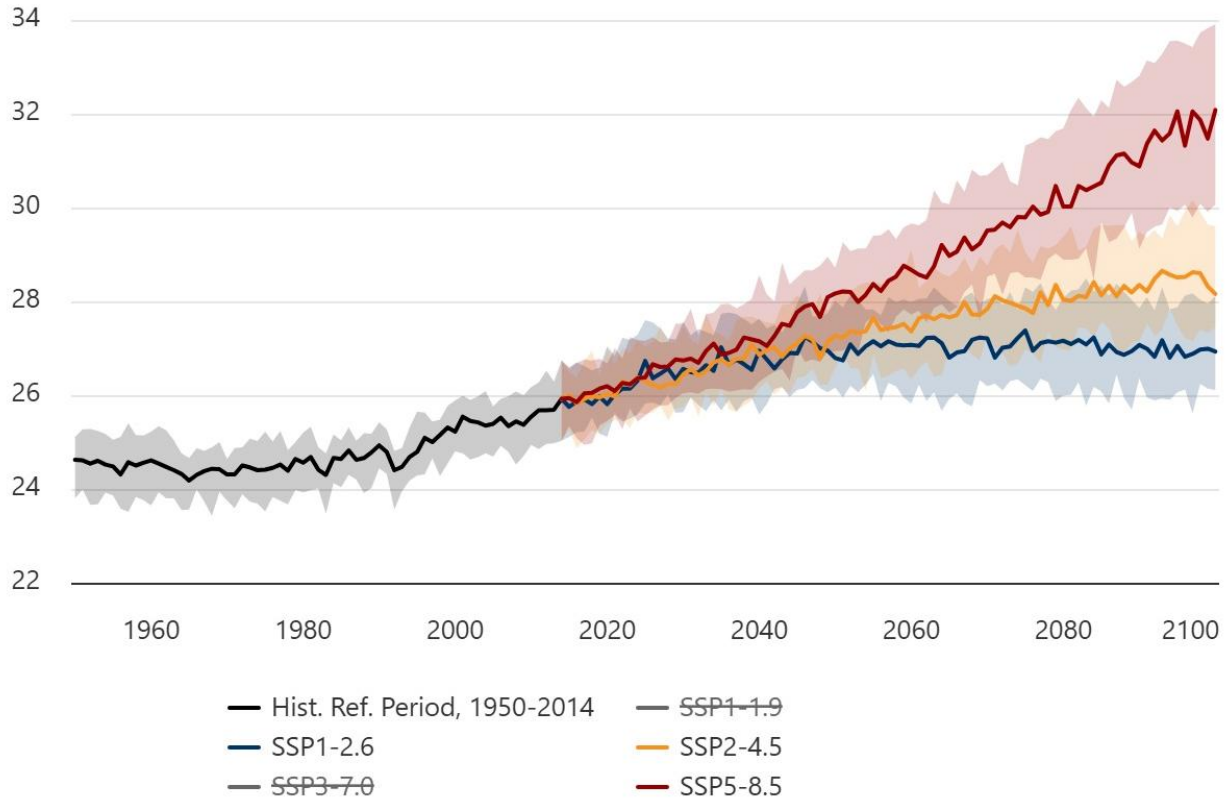
7.8.5 Extreme High Temperature

World Bank Climate Change Knowledge Portal has been used to projected average maximum surface air temperature (reference period -– 1950-2014) presented in ***Figure*** 7-5 in the study area. Projected average maximum surface temperature anomaly for future time period up to 2100 (reference period -– 1995-2014) for Baghdad, Iraq with CMIP6 SSP1 2.6, SSP2 4.5 and SSP5 8.5 pathways is presented in ***Figure*** 7-6.

The projection indicates an increase in monthly mean temperatures for both climate scenarios by 2050. Under SSP5-8.5, temperatures rise by 1.54°C, while SSP2-4.5 shows an increase of 1.13°C over the same period. This means the SSP5-8.5 pathway results in a 0.41°C greater warming than SSP2-4.5 over 25 years. Both scenarios produce positive temperature anomalies, with a pronounced warming trend from May to October and a relative decline from November to February. Overall, the SSP5-8.5 scenario exhibits a more substantial temperature increase compared with SSP2-4.5.

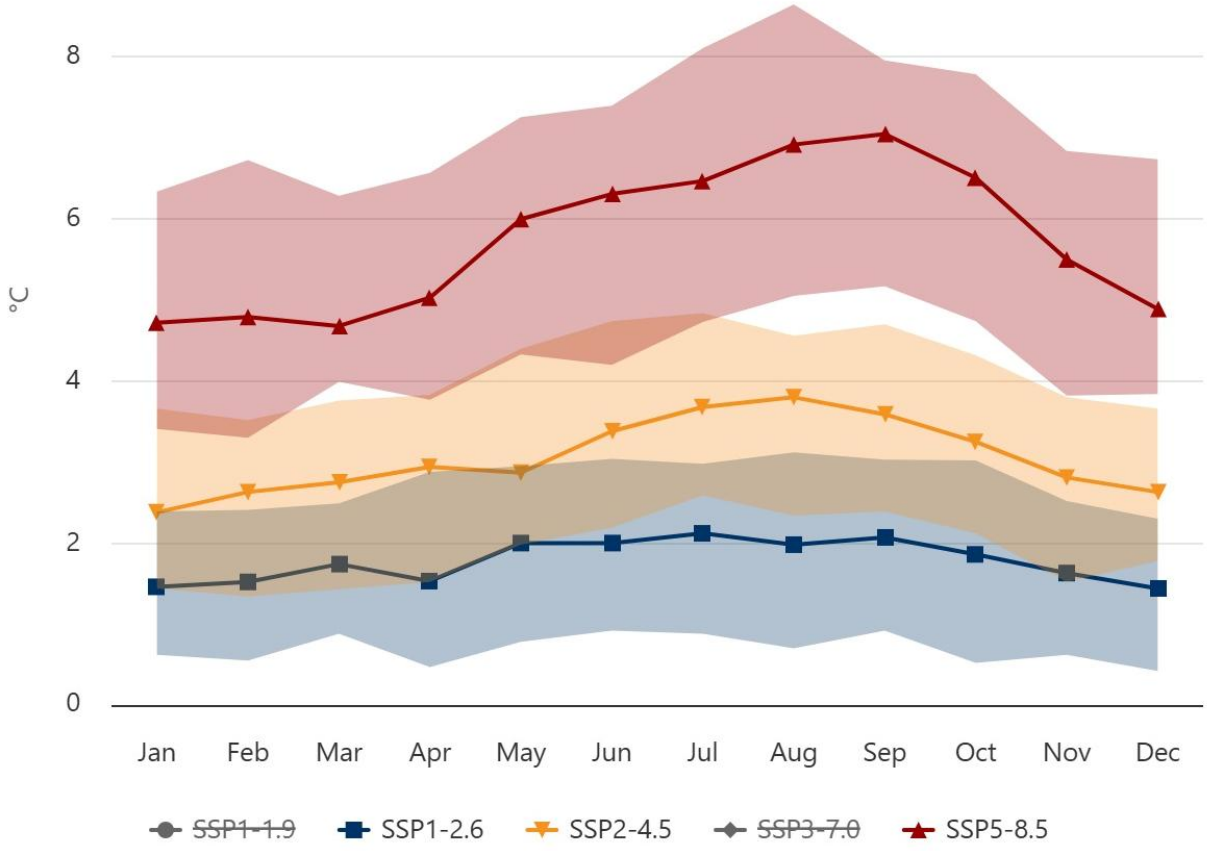
With respect to seasonal patterns, both scenarios show a stronger warming trend during the summer months. There is a high likelihood—and high confidence—that maximum temperatures will rise across all months.

Figure 7-5: Projected timeseries Anomaly of Average Maximum Surface Air Temperature Baghdad, Iraq (Ref. Period: 1995-2014)



Source: World Bank Climate Change Knowledge Portal

Figure 7-6: Projected Anomaly of Average Maximum Surface Temperature Anomaly for 2015-2100 Baghdad, Iraq (Ref Period: 1950-2014)

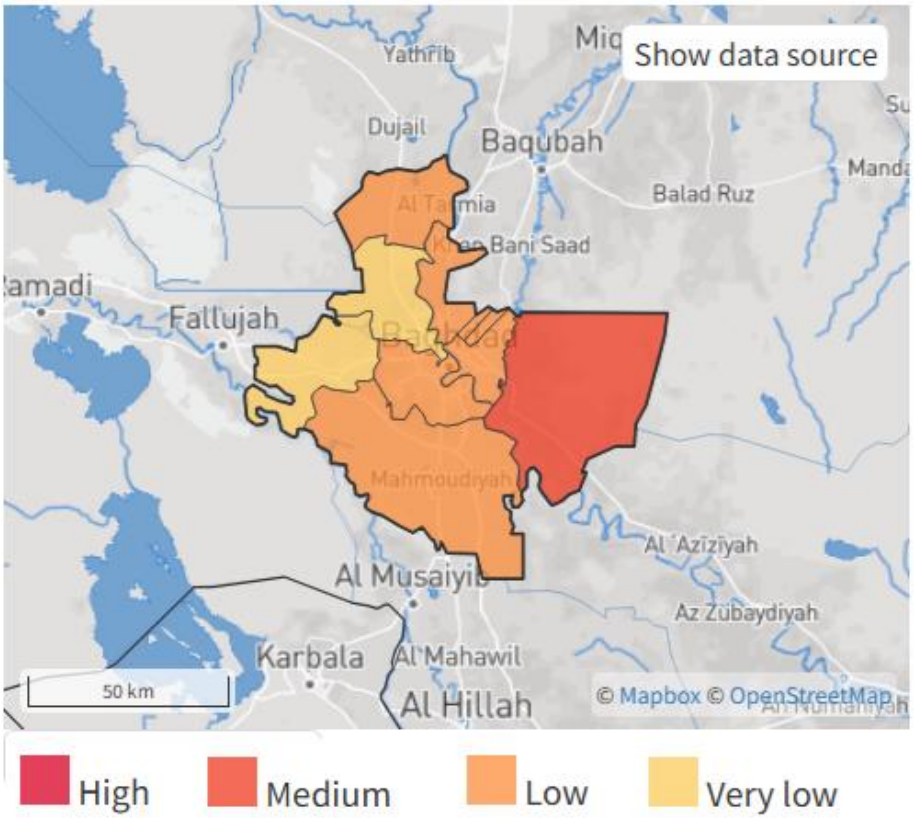


Source: World Bank Climate Change Knowledge Portal

7.8.6 Earthquake

Earthquake hazard is classified as medium for study area as per ***ThinkHazard*** tool. This means that there is a 10% chance of potentially damaging earthquake shaking in the study area in the next 50 years. Based on this information, the impact of earthquakes should be considered in all phases of the project, in particular during design and construction. Project planning decisions, project design, and construction methods should take into account the level of earthquake hazard. Further detailed information should be obtained to adequately account for the level of hazard.

Figure 7-7: Earthquake Baghdad, Iraq



Source: ThinkHazard

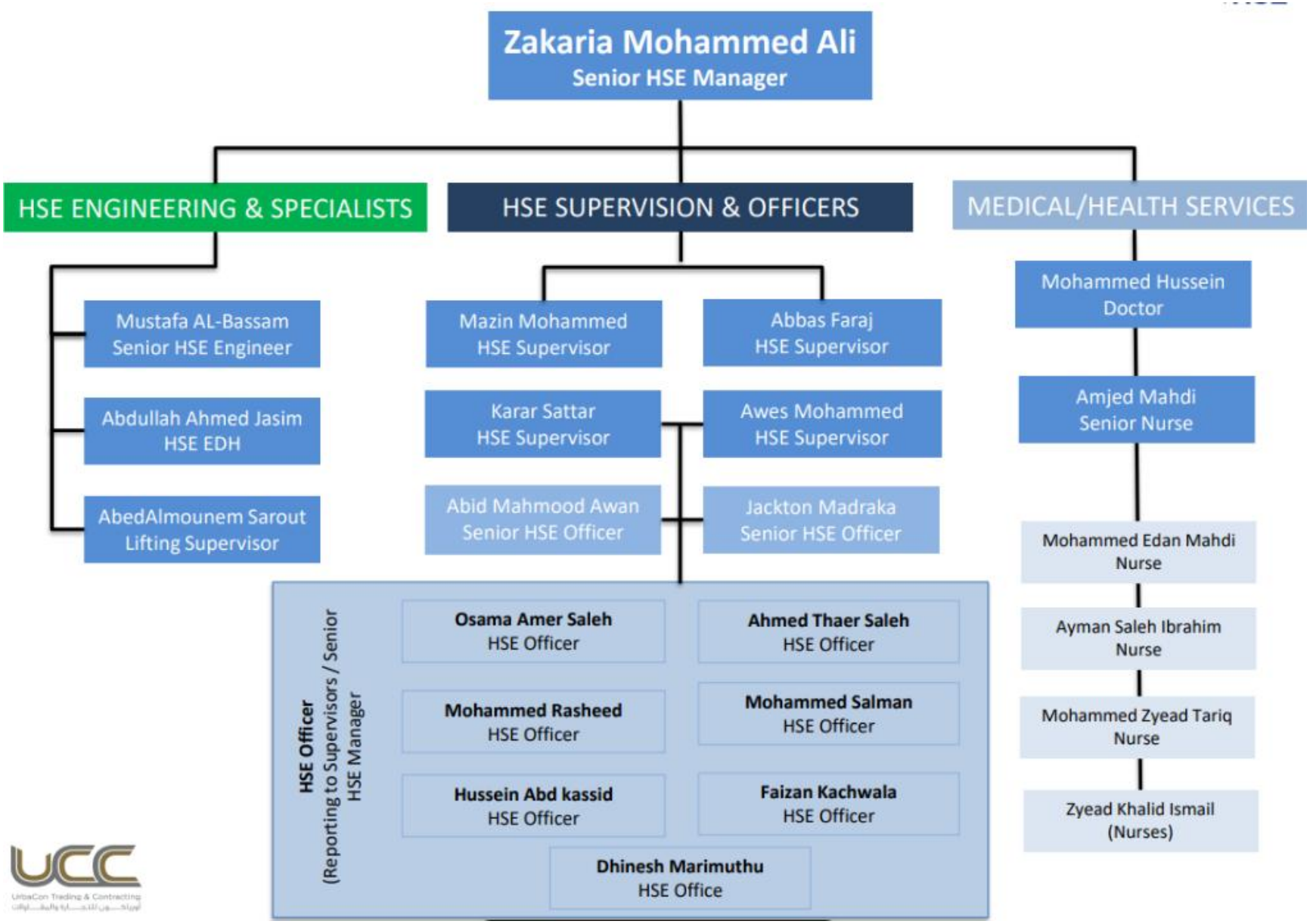
8 Environment & Social Management and Monitoring Plan

This section presents the Environmental and Social Management Plan (ESMP) for the Project. The purpose of this ESMP is to specify the standards and controls required to manage and monitor environmental and social impacts during construction and operation phase. To achieve this, the ESMP identifies potential adverse impacts from the planned activities and outlines mitigation measures required to reduce the likely negative effects on the physical, natural and social environment. This is in accordance with the applicable reference standards which emphasize the importance of managing social and environmental performance throughout the lifecycle of the Project.

8.1 Organizational Structure

To ensure the efficacy of environmental and social management plan, certain institutional mechanism with well-defined roles and responsibilities is essential for effective implementation of identified mitigation measures both during construction and operation phases. During construction phase, HSE at site is managed with Senior HSE Manager of UCC with support of HSE supervisors, HSE officers, HSE engineers, etc. HSE organogram for the Project for construction phase is as presented in ***Figure*** 8-1. During operation phase also, HSE at the hotel will be managed by dedicated HSE team. Organigram for operation phase is not available at this stage.

Figure 8-1: Organizational Structure



Source: Estithmar

8.1.1 Roles and Responsibilities

An outline of responsibilities of the proposed Senior HSE Manager and its team is given below

- Preparation of required documents on environmental and social management.
- Ensuring availability of resources and appropriate institutional arrangements for implementation of ESMP.
- Implementation of the health and safety measures.
- Collection of the statistics of health of workers.
- Providing support during routine medical check-ups of workers.
- Awareness and implementing safety programmes.
- Providing job specific induction training.
- Compliance of regulatory requirements.
- Carrying out environmental internal and external audits.
- Identify unsafe acts and conditions and suggest remedies.
- Develop safety culture and comply with company's EHS policy and standard requirements.
- Encourage and enforce the use of PPE's.
- Educate all employees for the use of PPE's and safe practices.
- Direct, coordinate and orient the safety activities.
- Promulgate the spread of policy, objectives, rules and/or regulations.
- Perform a thorough investigation of all accidents and review the recommendations to avoid any repetition.
- Monitoring the progress of implementation of ESMP and
- Reviewing and updating the ESMP as and when required for its effective implementation

8.2 Review and Reporting

The project will develop and implement a programme of regular reporting through the stages of the project lifecycle. The personnel delegated HSE roles shall be required to fully comply with the monitoring programme in terms of timely submissions of reports as per acceptable level of detail. Reporting will be done in form of environmental checklist, incident record register, training records, and environmental and social performance reports (weekly, monthly, quarterly, half-yearly, yearly etc.) for example environmental check list, incident record register, training records etc in line with the HSE policy and procedures.

8.3 Environment and Social Management Plan

This section outlines the potential impacts, mitigation measures, monitoring and management responsibilities during construction and operation phases of the Project. The purpose of ESMP is to:

- Provide an institutional mechanism with well-defined roles and responsibilities for ensuring that measures identified in ESIA designated to mitigate potential impacts are implemented
- List all suggested mitigation measures and control techniques; safeguards identified through the ESIA process
- Provide project monitoring program to effective implementation of the mitigation measures and ascertain efficacy of the environmental & social management and risk control system in place
- Assist in ensuring compliance with all relevant legislation at local, and national level for the Project.

Table 8-1: Environment and Social Management Plan

Sr. No.	Environmental/Social Resources	Impact/Issues	Applicable Project Phase	Mitigation Measures	Responsibility for ensuring implementation of the suggested mitigation	Means of verification that mitigation has been met	Timeline/Frequency of Monitoring	Responsibility for implementation of monitoring	Supervision responsibility	Reporting Requirements
Construction Phase										
Physical Environment										
1.	Land Use	Change of Land Use	Construction Phase	• Construction activity should be restricted to project footprint area. • The project shall not alter the existing land use in the areas surrounding the project facility.	EHS person of EPC contractors	EHS Inspection	Monthly	EHS person of Project management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team
2.	Topography and Drainage	Change of Topography and Drainage Pattern	Construction Phase	• Carry out levelling and grading activities with as little disturbance to the existing contour as possible, in order to retain the general slope of the site. • To the extent possible, disruption/alteration of micro-watershed drainage patterns should be avoided. • Efforts should be made to avoid any disruption or alteration to the existing micro-watershed drainage patterns. • During transportation of excess earth material to the designated dumping ground, to ensure that earth material is covered with tarpaulin sheet.	EHS person of EPC contractors	EHS Inspection	Monthly	EHS person of Project management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team
3.	Ambient Air Quality	Increase of particulate matter in Ambient air.		• The project proponent and its EPC contractor shall comply with air quality monitoring requirements defined by Iraqi Regulation No. 4 of 2012 (Protection of Ambient Air from Pollution): • Article 6 obliges the concerned authorities to provide the Ministry with the result of examining the exhaust concerning the moveable sources every (6) six months. • Article 10 provides that emissions from mobile sources must be compatible with the emission criteria related to such moveable sources. Those sources should be subjected to the exhaust examination once at least per year. • Article 12 provides that if emissions from fixed sources exceed the specified emissions limits, the owner of the polluting emissions source should take all possible precautionary measures for mitigating the quantity of pollutants resulting from the combusted materials through improved technology or appropriate control of the conditions of combustion. • Install temporary dust barriers around the construction site to contain dust and prevent its spread to nearby settlement areas. • Cover construction materials and excavated soil heaps with tarpaulin sheets and store them away from residential zones. • During windy conditions, cover all stockpiled materials prone to generating airborne dust with canvas or plastic sheets. • Regularly sprinkle water inside the project site to suppress dust emission. • Ensure emissions from diesel generators (DG sets) and other stationary equipment are minimized by keeping engines properly tuned and well-maintained. • Limit the speed of construction vehicles to 10–15 km/h to reduce fugitive dust emissions from vehicular movement. • Strictly prohibit the open burning of waste at the construction site. • Conduct regular inspections and maintenance of vehicles and machinery to ensure optimal performance. • Vehicles and machinery will be serviced regularly and fitted with appropriate emission control equipment, where practicable. • Switch off machinery and equipment when not in use to reduce unnecessary emissions. • Use prefabricated materials wherever possible to limit localized air pollution during construction. • The sand and aggregate for the batching plant should be stored under covered area to reduce the emission of dust generation. • Conduct ambient air quality monitoring in accordance with the relevant regulatory obligations.	EHS person of EPC contractors	EHS Inspection	Monthly	EHS person of Project management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team

Sr. No.	Environmental/Social Resources	Impact/Issues	Applicable Project Phase	Mitigation Measures	Responsibility for ensuring implementation of the suggested mitigation	Means of verification that mitigation has been met	Timeline/Frequency of Monitoring	Responsibility for implementation of monitoring	Supervision responsibility	Reporting Requirements
4.	Ambient Noise	Increase in Ambient Noise level		• Operate only well-maintained equipment on-site. • Provide acoustic enclosures for all the noise emitting machineries to reduce noise levels at the nearby settlements. • If it is noticed that any particular equipment is generating too much noise then lubricating moving parts, tightening loose parts and replacing worn out components should be carried out to bring down the noise and placing such machinery far away from the households as possible. • Limit the number of heavy vehicles required for the Project to only those that are necessary. • Machinery and construction equipment that may be in intermittent use should be shut down or throttled down during non-work periods. • Consider the location of the project site, it is recommended to provide noise barrier of 6 – 10 meters height around the zone & construction activities to reduce the propagation of noise. • Practice Minimal use of vehicle horns and heavy engine breaking in the area • Noise limits for construction equipment to be installed at the project area during peak construction such as front loaders concrete mixers, cranes (moveable), will not exceed 75 dB (A), measured at one meter from the edge of the equipment in free field. • Construction activities would be restricted during daytime (preferably 6 AM to 6 PM) only.	EHS person of EPC contractors	EHS Inspection	Monthly	EHS person of Project management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team
5.	Soil Erosion and Compaction	Increase in Soil erosion, deterioration of soil quality	Construction Phase	• As a best practice, site clearance, piling, excavation and access road strengthening will not be carried out during the rainy season to minimize erosion and run-off. • Soil should be ploughed in compacted areas after completion of construction work. • The stockpiles of the soil will be kept moist/covered to avoid wind erosion of the soil.	EHS person of EPC contractors	EHS Inspection	Monthly	EHS person of Project management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team
6.	Soil contamination	Contamination of Soil	Construction Phase	• Ensure that no unauthorized dumping of used oil and other hazardous waste/ material is undertaken at the site. • Designated areas should be provided for Solid Municipal Waste and ensure daily collection, and disposal through municipal authority. • Construction Waste should be stored separately and be periodically collected by an authorized facility. • Store all waste in a shed that is protected from the wind, rain, storms, etc. . • Maintain a logbook for quantity and type of hazardous waste generated. • Use of spill control kits to contain and clean minor spills and leaks. • Unloading and loading protocols should be prepared for diesel, oil and used oil respectively and workers trained to prevent/contain spills and leaks, and • In case of accidental/unintended spillage, the contaminated soil should be immediately collected and stored as hazardous waste.	EHS person of EPC contractors	EHS Inspection	Monthly	EHS person of Project management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team
7.	Water Availability	Shortage of Water	Construction Phase	• Construction laborers deputed onsite to be sensitized about water conservation and encouraged optimal use of water. • Permission from concerned authority should be obtained by the Project, before initiation of construction period. • Recycling/reusing to the extent possible • Install water meter to monitor the daily water consumption during construction. • Regular inspection for identification of water leakages and preventing wastage of water is necessary for efficient utilization of water.	EHS person of EPC contractors	EHS Inspection	Monthly	EHS person of Project management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team
8.	Water Quality	Deterioration of Water Quality	Construction phase	• Collect all surface runoff from the construction site through storm water drainage system and garland drain network and channelize the flow through adequately sized sedimentation tank before discharging to nearby municipal stormwater drainage network; • Chemicals and oil storage would be provided with secondary containment structures in the form of dykes/bunds so that any accidental leakage or spillage can be contained and cleaned up immediately; • Material stored at site, both construction material and Construction waste, will be provided with garland and will be covered with tarpaulin to control material runoff during rainfall;	EHS person of EPC contractors	EHS Inspection	Monthly	EHS person of Project management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team

Sr. No.	Environmental/Social Resources	Impact/Issues	Applicable Project Phase	Mitigation Measures	Responsibility for ensuring implementation of the suggested mitigation	Means of verification that mitigation has been met	Timeline/Frequency of Monitoring	Responsibility for implementation of monitoring	Supervision responsibility	Reporting Requirements
				• Ensure the regular testing of RO water to maintain the quality of the water. • Ensure periodical replacement of RO filter for effective use. • The RO discharge water should not be directly discharged to any natural water sources. • Regular cleaning of drains would be done to restrict the blockage in the drain, ensuring free flow of water; • It should be ensured that the manholes and the stormwater drainage does not get clogged or dislodged; • An impervious storage area shall be provided on site for the safe storage of any hazardous waste, if generated. • Bio toilets would be provided at site, and the generated sewage would be vacuum collected and treated in a skid mounted modular STP, provided at respective construction zones						
Construction Phase										
9.	Impact due to Migrant Workers	• Pressure on resources like food supply, water, and sanitation facility etc. • Labor influx may have added health and safety risks for the community like spread of contagious diseases and communicable diseases such as STDs and HIVs/AIDS. • Human rights related to violation of the right to non-discrimination in the local area in the process of employment. • Cases of violence against women where safety gets affected by external community in their proximity may be recorded, however currently there has not been such instances. • Conflict with local cultures, values and religious/societal sentiments	Construction Phase	• Regular Monitoring and auditing mechanism should be in place for monitoring the sub-contractors and suppliers with respect to compliance to IFC PS 2 requirements, in terms of resource, migrant workers, child labour and forced labour, health and safety, payment of wages, etc. • The Project shall provide training or induction program related to the gender sensitization and gender-based violence to all employees at the time of commencement of their job. • Provide training to all workers (contracted or migrant) during their commencement of job on Gender policies and procedure of filling of complaint. Further, refresher training shall be given in every quarter to each worker. • Implement a hiring policy prioritizing local and provincial residents to reduce need for migrant labour and enhance local economic benefits. • Enforce a mandatory Code of Conduct for all workers addressing behaviour, interactions with local communities, respect for cultural norms, prevention of Gender-Based Violence/Sexual Exploitation and Abuse/Sexual Harassment, and sanctions for violations. • Conduct regular health check-ups, communicable disease screening, and awareness programs on HIV/AIDS, STDs, and general hygiene to minimize public health risks. • Establish rules governing worker movements, use of local services, and interaction with the community to avoid social tensions and cultural conflicts. • Implement separate, confidential GRMs for workers and community members to report labour-related issues, Gender-Based Violence/Sexual Exploitation and Abuse/Sexual Harassment concerns, discrimination, or conflicts. • Train security personnel in the Voluntary Principles on Security and Human Rights (VPSHR), with clear protocols to prevent intimidation, harassment, or excessive use of force. • Maintain ongoing engagement with municipal authorities and community representatives in Baghdad to monitor any emerging pressures on local infrastructure or services. • Conduct awareness sessions for workers on local customs, religious practices, and societal expectations within Baghdad to reduce cultural friction. • Project proponent is recommended to ensure that basic facilities such as bio-toilets, clean drinking water are provided to the workers deployed by EPC Contractors during construction and operation phase. • The turnkey/EPC Contractors as appointed are recommended to formulate Contractor Management Plan, and Labor Influx Management Plan and implement the same at site. The project proponent to ensure that the above-mentioned plans are being implemented and are as per corporate plans of UCC, Qatar and Estithmar corporate plans also manage and supervise that the working condition of the contractual workforce as referred to in the EPC Agreement are adhering to the Contractor Management Plan and Labor Influx Management Plan of Estithmar. • UCC is recommended to ensure that site specific Labor Camp HSE plan is implemented at site. • The contractors would also need to groom the migrant workers about Dos and Don'ts during they stay at project site.	Camp bosses, Camp managers, Welfare officers and HR Team at site	Collation of HR related documents and records	During construction phase on monthly basis	Welfare Team and HR Team	Onsite Project Management Team	Report from Onsite Welfare and HR Team to Corporate Welfare and HR Team

Sr. No.	Environmental/Social Resources	Impact/Issues	Applicable Project Phase	Mitigation Measures	Responsibility for ensuring implementation of the suggested mitigation	Means of verification that mitigation has been met	Timeline/Frequency of Monitoring	Responsibility for implementation of monitoring	Supervision responsibility	Reporting Requirements
				• The project proponent would also ensure that the waste generated by the migrant workers while residing in vicinity to project site are disposed properly thereby not causing nuisance to the surrounding communities. • The project proponent would formulate GRM for the contractual workers including the migrant workers and also make them aware of the process to followed to lodge any complaints or grievances. Further, the complaints lodged would be timely redressed and recorded for future reference. • UCC is recommended to obtain Social Security registration from MoLSA and ensure that the welfare facilities are provided to them as per Law no 18 of 2023. • UCC is recommended to provide health/medical insurance to the workers						
10.	Stress On Local Community	Community resources, water resources and roads are the prime receptors for the impact caused by project activities. The project-related construction activities are understood to span 19-20 months and would require water for drinking and sanitary purposes. As reported by the project site team and local community, construction water requirements are met through Municipality supply. This water consumption during construction phase may have put stress on water resources used during construction phase.	Construction phase	• A worker code of conduct shall be established to prevent construction workers and contractors from using local community resources such as water, fuel etc. and emphasis shall be given to use the resources provided by the Contractors. The code shall be communicated to all contractors and workers. • Alternate sources of water, such as water tankers, shall be identified to reduce dependency on a single government supplied water schemes. • Periodic maintenance of roads used for transportation of construction materials shall be undertaken to minimize wear and disruption caused by construction activities. • A Grievance Redressal Mechanism shall be provided for all key stakeholders to report and resolve concerns related to the misuse of locally available resources. • Adequate sanitation, waste disposal, and drinking water facilities shall be provided for construction workers to prevent pressure on the resources. • Construction timelines and material transport schedules shall be coordinated to minimize stress on local infrastructure and community resources. • UCC to ensure that the medical aid centres are equipped with lighting & potable water, vehicular access for ambulance, fully stocked first-aid kit, blood pressure monitor, stethoscope, digital thermometer, oxygen cylinder with regulator & masks, AED (recommended on large sites), splints and immobilization supports, eye-wash station (or bottles), burn treatment kit, CPR mask / resuscitation bag etc. as per ILO standards.	EHS Team at site and Camp Manager of UCC	Collating water bills and other utility bills	During construction phase on monthly basis	EHS Team and Camp Manager of UCC	Onsite Project Management Team of UCC	Report from Onsite EHS team to Corporate EHS Team
11.	Impact on Economy and Employment	Employment generation	Construction Phase	• A transparent hiring plan shall be implemented to maximize local employment (around 50 %) and inform the community about available job opportunities. • Equal access shall be provided to both female and male residents for available employment opportunities. • Skill development and technical or vocational training shall be arranged for local residents, including women, to enhance employability beyond the project. • Local procurement of materials and services shall be encouraged wherever feasible. • Timely payment of wages/salaries to local workers shall be ensured to maintain economic stability. • A mechanism shall be established to audit sub-contractors and suppliers to ensure compliance with the use of local labour laws and resources. • The Client would formulate a grievance mechanism for all stakeholders including contractor and contractual workers so that they can raise and register their grievance with respect to jobs and employment opportunities.	HR Team of UCC at site	Adherence to HR Policy and collation of labor related permits, attendance registers, wage slips/pay slips etc.	During construction phase on monthly basis	HR Team and HR Head	Onsite Project Management Team of UCC	Report from Onsite HR team to Corporate HR Team
12.	Labor Rights and Welfare		Construction Phase	• The labour accommodation facility for contractual workers and as well as for regular employees should meet the requirements of the IFC PS 2 framework, EBRD norms, ILO norms and GIIP in terms of space per worker, water, and sanitation facilities, first aid, lighting and ventilation, health and safety, grievance redressal, welfare etc. and regular monitoring should be undertaken to ensure compliance through the project lifecycle • Project should also ensure a monthly and regular auditing mechanism for monitoring the contractors and suppliers with respect to compliance to the applicable reference framework, in terms of resources, migrant workers, child labour and forced labour, health and safety, payment of wages, social security and welfare schemes etc as per Law no 37 of 2015 and law no 18 of 2023.	HR Team of UCC at site	Obtain Social security permits and adherence of Law no 37 of 2015.	During construction phase on monthly basis	HR Team and HR Head	Onsite Project Management Team of UCC	Report from Onsite HR team to Corporate HR Team

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				• Project shall also establish provisions related to non-employment and abolition of any form of child labour and forced labour in the contractual agreement with suppliers and as well as contractors • Establish a grievance redressal mechanism in place and impart GRM training on regular basis to the workers and workers employed by supplier to make them aware on the process on reporting any concern or grievance related to work activities. • UCC is recommended to ensure that the welfare activities are duly implemented as per scheduled calendar. • UCC is recommended to provide medical facilities and conduct medical check-up for the workers on timely basis and maintain records of same for future reference. • UCC is recommended to ensure that the working hour for the workers are adhering to Law No 37 of 2015 and implementation provision of overtime wage payment in case the work is exceeding 8 hours/day or 48 hours/week. • UCC is recommended to ensure that weekly offs are provided to the workers with provisions of leaves. • Project proponent is recommended to conduct formal labour audit during construction phase to systematically assess UCC's compliance with applicable labour laws, contractual obligations, and international labour standards, with particular focus on wages, working hours, overtime, social security, occupational health and safety, grievance mechanisms, and worker welfare. The audit would also identify gaps related to legal compliance, ethical employment practices, and risk exposure, while ensuring fair treatment of workers, protection of labour rights, and alignment with regulatory requirements and IFC Performance Standard 2. • Further, to ensure the labour rights and welfare, the project shall implement ILO's fundamental instruments ratified by Iraq[39]: • Forced Labour Convention, 1940 (No 29) • Right to Organise and Collective Bargaining Convention, 1949 (No. 98) • Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87) • Equal Remuneration Convention, 1951 (No. 100) • Abolition of Forced Labour Convention, 1957 (No. 105) • Discrimination (Employment and Occupation) Convention, 1958 (No. 111) • Minimum Age Convention, 1973 (No. 138) (Minimum age specified: 15 years • Worst Forms of Child Labour Convention, 1999 (No. 182) • Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)					
13.	Occupational Health and safety	Damage to Health of the Worker	Construction Phase	• All workers, including regular and contracted personnel, shall be provided with training on health and safety policies and procedures, with appropriate refresher courses conducted throughout the lifecycle of the Project. • A site-specific training calendar shall be developed and implemented onsite. • A permitting system shall be implemented for work in confined spaces and to ensure that cranes and lifting equipment are operated only by trained and authorized personnel. • Appropriate safety harnesses and lowering/raising tools shall be used for work at heights. • Safe drinking water supply, meeting IQS 417/2009 standards[40] and WHO standards, shall be provided for all workers. • Workers shall be provided with adequate breaks, including at least a 30-minute interval after five hours of work. • Adequate lavatory facilities, including toilets and washing areas, shall be provided for the expected workforce at the Project site. • First aid boxes shall be maintained at all construction sites, with a qualified person appointed to manage them, and expired medicines shall be replaced as required by law.	EHS Manager and Supervisors	EHS Inspection	During construction phase on monthly basis	EHS Team of UCC	Onsite Project Management Team of UCC	Report from Onsite EHS team to Corporate EHS Team

[39] https://normlex.ilo.org/dyn/nrmlx_en/f?p=NORMLEXPUB:11200:0::NO::P11200_COUNTRY_ID:102974
[40] https://tj-es.com/ojs/index.php/tjes/article/view/1606

Sr. No.	Environmental/Social Resources	Impact/Issues	Applicable Project Phase	Mitigation Measures	Responsibility for ensuring implementation of the suggested mitigation	Means of verification that mitigation has been met	Timeline/Frequency of Monitoring	Responsibility for implementation of monitoring	Supervision responsibility	Reporting Requirements
				• All equipment shall be turned off and checked when not in use. • All construction activities (to the extent possible) should be carried out during daytime hours and vigilance should be maintained for any potential accident. • Working hours shall be adjusted to limit exposure to extreme heat during summer months. • Personal Protective Equipment, including safety shoes, helmets, goggles, earmuffs, and face masks, harness belts hall be provided to all workers, and a PPE inventory shall be maintained onsite. • Structural integrity of all work areas and equipment shall be checked before commencing any work. • Electrical and maintenance work shall not be carried out during poor weather conditions. • Excavated areas shall be temporarily fenced to prevent access by outsiders and wildlife. • Rest areas shall be provided for workers to take meal and tea breaks. • Regular medical check-ups shall be conducted for all project personnel and workers. • Periodic occupational health and safety audits shall be carried out by Client's corporate team or an external party to ensure compliance with all safety standards. • Structural integrity should be checked before undertaking any work • Work permits and job safety analysis to be conducted prior deployment of workers.					
14.	Community Health and Safety		Construction Phase	• UCC is recommended to ensure that the Traffic Management Plan (TMP) is implemented during construction phase, covering internal circulation, parking allocation, and routing of service vehicles. • UCC to formulate site specific community health and safety management plan and implement at site. • UCC to ensure installation of speed bumps, pedestrian walkways, zebra crossings, and road markings around the site. • UCC to formulate site specific community health and safety management plan and implement at site incorporating emergency response protocols: evacuation plans, first-aid, firefighting systems, and drills involving both staff and local emergency services. • UCC to deploy a Community Liaison Officer (CLO) and a Grievance Redress Mechanism (GRM) accessible to neighbours. • Establish emergency response protocols: evacuation plans, first-aid, firefighting systems, and drills involving both staff and local emergency services. • UCC to spray water regularly on exposed soil and dusty areas. Further ensure that trucks are covered transporting loose materials and install dust screens or barriers around the site perimeter. Further, UCC to maintain proper storage for cement and aggregates in enclosed spaces. • UCC is recommended to use noise barriers or acoustic panels near residential areas. The EPC Contractor to schedule high-noise activities during daytime hours only. Further period maintenance of construction equipment to be done to reduce noise emissions. • UCC to monitor vibration levels using appropriate instruments. It would adopt low impact piling or drilling techniques where possible. UCC to inform nearby residents before starting high-vibration activities and inspect adjacent structures regularly for signs of damage. • UCC is recommended to ensure that chemicals and fuels are stored in secure, labeled containers and train workers on safe handling and emergency procedures. • It is recommended to provide spill kits and secondary containment for hazardous substance and dispose of hazardous waste through authorized channels. • UCC to secure excavation areas with fencing and barriers and install warning signs at hazardous zones. • Keep first-aid kits and trained personnel on-site at all times. • It is recommended to formulate community grievance redressal mechanism and also make the local community aware of same.	EHS Manager, Community Liaison Officer and Supervisors	Formulation of management plans and implementation at site.	During construction phase on monthly basis	EHS Team of UCC	Onsite Project Management Team of UCC	Report from Onsite EHS team to Corporate EHS Team

Sr. No.	Environmental/Social Resources	Impact/Issues	Applicable Project Phase	Mitigation Measures	Responsibility for ensuring implementation of the suggested mitigation	Means of verification that mitigation has been met	Timeline/Frequency of Monitoring	Responsibility for implementation of monitoring	Supervision responsibility	Reporting Requirements
				• UCC to formulate labor accommodation management plan and train the workers about do's and don'ts at the labour camp for ensuring cultural integrity and social and security of women and children and implement the same at site						
15.	Safety And Security		Construction Phase	• EPC Contractor to ensure that there is restricted access, frequent security checkpoints, complex permitting processes, and limited emergency response capabilities potentially delaying construction and increasing vulnerability. • EPC Contractor to ensure site-specific security plan is implemented at site and also update the security management plan to incorporate security aspect of local community in vicinity to project and labour camps. • Coordinate with local authorities and security agencies to ensure rapid response in case of incidents such as attacks or civil unrest and obtain special badges from Ministry of Interiors. • UCC to implement emergency evacuation plans, including safe shelters and clearly defined escape routes. • UCC to conduct regular drills for fire, evacuation, and security incidents. • UCC to maintain on-site first aid and medical facilities or ensure rapid access to nearby medical care. • UCC to keep an updated incident response and reporting system to track near-misses and accidents, facilitating continuous improvement. • It is recommended to implement use of security devices such as cameras installed throughout site with remote monitoring, use of drones while undertaking critical work on site. all entry and exit points shall be covered through manned gates to prevent entry of unauthorized personnel. • Provide training to the security guards as per security plan of UCC.	Security guards, Security in-charges	Security surveillance, maintaining visitors/works/employees'/ vehicular entry at site	Daily basis	Security Manager of UCC at site	Project management team at site	Report from Onsite Security team to Corporate Security Team
16.	Gender based Violence and Harassment	Safety and security threats to women	Construction phase	• UCC to appoint senior focal points in both Project and contractors with responsibility for ensuring that commitments and policies to prevent GBVH • UCC to put in place monitoring systems at the highest levels for regular reporting on GBVH • UCC to include requirements around GBVH in code of conduct, policies, and protocols for contractors, including training on policies and procedures once developed • UCC to ensure code of conduct are publicly disclosed in local languages and are widely accessible to all workers and all groups of people in project areas – visual campaigns (on billboards or other communication platforms available) are strongly suggested due to their effectiveness • Establish safe, confidential, and accessible grievance mechanisms for local communities • UCC to include options to report anonymously if preferred • Ensure all security guards' background checks including references from most recent employers. • Use robust recruitment processes to select, train, manage and monitor security companies and personnel • Deliver periodic mandatory training on GBVH to all workers including contractors, subcontractors and core suppliers • Contractor to conduct effective awareness campaigns that might include perspective taking and role-playing exercises as part of the training • Include assessment of gender and safety risks in bidding process for contractors • UCC to vet sub-contractors for prior efforts to address GBVH through prevention and response and to ensure contracts include clauses on GBVH • Provide lighting around project sites, including around latrines and access routes. • Install separate, lockable latrines for female workforce within project site.	Welfare officer, Community Liaison officer and HR Team	Internal Audits/documents verification	Monthly during construction phase	Welfare officer and HR Manager of UCC at site	Project management team at site	Report from Onsite Welfare and HR team to Corporate Welfare and HR Team
Biological Environment										
17.	Habitat Modification	Modification of Habitat	Construction Phase	• No tree falling activities will be carried out outside the project footprint area. • Before cutting off any tree, ensure that no nest of avian species is present on tree.	EHS person of EPC contractors	EHS Inspection	Monthly	EHS person of Project management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team

Sr. No.	Environmental/Social Resources	Impact/Issues	Applicable Project Phase	Mitigation Measures	Responsibility for ensuring implementation of the suggested mitigation	Means of verification that mitigation has been met	Timeline/Frequency of Monitoring	Responsibility for implementation of monitoring	Supervision responsibility	Reporting Requirements
				• Carry out plantation of native plants within the project boundary, on the available land. • Prohibit use of herbicides. • Prohibit unnecessary disturbance of neighboring vegetation due to vehicular movement and destruction of floral resources.						
18.	Habitat Disturbances			• Restrict vegetation clearance activities within the project site. • Prohibit unnecessary disturbance of neighbouring vegetation due to vehicular movement, and destruction of floral resources. • Do not harm any nests of ground dwelling birds/reptiles and in case of disturbance, quickly notify to the competent authority for rescue. • All construction activities would be undertaken with appropriate noise mitigation measures to minimize disturbance to faunal species specially the herpetofauna in the region. • Restrict construction activities to daylight hours to prevent disruption of the natural night period by artificial lighting. • To prevention of introduction of Invasive Alien Species, it is recommended that clients would include a provision in suppliers 'contracts that equipment/machineries would arrive "clean as new". • An Invasive Species Management plan should be developed for management of Invasive species.	EHS person of EPC contractors	EHS Inspection	Monthly	EHS person of Project management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team

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Operation Phase										
Physical Environment										
19.	Ambient Air quality	Increase level of Particulate matter	Operation Phase	• Limit DG operation to essential periods; use automatic shutdown when grid power is restored. • DG sets should be maintained on regular basis to significantly reduce the emission reduction. • Adequate stack height of DG Sets would be maintained (at least 6m higher than the nearest building) to disperse the air pollutants and dilute the pollutant concentration in the vicinity. • Use of low Sulfur diesel for DG sets • All DG sets would be complying to regulatory requirement of Government of Iraq. • Vehicle should be ply on paved road within the hotel premises. • Educate operational staff on fuel handling, maintenance, and pollution prevention protocols. • Implement periodic stack emissions monitoring and ambient air quality surveys in accordance with Iraqi Ministry of Environment standards.	EHS person of O&M contractors	EHS Inspection	Monthly	EHS person of Project Management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team
20.	Ambient Noise	Increase of Ambient Noise level	Operation Phase	• As a part of standard operating practice, necessary noise prevention and control measures viz. use of acoustic barriers, regular use of Personal Protective Equipment (PPE) to the works engaged near DG set, regular preventive maintenance of equipment etc. must be implemented. • DG set would be placed in suitable acoustic enclosure. • Mount DG sets on anti-vibration pads or spring isolators to prevent structural noise transmission. • Ensure walls, doors, and ceilings of the D.G. room have sound-absorbing materials (e.g., mineral wool, acoustic panels). • Unnecessary honking of Passenger vehicles should be prohibited.	EHS person of O&M contractors	EHS Inspection	Monthly	EHS person of Project Management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team

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				• Conduct periodic noise level measurements at property boundaries and sensitive areas to ensure compliance with IFC and local standards.						
21.	Soil Contamination	Contaminated soil	Operation Phase	• Spill control kits should be used to promptly contain and clean up minor spills and leaks during operation and maintenance (O&M) activities. • Develop and implement guidelines and procedures for immediate response and cleanup following any spillage incidents. • Sewage generated on-site should be treated and disposed of through septic tanks and soak pits. • Transport vehicles and equipment must undergo regular maintenance to prevent oil leaks. • Prepare loading and unloading protocols for diesel, oil, and used oil, and ensure that workers are trained to prevent and manage spills and leaks. • Hazardous material and waste will be properly labelled, stored onsite at a location provided with impervious surface and in a secondary containment system. • It is to be ensure that that no unauthorized dumping of used oil and other hazardous waste is undertaken at the site. • A logbook should be maintained for quantity and type of hazardous waste generated. • All the hazardous waste and biomedical waste required to be handed over to the authorized vendor. • Oil/chemicals would be stored on paved impervious surfaces with proper shade and bund and secondary containment would be provided for fuel storage tanks. • Unloading and loading protocols should be prepared for fuels, acids, chemicals respectively and workers trained to prevent/contain spills and leaks, and in case of accidental/unintended spillage, the contaminated soil should be immediately collected and stored as hazardous waste.	EHS person of O&M contractors	EHS Inspection	Monthly	EHS person of Project Management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team
22.	Water Availability	Availability of water		• It should be ensured that the there is no leakage of water from the water distribution system • Water meter to be installed at water take point to monitor the usage of Water. • Water conservation measures need to be implemented. • Implement water recycling if feasible.	EHS person of O&M contractors	EHS Inspection	Monthly	EHS person of Project Management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team
23.	Water Contamination	Contaminated surface and ground water	Operation Phase	• Installation of flowmeters at each of the outlets from the buildings to monitor the generation of wastewater. • The surface runoff from hotel premises shall be diverted to a settlement tank for settlement of suspended solids. The overflow shall be treated in water treatment unit and recycled in the Project. • The sewer network should be checked regular to prevent any accidental leakage from sewage pipeline.	EHS person of O&M contractors	EHS Inspection	Monthly	EHS person of Project Management Team	Onsite Project Management Team	Report from Onsite EHS team to Corporate EHS Team
Socioeconomics										

24.	Labour rights and Welfare		Operation Phase	• Project SPVs to implement HR policies and SOP at site level. The HR Manual to include the following:
				  ○ Organizational chart and clear description of responsibilities between HR/Admin functions at the project level and corporate level
				  ○ Code of conduct
				  ○ Tools, a set of forms and register, labor contracts, supporting the implementation of HR policy and procedures
				  ○ Workers' GRM to cover permanent staff and non-employees (agency workers and contractors)
				  ○ HR and labor training plan and materials
				  ○ Monitoring, auditing reporting arrangement
				  ○ Policy on retrenchment and layoff of staff with a commitment to develop retrenchment plan if required at least 3 months prior to retrenchment
				  ○ Recruitment schedule for key staff
				  ○ Continuous review and update HR MS
				• Establish workers engagement plan and grievance redressal mechanism – to showcase the engagement mode and model of the project with workers and to allows the workers to report any concern or grievance related to work activity
					HR Team of O&M Company	Obtain Social security permits and adherence of Law no 37 of 2015 and Law no 18 of 2023.	During operation phase on monthly basis	HR Team and HR Head	Onsite Project Management Team of Hotel Operator	Report from Onsite HR team to Corporate HR Team of Estithmar

Sr. No.	Environmental/Social Resources	Impact/Issues	Applicable Project Phase	Mitigation Measures	Responsibility for ensuring implementation of the suggested mitigation	Means of verification that mitigation has been met	Timeline/Frequency of Monitoring	Responsibility for implementation of monitoring	Supervision responsibility	Reporting Requirements
				• The labor accommodation and guest houses facility for contractual workers and as well as for regular employees should meet the requirement of the applicable reference framework, and EBRD and IFC's guidelines on workers' accommodation – in terms of space per workers, water, and sanitation facilities, first aid, lighting and ventilation, etc. Further, the project will undertake regular (basis of fixed timeline) monitoring to ensure compliance through the Project lifecycle • The Project should also ensure a monthly and regular auditing mechanism for monitoring the sub-contractors and suppliers with respect to compliance with the applicable national regulations and applicable reference framework for this report. The compliance will be in terms of (but not limited to) resources, workers' working conditions, migrant workers, child labor and forced labor, GBVH (Gender-based violence and harassment), health and safety, etc. • The Project will also establish provisions related to non-employment and abolition of any form of child labor and forced and bonder labor in the contractual agreement with contractors. Further, the Project publicly will showcase its commitment toward non-employment of child labor and forced and bonded labor. • The Project will ensure the labor rights and welfare in compliance with the ILO's eleven (11) fundamental instruments: • Forced Labor Convention, 1940 (No 29) • Right to Organise and Collective Bargaining Convention, 1949 (No. 98) • Freedom of Association and Protection of the Right to Organize Convention, 1948 (No. 87) • Equal Remuneration Convention, 1951 (No. 100) • Abolition of Forced Labour Convention, 1957 (No. 105) • Discrimination (Employment and Occupation) Convention, 1958 (No. 111) • Minimum Age Convention, 1973 (No. 138) (Minimum age specified: 15 years • Worst Forms of Child Labour Convention, 1999 (No. 182) • Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)					
25.	Occupational Health and safety	Damage/Loss of Life	Operation Phase	• To address ergonomic risks, the hotel should implement staff training on safe lifting techniques, provide mechanical aids for handling luggage, and rotate tasks to reduce repetitive strain. • Housekeeping and front-of-house teams should be equipped with ergonomically designed tools and supportive footwear. • In kitchen and food service areas, strict adherence to food safety and kitchen safety protocols should be enforced, including proper PPE, slip-resistant flooring, machine guarding, fire-suppression systems, and routine equipment maintenance. • A site-specific training calendar should be developed and implemented onsite • Hospital tie-ups with nearby hospital should be done • Adequate fire safety system including fire extinguishers, sand buckets should be provided on site • Safe drinking water supply should be provided for the workers • An up to date first aid box should be provided at site and a trained person should be appointed to manage it • The site-specific occupational health and safety plan and emergency management plan should be implemented at the project location. The nearest hospital, ambulance, fire station and police station should be identified in the implemented emergency management plan. • Personal Protective Equipment (PPEs) including safety shoes, high visibility vest, protective gloves and face masks (to be used in kitchen & food handling, housekeeping, maintenance) should be provided to the workers. A PPE inventory should be maintained onsite • Structural integrity should be checked before undertaking any work • Electrical and maintenance work should not be carried out during poor weather • Annual health checkups of workers should be undertaken • Considering the heightened security context in Baghdad, the hotel should establish comprehensive security management plans, including controlled access points, trained security personnel, emergency drills, and coordination with local authorities.	EHS Manager and Supervisors of O&M Team	EHS Inspection	During operation phase on monthly basis	EHS Team of O&M team	Onsite Project Management Team of Hotel Operator	Report from Onsite EHS team to Corporate EHS Team of Estithmar

Sr. No.	Environmental/Social Resources	Impact/Issues	Applicable Project Phase	Mitigation Measures	Responsibility for ensuring implementation of the suggested mitigation	Means of verification that mitigation has been met	Timeline/Frequency of Monitoring	Responsibility for implementation of monitoring	Supervision responsibility	Reporting Requirements
				• Bomb-blast resistant design features, CCTV systems, and well-rehearsed evacuation procedures further reduce security risks. • Fire hazards can arise from the electrical systems, overheating components, or flammable materials within the turbine. A fire in the nacelle or electrical room can pose serious risks to workers. • For maintenance staff, risk assessments should be conducted for all electrical, mechanical, and chemical tasks, supported by lock-out/tag-out procedures, PPE, and hazard communication systems. • To enhance indoor air quality, the hotel should ensure proper ventilation, regular HVAC servicing, safe storage and use of chemicals, and well-maintained generators with adequate exhaust systems. • Mental health risks can be mitigated by ensuring reasonable shift schedules, providing rest breaks, offering employee assistance programs, and promoting a supportive work environment. • Overall, establishing an Occupational Health and Safety Management System aligned with international standards (e.g., ISO 45001) ensures continuous monitoring, incident reporting, and improvement of safety performance. • There would be arrangements for hygienic sanitation facilities for all the laborers working at site. • Accident reporting and monitoring records would be maintained.						
26.	Community Health and Safety	Impacts of hotel operation on local communities	Operation phase	• O&M Contractor to develop and enforce a detailed Traffic Management Plan (TMP) for the operational phase, covering internal circulation, parking allocation, and routing of service vehicles. • O&M Contractor to ensure installation of speed bumps, pedestrian walkways, zebra crossings, and road markings around the site. • O&M Contractor to conduct periodic monitoring of traffic flows, community complaints, and safety incidents, followed by corrective actions as needed. • O&M Contractor to establishment of a Community Liaison Officer (CLO) and a Grievance Redress Mechanism (GRM) accessible to neighbours. • O&M Contractor to establish emergency response protocols: evacuation plans, first-aid, firefighting systems, and drills involving both staff and local emergency services. • O&M Contractor to install acoustic enclosures, vibration isolators, and silencers on generators and HVAC systems. • O&M Contractor to apply acoustic glazing and insulation to guest rooms facing busy streets. • Implement nighttime lighting controls—down-shields, low-glare LEDs—to minimize light spill. • Utilize low-sulphur diesel and adequate stack height to be provided to D.G. sets. • Record and track security incidents, complaints, near-misses, with transparent follow-up mechanisms for community concerns. • O&M Contractor to formulate labor accommodation management plan for the operation phase and implement the same at site.	EHS Manager, Community Liaison Officer and Supervisors of O&M Team	EHS Inspection	During operation phase on monthly basis	EHS Team of O&M team	Onsite Project Management Team of Hotel Operator	Report from Onsite EHS team to Corporate EHS Team of Estithmar

9 Impact Summary and Conclusion

9.1 Introduction

This Environmental and Social Impact Assessment (ESIA) has been conducted to evaluate the impacts associated with the proposed Project. The impact assessment has been conducted in compliance with the requirement of applicable reference framework (refer to ***Section 1.2***).

9.2 Magnitude of Impacts

The ESIA focussed on interaction between the Project activities and various resources/receptors that could result in significant impacts. ***Table*** 9-1 presents the outcome of the comprehensive assessment of identified impacts due to various project activities.

Table 9-1: Impact Assessment Summary

Impact Description	Intensity	Nature of Impact	Phase of the Project	Magnitude of Impact	
				Without Mitigation	With Mitigation
Environment					
Land use	Low	Negative	Construction	Small	Low to Negligible
Topography And Drainage	Low	Negative	Construction	Negligible	Negligible
Ambient Air Quality	Moderate	Negative	Construction	Substantial	Small
	Low	Negative	Operation phase	Substantial	Small
Ambient Noise	High	Negative	Construction Phase	Substantial	Small
	Low	Negative	Operation phase	Substantial	Small
Soil Contamination	Moderate	Negative	Construction Phase	Small	Negligible
	Moderate	Negative	Operation Phase	Substantial	Small
Soil Erosion and Compaction	Low to Moderate	Negative	Construction Phase	Small	Negligible
Water Availability	Low	Negative	Construction Phase	Small	Negligible
	Low	Negative	Operation Phase	Small	Negligible
Water Quality	Moderate	Negative	Construction Phase	Small	Negligible
	Insignificant	Negative	Operation Phase	Negligible	Negligible
Social					
Stress on Local Community	Low	Negative	Construction Phase	Substantial	Small
Impact on Economy and Employment	Moderate to High	Positive	Construction Phase	Substantial positive impact	Substantial positive impact
Labour Rights and Welfare	High	Negative	Construction Phase	Major	Small
	Low	Negative	Operation Phase	Substantial	Small
Occupational Health and safety	High	Negative	Construction Phase	Substantial	Small
	Moderate to Low	Negative	Operation phase	Substantial	Small
Community Health and safety	Moderate	Negative	Construction Phase	Substantial	Small
	Moderate	Negative	Operation Phase	Small	Negligible
Safety and Security	High	Negative	Construction phase	Substantial	Small
Gender based Violence and Harassment	Moderate	Negative	Construction Phase	Substantial	Negligible

Impact Description	Intensity	Nature of Impact	Phase of the Project	Magnitude of Impact	
				Without Mitigation	With Mitigation
Ecology					
Habitat Modification	Low	Negative	Construction phase	Small	Negligible
Habitat disturbance	Low	Negative	Construction phase	Small	Negligible

9.3 Project Categorization

IFC's Environmental and Social Review Procedure Manual has provided a provisional categorization tool for projects. The tool assigns an E&S category based on risk inherent to the particular sector, as well as on the likelihood of a development taking place and on what can be reasonably ascertained about the environmental and social characterization of the Project's likely geographical setting. The categories are defined as follows:

1. **Category A:** Projects with potential significant adverse environmental or social risks and/or impacts that is diverse, irreversible, or unprecedented.
2. **Category B:** Projects with potential limited adverse environmental or social risks and/or impacts that is few in number, generally site-specific, largely irreversible and readily addressed through mitigation measures.
3. **Category C:** Projects with minimal or no adverse environmental or social risks and/or impacts.

The proposed Project has been categorized as ***Category B*** as per the IFC guidelines. Rationale behind project categorization has been provided below:

- Construction and operation phase activities on site may have low to medium scale impacts which include land use change, air emissions, noise emissions, water availability, waste generation, soil quality and erosion, habitat disturbances etc. Construction activities will also have some impacts on occupational health and safety and community health & safety of the engaged workers and surrounding communities. However, these identified impacts will be limited in distribution, site specific in nature, largely reversible and can be readily addressed through mitigation measures suggested in the Environment and Social Management Plan.
- The water requirement during the construction and operation phase of the project will be sourced from local Municipality. Considering the amount of water requirement, this will not impose any major impacts on the availability of the water resources for the surrounding community.
- The identified impacts on the ecology and biodiversity are site specific, irreversible and could be addressed through suggested mitigation measures.
- The project is being developed on government land which has been transferred by Baghdad Municipality hence there were no physical and economic displacements associated with land parcel.
- The project is not impacting any Indigenous People, common property resources and cultural heritage

APPENDIX 1: DOCUMENTS REVIEWED

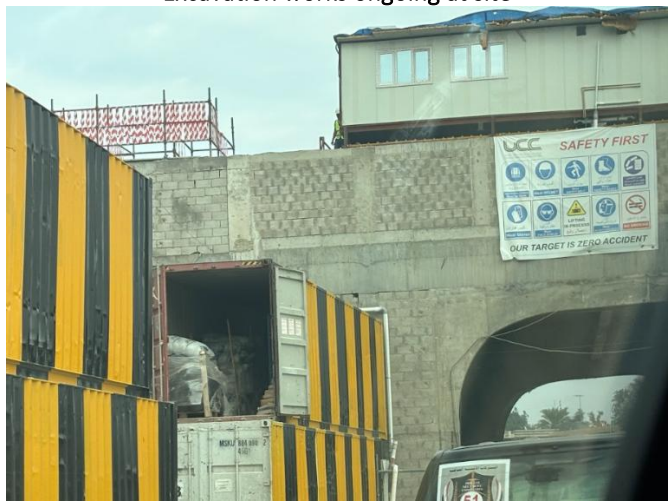
Sr. No.	Documents Reviewed
1	Review of the information's and documents related to Hotel Operator, Baghdad project.
2	Environmental, Health, and Safety Guidelines for Tourism and Hospitality Development
3	Google Earth imagery-based review of the site locations and surrounding land-use
4	Design Planning Manual for Buildings, UNOPS
5	Baghdad US Embassy Air Pollution: Real-time Air Quality Index
6	Ministry of Environment, Legislations
7	Global Distribution of Natural Disasters, World Bank Group
8	Various Corporate Policies of UCC as mentioned below: • Occupational Health and Safety Policy • Environmental and Sustainability Policy • Quality Policy • Welfare Adherence Policy • Business Continuity Management Policy • Risk Management Policy • Emergency Communication Policy • Fire Safety Policy • Non-smoking Policy • Security Policy • Alcohol and Drug Policy • Project Completion Policy • Innovation Policy • HR Policy and Handbook
9	Site-specific management plan of UCC as mentioned below: • Emergency Response Plan • Waste Management Plan • Fire Safety Plan • Security Plan • Flood Mitigation Plan • Fire Preparedness Checklist • Security Management Procedure
10	Site Specific Training Schedule
11	Sample Appointment Letter of worker
12	Sample Grievance and Counselling Log for October 2025
13	HSE Monthly Report
14	Project Schedule
15	IUCN Red List version 2024-2
16	Iraq Ministry of Environment
17	e.bird.org
18	BirdLife Data Zone - BirdLife International
19	https://www.inaturalist.org/

APPENDIX 2: PHOTOLOG

Ongoing Construction work

Excavation works ongoing at site

Domestic waste disposed through Municipality trucks



Safety instructions displayed at site

Occupational Health and Safety Clinic

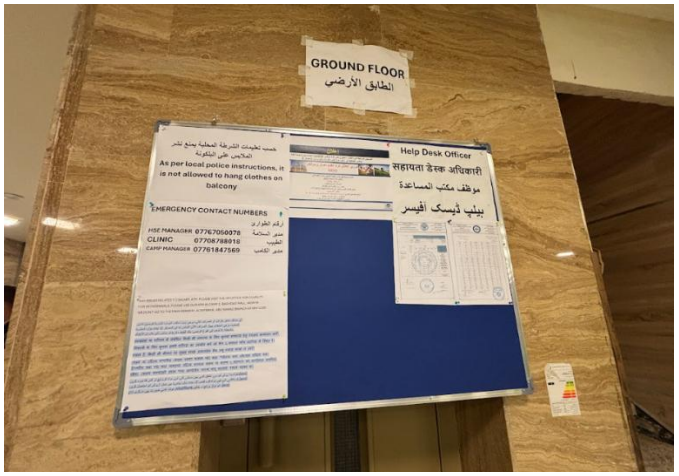
Passenger Car exit ramp

Ongoing villa construction work

Diesel Fuel Tankers at Ground Floor

Fire water Tanker

Work at height safety instructions



Display board at Labour Camp

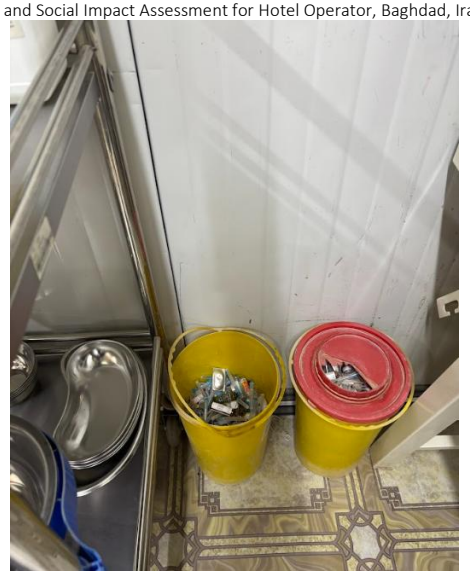
Diesel Fuel Tank at Labour camp

Vehicle carrying general mixed waste

Designated material storage area at site

DG set at Labour camp

Biomedical Waste bin at OHS Clinic

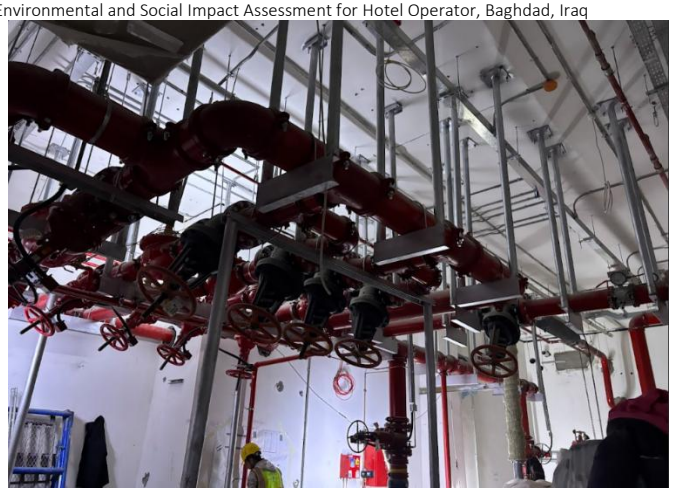


Used syringe and glasses

RO filter at camp

Raw Water Storage Tank

IT Room



Fire hydrant pipeline

RO Maintenance work

Diesel Generators at Ground Floor

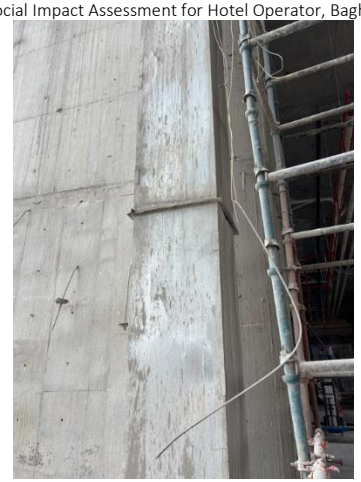
Proposed Swimming Pool Area

Sewer pipelines passing adjacent to porta cabins and being drained at Municipality drainage

Concrete blocks stored at on-site premises

C&D Waste collected at Site

Construction wastewater collection tank on each floor



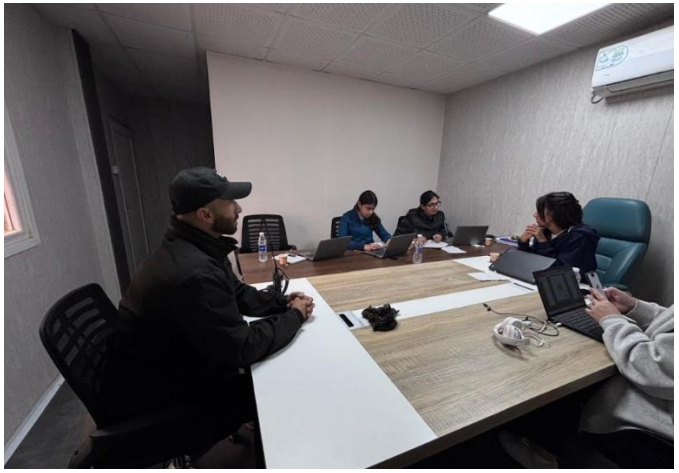
Garbage chute

Concrete mixing wastewater slurry stored in a pit near Batching plant area

Water meter installed in pipeline

Groundwater abstracted is filtered and drained to Baghdad Municipality drainage

Consultation with labour camp officials



Consultation with Security Personnel

Consultation with Labours

Consultation at Medical Centre