بِسْمِ اللهِ الرَّحْمٰنِ الرَّحِيْمِ

THE HAWKS PRIVATE LIMITED
REG: (C-109/2007)
H. Zoneyria, 7th Floor, Boduthakurufaanu Magu,
Male', Republic of Maldives, 20057
Think smart - Supply fast

Reference no: TH-AD022-2024

Mr. Ibrahim Naeem
Director General
Environment Protection Agency
Male'
Maldives

20th March 2024

Dear Mr. Naeem,

Re: Additional information for Environmental Impact Assessment
EIA for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll

Please find the requested additional information for the captioned EIA, requested from your letter no. 203-ECA/PRIV/2024/221.

Sincerely

Hassan Rifau
Chief Executive Officer

ADDITIONAL INFORMATION FOR THE ENVIRONMENTAL IMPACT ASSESSMENT FOR

EIA FOR THE PROPOSED DEVELOPMENT OF THE HAWKS OFFICE COMPLEX AT LOT 11769, HULHUMALE' PHASE 1, KAAFU ATOLL

Requested Date: 18th March 2024

Reference Number: 203-ECA/PRIV/2024/221

Additional Information prepared date: 19th March 2024

Proponent: The Hawks Pvt Ltd

Lead Consultant of the EIA: Mahfooz Abdul Wahhab

Co-Consultants of the EIA: Ibrahim Rashihu Adam

1. ADDITIONAL INFORMATION

The additional information required for the EIA for the Development of the Hawks Office Complex at Lot 11769, Hulhumale’ Phase 1, Kaafu Atoll was requested through EPA letter (203-ECA/PRIV/2024/221). A copy of the letter is presented under appendix C of this additional information. The requested additional information are provided below;

1. In both Dhivehi and English executive summaries, need to include brief summary of the project description and project components, stakeholders and outcomes of their consultations, monitoring and follow up component.

The Jadhuvalu baa of *EIA* regulation states that the executive summary shall include project description, project location, alternatives, impacts and mitigation. All these are reflected in the existing executive summary of the report, below please find the partial print.

VI. ސާދާ ޚުލާސާ

މި ރިޕޯޓަކީ ހުޅުމާލޭގައި 10 ބުރީގެ އިމާރާތެއް އެޅުމުން ތިމާވެއްޓަށް ކުރާނެ ނޭދެވޭ އަސަރު ދެނެގަނެ، އެ އަސަރުތައް ކުޑަކުރުމަށް ގޮތްތައް ދެނެގަތުމާއި އަދި އެ މަސައްކަތްތަކުގެ ކުރިއަށް ގެންދިއުމުގައި ތިމާވެއްޓަށް ކުރާނެ ނޭދެވޭ އަސަރު ދެނެގަނެ، އެ އަސަރުތައް ކުޑަކުރުމަށް ގޮތްތައް ދެނެގަތުމަށްޓަކައި އެންވަޔަރަމަންޓަލް ރިޕޯޓެކެވެ. މި ރިޕޯޓުގެ މައިގަނޑު ބައިތަކާއި ބުރީގައި ހިންގުމުގައި ރިޕޯޓުގެ ބައެއް، މަޝްރޫއުގެ ގުޅުންހުރި ސިޔާސަތުތަކާއި، ގާނޫނު، ގަވާއިދު އަދި އުސޫލުތައް، މަޝްރޫއުގައި ހިންގުމާ ބައިތަކާއި މަޝްރޫއު ކުރިއަށް ގެންދާނެ ގޮތާއި ބަދަލު، މަޝްރޫއު ކުރިއަށް ގެންދާ ސަރަހައްދުގެ ތިމާވެށީގެ ހާލަތު ދެނެގަތުމަށްޓަކައި ބޭނުންކުރެވުނު ކުރިއަށް ގެންދިޔަ އަދި ސަރަހައްދުގެ ތިމާވެށީގެ ހާލަތު، މަޝްރޫއުގެ ގުޅުން ހުރި އިންސާނާ ގުޅޭ ބައިތަކާއި ތިމާވެށީގެ ބަދަލުތަކާއި، މަޝްރޫއުގެ ސަބަބުން ތިމާވެށީގެ ސަރަހައްދަށް ކުރާނެ އަސަރުތައް، މި އަސަރުތަކުގެ ބަދަލުގައި އިހުތިޔާރުކުރެވޭނެ ގޮތްތައް ފާހަގަކުރުމާއި ތިމާވެށި ބެލެހެއްޓުމުގެ ޕްރޮގްރާމް ހިމެނެއެވެ.

އެއްވެސް މަޝްރޫއެއް ހިންގުމުގެ ކުރިން ސަރަހައްދުގައި ހުރި ތިމާވެށީގެ ހާލަތު ބެލުމަށް ސާވޭތައް ކުރެވުނެވެ. މިގޮތުން އެ ސަރަހައްދުގެ ވައިގެ ހާލަތު، އަޑުގެ ހާލަތު، ފެނުގެ ހާލަތާއި ބިމުގެ ހާލަތު ބަލައި، ޖެހިގެން ހުރި ސަރަހައްދުތައް ދިރާސާކުރެވިފައެވެ. މިގޮތުން ބިމުގެ ތެރެއިން ނެގި ފެނާއި ހުޅުމާލެ ސަރަހައްދުގެ ނަމޫނާތައް ބެލުމުގެ ތެރޭގައި ހިމެނެއެވެ. މިގޮތުން މި ދިރާސާ ތަކުގައި ފެނުގެ ކޮލިޓީ، އަދި ހޮޓާ ގުޅޭ ތިމާވެށީގެ ހާލަތު ބަލާފައިވެއެވެ. މިގޮތުން މި އީ.އައި.އޭ ހުށަހެޅުމުގެ ކުރިން ހުޅުމާލޭގައި އޮތް ސަރަހައްދުގެ ތިމާވެށީގެ ދިރާސާތަކެވެ.

މި އީ.އައި.އޭގައި ބަލާފައިވާ ދިރާސާތަކުން 10 ބުރީގެ އިމާރާތް އަޅާ ސަރަހައްދާއި ތިމާވެށީގެ ކަންކަމަށް ކުރާނެ ޓެކްނިކަލް ފައިދާތައް ފާހަގަކުރެވިފައެވެ. އަދި މި ސަރަހައްދުގައި ބައެއް ހާލަތުގައި އާބާދީ ގިނަވުމުން ފެން ބޭނުންކުރުމާއި ކަރަންޓު ބޭނުންކުރުން ބޮޑުވާނެއެވެ. މި ރިޕޯޓުގައި މަސައްކަތް ކުރިއަށް ގެންދާ ގޮތް ރަނގަޅަށް ބަލައި ތިމާވެށީގެ ބަދަލުތައް ފާހަގަކޮށް، އިމާރާތް ހިންގުމުގެ ސަބަބުން އަސަރުކުރާނެ ބައިތަކުގެ ގޮތުން ތިމާވެށި ބެލެހެއްޓުމުގެ ޕްލޭނާއި ކަންކަން ރަނގަޅަށް ހިންގުމުގެ އުސޫލުތައް ފާހަގަކޮށްދީފައެވެ.

މި މަޝްރޫޢުގެ ސަބަބުން ތިމާވެއްޓަށް ކުރާނެ އެންމެ ބޮޑު ނޭދެވޭ އަސަރަކީ ކޮންސްޓްރަކްޝަން ފޭސްގައި އިމާރާތްކުރާ ސަރަހައްދުގެ ވަށައި [illegible]، މިސަރަހައްދުގައި [illegible] ސަބަބުން [illegible] ދިމާވާނޭ ދަތިތަކެވެ. އަދި މަސައްކަތު ކުރިއަށް ދާއިރު މިސަރަހައްދުގެ މަގުތައް ބަންދުކުރުމުގެ ސަބަބުން ޓްރެފިކް ބޮޑުވުމާއި [illegible] ކުރިމަތިވާނެ ކަމަށް ފާހަގަ ކުރެވިފައެވެ. މީގެ އިތުރުން [illegible] [illegible] މައިގަނޑު [illegible] [illegible] މަޝްރޫޢުގެ މަސައްކަތު [illegible] [illegible] ދާއިރު [illegible] [illegible] [illegible].

މި ރިޕޯޓުގައި ބަޔާންކޮށްފައިވާ [illegible] [illegible] ފިޔަވަޅުތަކާއި އެއްގޮތަށް މަޝްރޫޢުގެ މަސައްކަތް ކުރިއަށް [illegible] [illegible]، މަޝްރޫޢުގެ މަސައްކަތް ކުރިއަށް ގެންދިއުން އެންމެ ރަނގަޅުކަމުގައި ފެނެއެވެ.

VII. EXECUTIVE SUMMARY

The purpose of this EIA is to critically analyse and assess the potential environmental impacts associated with the proposed development of a 10-storey office building and analyses the solutions and preferred alternatives as well as mitigation measures to minimize any negative impacts whilst trying to derive the maximum positive impacts from the project.

The centralization of capital city of Maldives, Male' over the past years has led to the immigration of locals from outer Atolls to Male', where the basic necessities are inefficient. As a result, Male' is now one of the most congested cities in the world. In order to provide a solution for this, Hulhumale' reclamation project was initiated in 1997, the official inauguration of the city occurred in 2004. Reclamation of 188 ha of land of Hulhumale' phase 1 was completed on 2002. The city has become home to some major commercial developments. Hulhumale' phase 1 was developed with an open space index of 2.50, to ensure a healthy lifestyle. Including parks, green strips and open sports areas, Hulhumale' provides a total of 50,000 sqft of open space areas.

One of the key objectives of hulhumale development is to release pressure in Male and to build a strong commercial base. The advantages of Hulhumale over Male City include its location close to international airport connected by land, availability of land and well-planned developments etc. Also, Hulhumale is being developed in a sustainable way, which means that it is expected to have a lower environmental impact than Male city. As a result of these factors, Hulhumale is increasingly being seen as the Maldives's premier commercial hub. The government is committed to developing Hulhumale into a world-class business destination, and a number of major companies have already invested in the city.

The Proponent of the proposed project has acquired the LOT 11769 in Hulhumale' and intends to construct 10-storey commercial building on the land which will be used to run the office operations of the proponent and for commercial purposes in the form of lease agreements

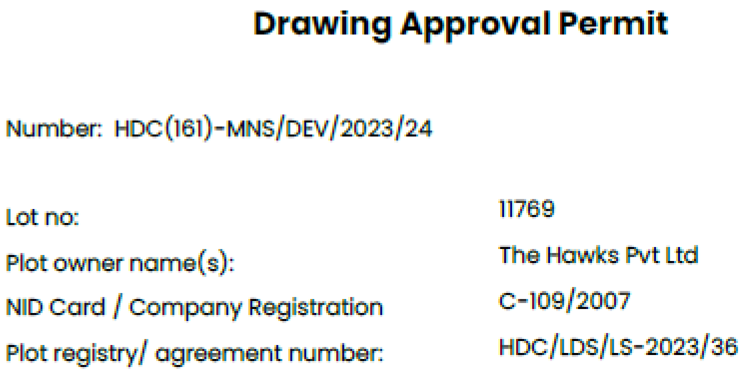
The major regulatory requirements for the project involve obtaining the EIA decision statement to go ahead with the project as per the EIA regulation, following with the legislations pertaining to building works, waste management and other utility service provision. In order to assess the existing environment of the project site, various aspects were studied under the EIA. Some of them are, air quality, noise, socioeconomic environment, traffic and water quality. Additionally, this study also involved identification of alternative options in place of the proposed development. The considered options were no project scenario, moving project location and alternative types of foundation renewable energy integration and groundwater recharging option from excess rainfall.

Air and noise pollution arising specially from vibrations, operation of heavy machinery as well as disturbances on the traffic flow due to road blocks are the most significant negative impact which would arise during the construction phase of the project. Additionally, during the operational phase, it is anticipated that there will be increase in traffic flow in the area while also improvement on landscape and scenery of the location. Major mitigation measures proposed in the construction phase include measures to take dust suppression actions such as spraying water on ground, ensuring shortest vehicle route in mobilization, vehicles are maintained properly, avoiding unnecessary use of vehicles, planning road closure in such a way that it wouldn't over burden the traffic, following oil and chemical handing procedures, having emergency spill clean-up crew at site and following best practices in waste management at all phases of the project.

The socioeconomic benefits during the operations far outweigh the negative impacts. It is expected that the proposed development will provide convenient opportunities for shoppers in Hulhumale' which will directly benefit for the proponent and the communities living in the area. Therefore, it is recommended to proceed with the construction of 10 storey office building as proposed by taking necessary mitigation measures prescribed in the report.

2. Building permit issued by HDC for the proposed project needs to be provided.

The building permit is issued after EIA approval. At this stage HDC provides a drawing approval permit, a partial print of this document is attached below.



Drawing Approval Permit

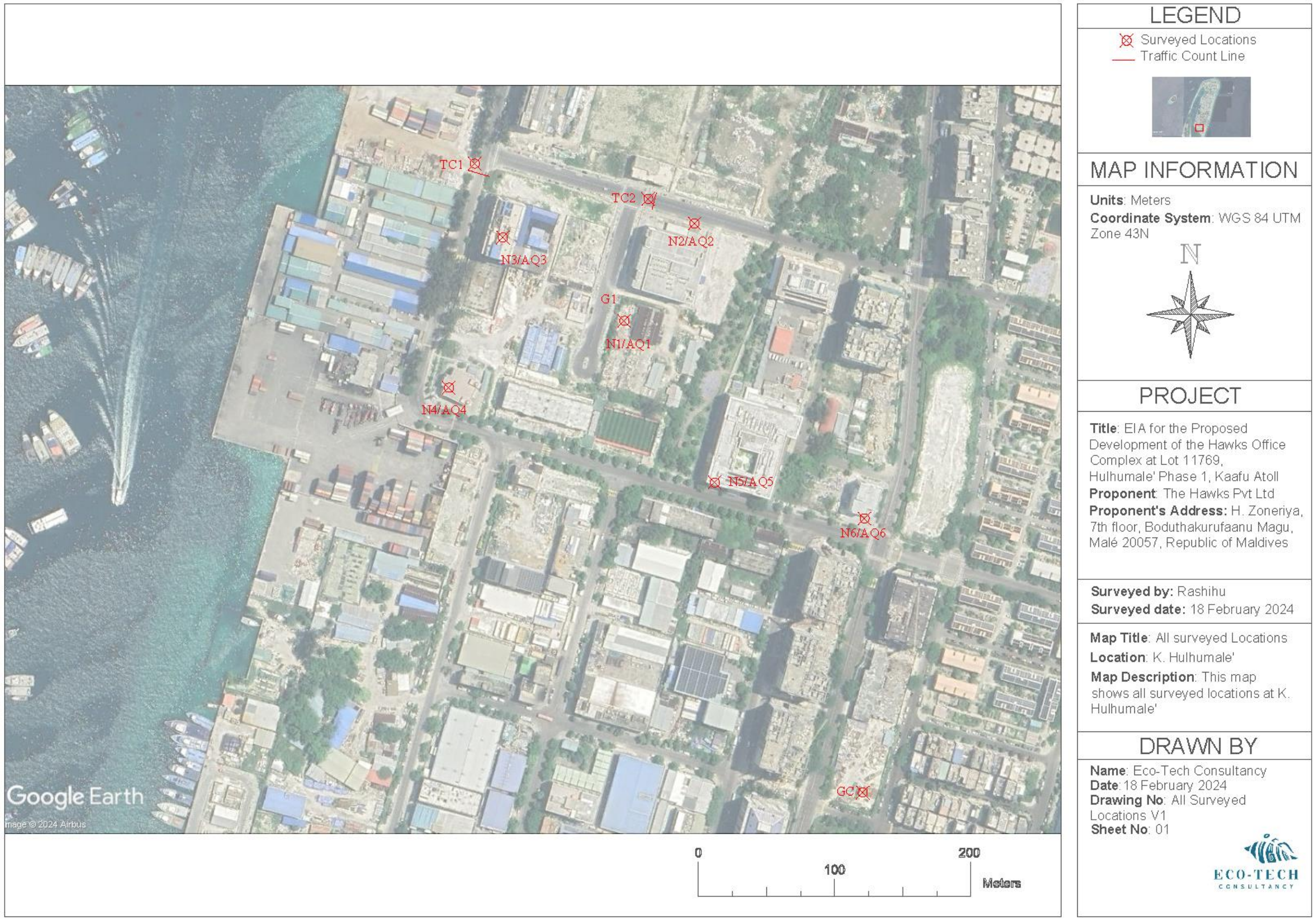
Number: HDC(161)-MNS/DEV/2023/24

Lot no:	11769
Plot owner name(s):	The Hawks Pvt Ltd
NID Card / Company Registration	C-109/2007
Plot registry/ agreement number:	HDC/LDS/LS-2023/36

3. Air quality assessment locations need to be marked on the survey location map.

The revised survey location map is provided below.

Additional Information for the EIA for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll



Units: Meters
Coordinate System: WGS 84 UTM Zone 43N

Title: EIA for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll
Proponent: The Hawks Pvt Ltd
Proponent's Address: H. Zoneriya, 7th floor, Boduthakurufaanu Magu, Malé 20057, Republic of Maldives

Surveyed by: Rashihu
Surveyed date: 18 February 2024

Map Title: All surveyed Locations
Location: K. Hulhumale'
Map Description: This map shows all surveyed locations at K. Hulhumale'

Name: Eco-Tech Consultancy
Date: 18 February 2024
Drawing No: All Surveyed Locations V1
Sheet No: 01

4. In chapter 3 of the report, the following needs to be discussed:

•Maldives National Building Act

•Mosquito Control Regulation 2007

•Guidelines for Power System Approval

•Guidelines for Providing Water to High Rise Buildings

•Guidelines for establishing waste disposal chute (garbage chute) or waste collection area in buildings 2016

Maldives National Building Act (04/2017)

The purpose of the Maldives national building act is to ensure the safety of buildings, ensure the safety of the civil works of building projects, emphasize on innovative technology, ensuring that the workers in the building sector have adequate capacity, ensure the quality of the building materials, formulating the board of Maldives building and construction board and enhancing the building sector as a whole.

Mosquito Control Regulation - The regulation is no longer available on the relevant government entities websites. However, an EA report by Mr. Firdous Hussain titled Development and Operation of Commercial building in Hulhumale Lot 11621 (N3-15) as identified the regulation as follows;

“Ministry of Health published a mosquito control regulation in 2007. The regulation provides responsibilities of landlords and developers on prevention of mosquito growth in households and buildings. These include prevention of open water-logged areas, cleaning gutters, and pipes. It also guides on prevention of mosquito growth during building construction and repair/maintenance works. The penalties for not adhering to the Clauses of the regulation as stated by the regulation very small, and is almost negligible. Heavier penalties may be imposed by HPA if mosquito breeding becomes a persistent issue in the building area, and if not controlled after several inspections and warnings. As such Clause 9.3 states HPA can take legal action against developers under such a scenario." (Hussain, 2021)

Guideline for power system approval – the project does not include inhouse power generation but relies on the utility services electricity. This is already reflected in the report.

Guideline for providing water to high rise buildings – The regulation is not available on the relevant government entities websites. However, an EA report by Mr. Firdous Hussain titled Development and Operation of Commercial building in Hulhumale Lot 11621 (N3-15) as identified the regulation as follows;

"The guideline highlights the recommended process to supply water to high rise buildings most efficiently. The guideline categorizes buildings to 3 different categories; Building Type 1 (generally 4 storey building), Building Type 2 (generally 5 to 7 storey building), and High Rise Buildings (generally buildings with 8 storeys or more). This project falls under the Building type 2 category. Therefore, under the guidelines it is required for a booster pump along with a water collection tank to be in place under the project. The guidelines give 3 options to setup such a system, where option 1 is to have a rooftop tank system and option 2 is to have a single booster system and option 3 is to have zone divided system. Schematic illustrating the 3 options are given below. Under the guidelines MWSC requires the minimum capacity of the water collection tank to be the buildings average consumption for one day. MWSC shall eventually take control of all the booster systems and sub meters and carry out maintenance through standard procedures. The guideline eventually states that any specific issue that is not stated in the guidelines will be resolved through MWSC's standard guidelines for providing water services." (Hussain, 2021)

Guidelines for establishing waste disposal chute (garbage chute) or waste collection area in buildings 2016 – The regulation is not available on the relevant government entities websites. However, an EA report by Mr. Firdous Hussain titled Development and Operation of Commercial building in Hulhumale Lot 11621 (N3-15) as identified the regulation as follows;

"Clause 5. Buildings with 4 – 10 storey are required to consist of a waste collection area in the ground floor. Clause 6. Buildings greater than 11 storey are requires to consist of a waste disposal chute (garbage chute) and a waste collection area in the ground floor. Clause 7. Waste collection area walls and flooring should be made with tiles and/or from a material that can be easily washable. Clause 8. Waste disposal chute (garbage chute) should be made with a material that can be easily washable. Clause 9. Waste collection area in residential buildings should be at least 1.5% of the building footprint. Clause 11. Buildings with 4 – 10 storeys can setup waste collection area within land plot outside the building premises, and buildings that are 11 storey or more should have waste collection area integrated with the garbage chute. Clause 12. Effect of waste and related odor should not be outside the waste collection area and garbage chute. Clause 13. It should be ensured that waste deposited in waste collection area should be properly enclosed. Clause 14. A system should be in place to clean/wash the Waste collection area with an integrating solution. Clause 15. Waste collection area boundary should have a height of at least 5 feet. Clause 16. Garbage chute should be accessible from each floor. Furthermore, the chute area should be closed when not in use and should be unreachable to children. Clause 18. Garbage chute width should be at least 18 inches. Clause 19. Tenants/Developers would be penalized under 'Penalties for not abiding to the Male' Planning Regulation' Guidelines. Under the regulation, the proposed building will be required to have a Garbage Chute and a waste collection area in the ground floor with an area of 1.5% of the building footprint." (Hussain, 2021)

5. In chapter 3 of the report, how the laws/regulations/guidelines/policies discussed in the chapter are relevant to the proposed project need to be provided along with how the proposed project comply/adhere to them.

The section 3.6 specifically mentions that all statutory requirements pertaining to this project shall be adhered to by the proponent during detail design phase, construction and operational phase. Furthermore, any changes to the legislative framework shall be considered and required changes shall be brought to project components as necessary. Below please find the partial print.

3.6 Compliance of the Proposed Proposal to Statutory Requirements

All statutory requirements pertaining to this project shall be adhered to by the proponent during detail design phase, construction and operational phase. Furthermore, any changes to the legislative framework shall be considered and required changes shall be brought to project components as necessary.

6. Both inputs and outputs of the proposed project needs to be quantified in numerical figures (where applicable). In construction phase input, utilities and staff/workers requirement need to be included.

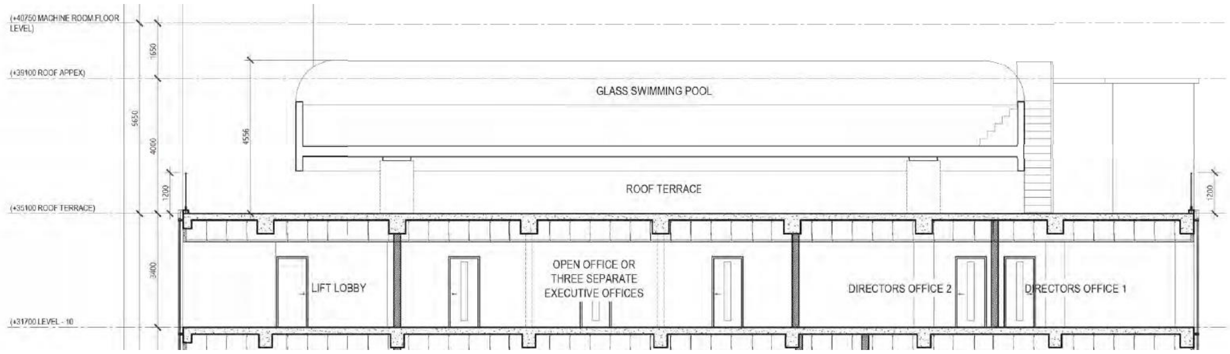
The revised table is provided

Input resource(s)	**Source/ type**	**Qty/Volume**	**Source of resource**
Construction Phase			
Man power	expatriate	150	Contractor
Construction material	**Temporary site setup**: Galvanized pipes, roofing sheets, toilet units, toilet fittings, cement, sand, timber, spun piles	Small quantities	Local purchase or import
	Concrete works: reinforcement steel bars, river sand, cement, aggregates	Large quantities	Local purchase or import
	Roofing: Timber; Thatch, prefabricated materials.	Large quantities	Local purchase or import
	Electrical: electrical cables and wires, DBs, MMCBs and MCBs, PVC pipes, light weight, telephone cable CAT 5, PVC conduits, 4 core armored cables, PP-R pipe, Multi pump, UPVC (T1000, T600) for sewerage grid	Large quantities	Local purchase or import
	Water and Sewer: HDPE pipes, pumps, control panels, inspection chambers	Large quantities	Local purchase or import
	Finishing: floor and wall tiles, gypsum boards, calcium silicate boards, zinc coated corrugated	Large quantities	Local purchase or import

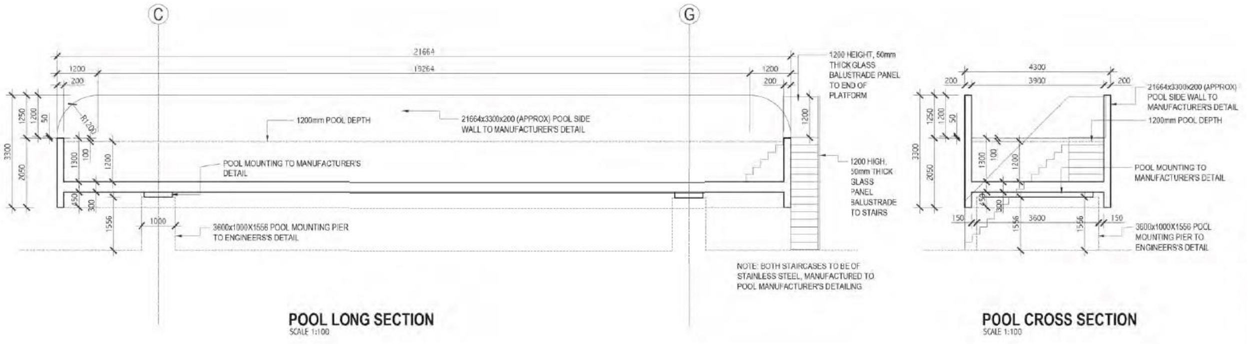
	metal roof, paint, varnish, lacquer, thinner, dry walls, carpet etc.		
Machinery and equipment	Excavator, Truck, Concrete mixer, General construction tools, Small lorry, forklift, Barge, Dewatering pump, total station, level gage, Crane	Large quantities	Contractor
Water	Desalinated water	Est. to be not more 120 liters per person per day for worker	MWSC
Power	Electricity	30KW per day	STELCO
Operational Phase			
Water	Desalinated water	Est. to be not more 120 liters per person per day for employees	MWSC
Power	Electricity	290KW per day	STELCO

7. As specified in the Approved ToR, need to provide details of construction of pool including but not limited to (a) Construction methodology (b) Location of proposed pool (c) Size of the pool (d) Water source for pool (e) Details of disposal of wastewater from pool (f) Details of pool water management including disinfection (treatment methods used, including chlorination, if any).

The pool will be constructed from pre-made acrylic sheets. At the site the acrylic sheets will be cut to the required sizes and welded together to construct the pool. The pool is located in the roof terrace flow (please see below the partial print from the approved drawing set).



The length of the pool is 21664 mm and width 4300 mm. The depth of the pool is 1200 mm. A partial print from the attached drawing set in the EIA report is provided below.



Water for the pool will be sourced from MWSC via the water connection to the building and the effluent will be connected to the sewerage system.

Pool management

In order to confirm that the pool is safe for the users, the water quality of the pool must be properly maintained. To achieve the recommended required water safety levels, a filtration system will be installed consisting of pumps and filters. Also, water from the filtration units shall be evenly distributed into the swimming pool.

To ensure that the pool water is free any microbes, proper disinfection shall be carried out using chlorine dosing pumps; calcium hypochlorite will be dosed into the pool to maintain the free chlorine level between 2-3 ppm. On the other hand, the pH of the water shall be neutralized by dosing diluted hydrochloric acid in the pool water and as such the pH shall be maintained in the range of 7.2 to 7.6.

With time the filtration system shall require backwashing and as such the backwash water, having same characteristics of the pool water in terms of pH and free chlorine but containing solid impurities will be discharged into a properly designed soak away.

It is not expected that waste water will be generated during the operation of the pool as the installed filters will re-circulate water back into the pool. Moreover, the drainage system around the pool will recover displaced water and pump the water back into the pool through the filters.

8. Existing structures/uses of the proposed site need to be provided as per the approved ToR.

The plot is not used for any purpose at the moment, however the proponent has mobilized sheet piles to the project site.

9. Parking capacity and access need to be provided as specified in the approved ToR.

The details with partial prints of the parking and access are provided in the section 4.4 of the report. The parking facilities are provided in the basement, ground and first floor. The access is provided in the ground floor. Below please find the partial prints from the report.

4.4.1.1 Basement floor

The basement floor consists of a 45.5m4 water tank, car parking allocations, building utility space and lifts. The proposed car parking at three levels and it is proposed to establish the combiparker 560 system.

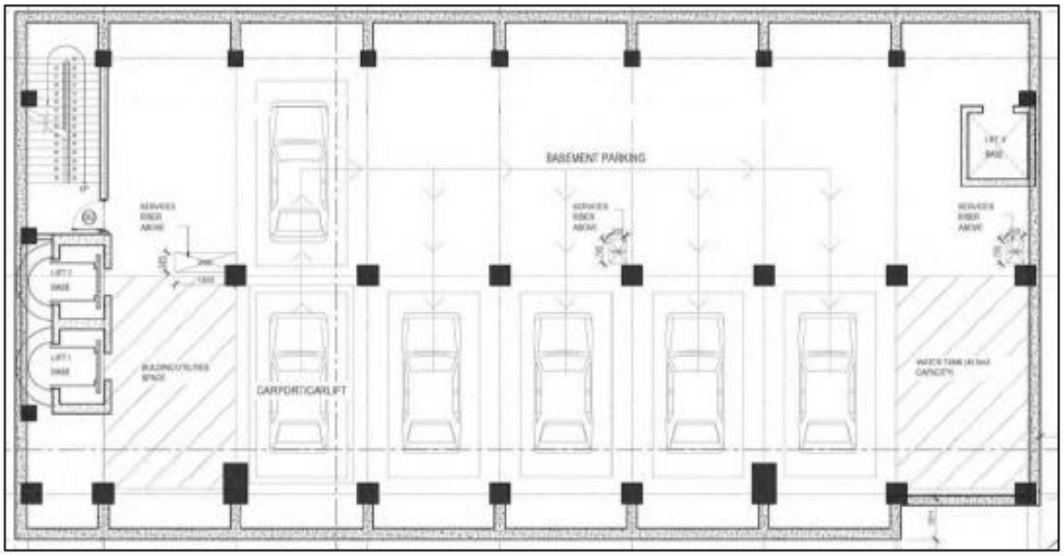


Figure 5: Partial print of basement floor layout

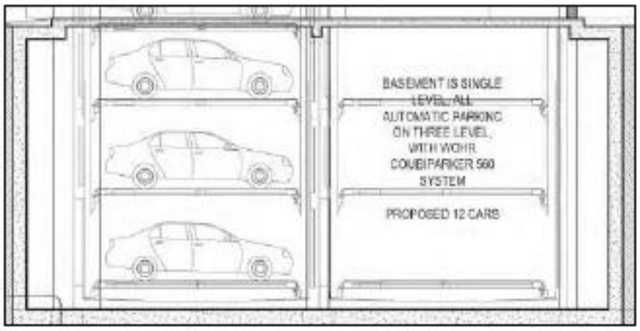


Figure 6: Partial print of car parking concept

4.4.1.2 Ground floor

The ground floor consists of parking space , access ramp, car and motor cycle lifts, designated fire lift, passenger lifts and lift lobby, waste management unit, two toilets with disability access and allocated space for other building utilities.

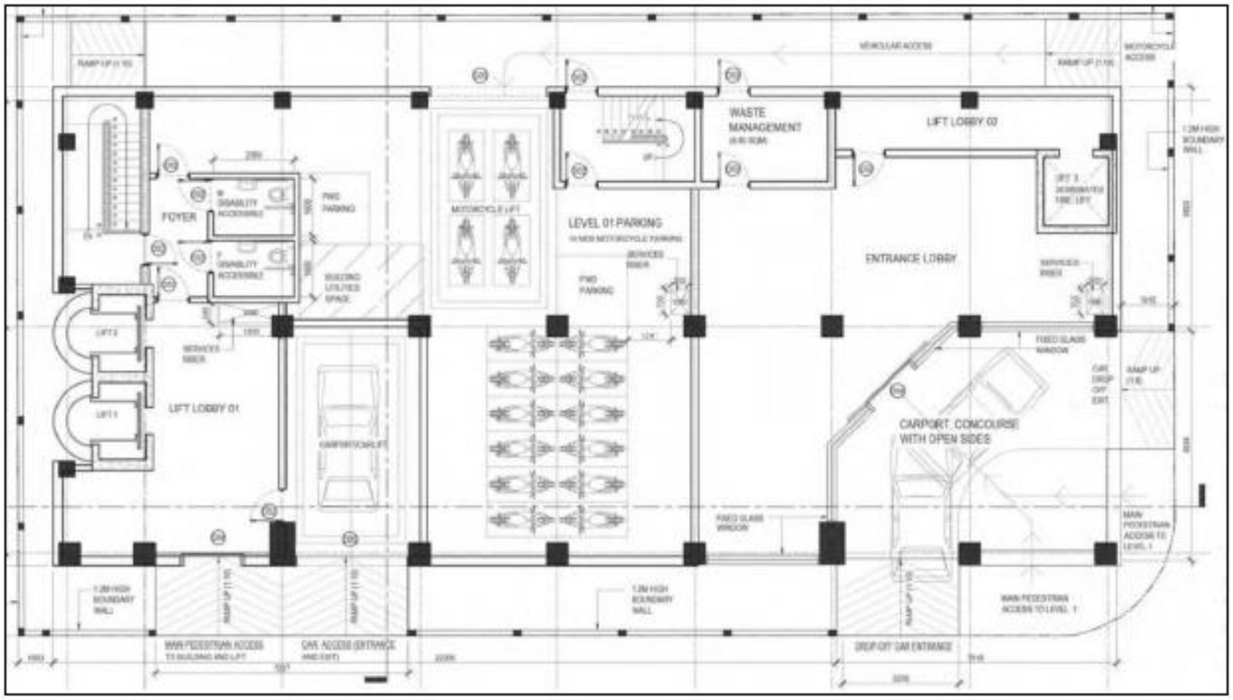


Figure 7: Partial print of proposed layout at ground floor

4.4.1.3 1st Floor

The first floor contains; allocated motor cycle parking spaces, two toilets with disability access, passenger lifts, designated fire lift, team room, baby care room and storage.

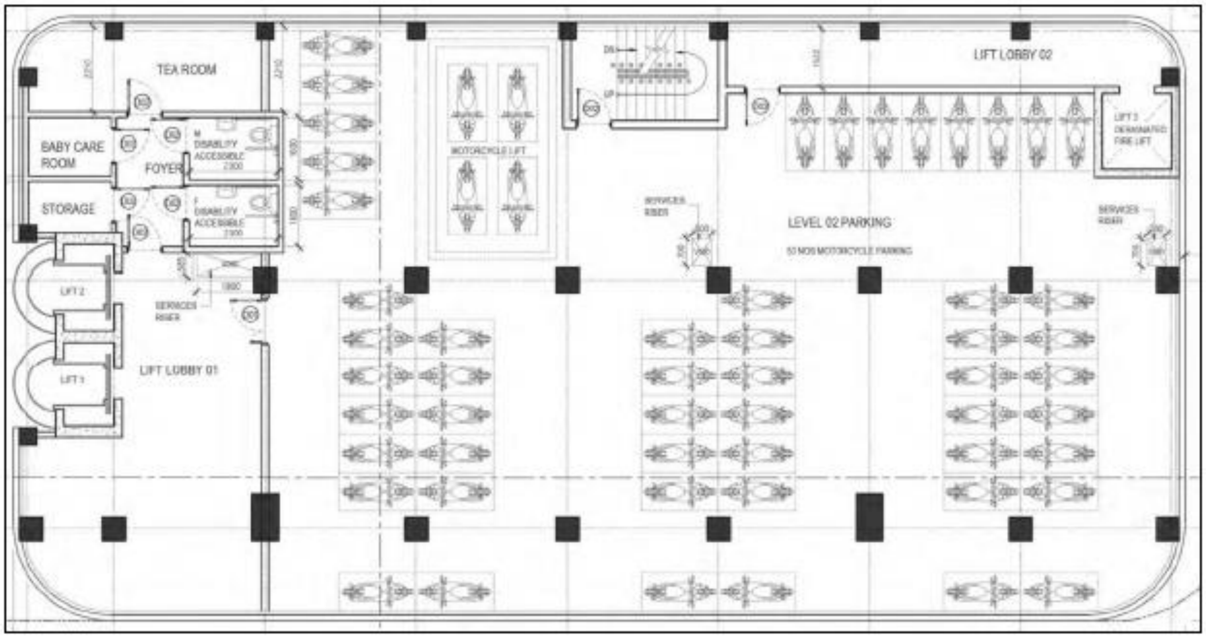


Figure 8: Partial print of proposed layout at first floor

10. Estimated consumption of water and electricity and their sources during both constructional and operational phase of the proposed project need to be provided as per the approved ToR.

The revised input and outputs table is provided below

Input resource(s)	**Source/ type**	**Qty/Volume**	**Source of resource**
Construction Phase			
Man power	expatriate	150	Contractor
Construction material	**Temporary site setup**: Galvanized pipes, roofing sheets, toilet units, toilet fittings, cement, sand, timber, spun piles	Small quantities	Local purchase or import
	Concrete works: reinforcement steel bars, river sand, cement, aggregates	Large quantities	Local purchase or import

	Roofing: Timber; Thatch, prefabricated materials.	Large quantities	Local purchase or import
	Electrical: electrical cables and wires, DBs, MMCBs and MCBs, PVC pipes, light weight, telephone cable CAT 5, PVC conduits, 4 core armored cables, PP-R pipe, Multi pump, UPVC (T1000, T600) for sewerage grid	Large quantities	Local purchase or import
	Water and Sewer: HDPE pipes, pumps, control panels, inspection chambers	Large quantities	Local purchase or import
	Finishing: floor and wall tiles, gypsum boards, calcium silicate boards, zinc coated corrugated metal roof, paint, varnish, lacquer, thinner, dry walls, carpet etc.	Large quantities	Local purchase or import
Machinery and equipment	Excavator, Truck, Concrete mixer, General construction tools, Small lorry, forklift, Barge, Dewatering pump, total station, level gage, Crane	Large quantities	Contractor
Water	Desalinated water	Est. to be not more 120 liters per person per day for worker	MWSC
Power	Electricity	30KW per day	STELCO
Operational Phase			
Water	Desalinated water	Est. to be not more 120 liters per person per day for employees	MWSC
Power	Electricity	290KW per day	STELCO

11. In Table 17 (Page 164), the column for average noise levels were left blank, hence, this needs to be provided.

The average noise column is irrelevant as the ToR does not mandate to provide the average for the noise levels but the column was not deleted. Please find the updated noise table below without the average noise column.

Code	Time	Location	Noise levels (dB)		Observations
			Min	Max	
N 1	14.33	(Project Construction site) Within project site	56.1	59.6	construction Light breeze
N2	1445	(Near project site) Umar Zahir Building	67.6	70.5	Construction Little Traffic Moderate breeze
N3	1553	(Near project site) Marina View Apartments	63.2	75.4	Traffic Asr prayer call
N 4	1630	(Near project site) Masjid Al-Asdiqa	63.5	67.3	Traffic
N 5	1602	(Near project site) Tree Top Hospital	60.8	71.1	Traffic Conversation
N6	1611	(Near project site) Aster shop	66.3	71.2	Traffic

12. Need to justify why pedestrians where not included in the traffic survey considering the project site is at a residential area. It was specified in the approved ToR to provide pedestrian movements around the project site/ pedestrian traffic around the proposed site.

The project site is not at a residential area as highlighted by the HDC during the consultation with them, the immediate vicinity of the proposed project area is allocated only for office buildings, residential building is proposed further away. Since the project site is in an office area without social avenues, and the fact that the project site is situated within a segment of the main road that goes from Hulhumale phase 1 towards phase 2, the pedestrian traffic to the location is minimal, the majority of commuters to the offices were also accessing the offices on vehicles. Moreover, the project site is situated at a reasonable distance from residential areas, suggesting that the traffic count has likely comprehensively accounted for the local populace.

13. Population of adjacent buildings and brief description of social environment of adjacent residential units need to be provided as per the approved ToR.

It was noted by HDC in the stakeholder meeting that the proximity of the project area is currently used for office buildings and residential buildings are located further down the road. A partial print in provided below.

6.2.5 HDC

The table below shows the concerns, suggestions and recommendations made by HDC regarding the proposed project along with the proponents' responses for the concerns (if any) which were raised.

Table 27: outcomes of the consultation with HDC

Concerns / Suggestions raised	Proponents Response
Within the immediate vicinity of the proposed project area only office buildings are proposed, residential buildings are proposed further away.	Noted.

14. Groundwater quality monitoring need to include monitoring all parameters studied for baseline in both project site and control site.

Please find revised monitoring table.

Parameter	**Locations**	**Method**	**Indicators**	**Frequency**	**Cost / MRF**	**Staff requirement**
CONSTRUCTION PHASE						
Ground water	Construction site and Control	Water quality test	Compare with baseline	Every 3 months during construction	2000	1 surveyor
Grievance redress monitoring	Construction site	Logs	Complains	Daily	1000	1 surveyor
Vegetation clearance monitoring	Construction site	Visual	Vegetation removed	Every 3 months during construction	1000	1 surveyor
Air quality	Construction site	Air quality measurement	Compare with baseline	Every 3 months during construction	1000	1 surveyor
Traffic flow	Construction site	Traffic Count	Compare with baseline	Every 3 months during construction	500	2 surveyors
Waste	Construction site	Visual inspection	Improper management of waste	Every 3 months during construction	200	1 surveyor
Accidents	Project site	Workplace accidents	Number of incidents	Every 3 months during construction	1000	1 surveyor
Noise	Project site	Decibel meter or any other equipment that can measure sound levels	Compare with baseline	Every 3 months during construction	500	1 surveyor
OPERATIONAL PHASE						
Air quality	Indoor and outdoor of office complex	Air quality measurement	Compare with baseline	Every 3 months after construction for 1 year and annually for 5 years	1500	1 surveyor

Condition of built structures	Entire building	Visual	Structural or visual integrity deterioration	Every 3 months after construction for 1 year and annually for 5 years	1000	1 surveyor
Noise	Project site	Decibel meter or any other equipment that can measure sound levels	Compare with baseline	Every 3 months after construction for 1 year and annually for 5 years	500	1 surveyor
Ground water	Project site and Control	Water quality test	Compare with baseline	Every 3 months after construction for 1 year and annually for 5 years	2000	1 surveyor
Waste	Waste collection area	Visual	Odour and littering	Every 3 months after construction for 1 year and annually for 5 years	200	1 surveyor
Traffic flow	Project site	Traffic Count	Compare with baseline	Every 3 months after construction for 1 year and annually for 5 years	500	2 surveyors

15. In Table 37 (Pages 241-242), grievance redress monitoring, socio-economic aspects monitoring and terrestrial environment/vegetation clearance monitoring need to be included in the constructional phase monitoring. The monitoring of the condition of the structures to be built under the proposed project needs to be included in operational phase monitoring. Moreover, need to include measurable indicators for the monitoring of waste management during construction phase of the proposed project.

Please find below revised monitoring table.

Parameter	Locations	Method	Indicators	Frequency	Cost / MRF	Staff requirement
CONSTRUCTION PHASE						
Ground water	Construction site and Control	Water quality test	Compare with baseline	Every 3 months during construction	2000	1 surveyor
Grievance redress monitoring	Construction site	Logs	Complains	Daily	1000	1 surveyor
Vegetation clearance monitoring	Construction site	Visual	Vegetation removed	Every 3 months during construction	1000	1 surveyor
Air quality	Construction site	Air quality measurement	Compare with baseline	Every 3 months during construction	1000	1 surveyor
Traffic flow	Construction site	Traffic Count	Compare with baseline	Every 3 months during construction	500	2 surveyors
Waste	Construction site	Visual inspection	Improper management of waste	Every 3 months during construction	200	1 surveyor
Accidents	Project site	Workplace accidents	Number of incidents	Every 3 months during construction	1000	1 surveyor
Noise	Project site	Decibel meter or any other equipment that can measure sound levels	Compare with baseline	Every 3 months during construction	500	1 surveyor
OPERATIONAL PHASE						
Air quality	Indoor and outdoor of office complex	Air quality measurement	Compare with baseline	Every 3 months after construction for 1 year and annually for 5 years	1500	1 surveyor

Condition of built structures	Entire building	Visual	Structural or visual integrity deterioration	Every 3 months after construction for 1 year and annually for 5 years	1000	1 surveyor
Noise	Project site	Decibel meter or any other equipment that can measure sound levels	Compare with baseline	Every 3 months after construction for 1 year and annually for 5 years	500	1 surveyor
Ground water	Project site and Control	Water quality test	Compare with baseline	Every 3 months after construction for 1 year and annually for 5 years	2000	1 surveyor
Waste	Waste collection area	Visual	Odour and littering	Every 3 months after construction for 1 year and annually for 5 years	200	1 surveyor
Traffic flow	Project site	Traffic Count	Compare with baseline	Every 3 months after construction for 1 year and annually for 5 years	500	2 surveyors

16. Conclusion chapter needs to be amended to include provisions for follow-up and monitoring.

Please find revised conclusion after including the component of follow up and monitoring below.

The purpose of this EIA is to critically analyse and assess the potential environmental impacts associated with the proposed development of a 10-storey office building and analyses the solutions and preferred alternatives as well as mitigation measures to minimize any negative impacts whilst trying to derive the maximum positive impacts from the project.

The centralization of capital city of Maldives, Male' over the past years has led to the immigration of locals from outer Atolls to Male', where the basic necessities are inefficient. As a result, Male' is now one of the most congested cities in the world. In order to provide a solution for this, Hulhumale' reclamation project was initiated in 1997, the official inauguration of the city occurred in 2004. Reclamation of 188 ha of land of Hulhumale' phase 1 was completed on 2002. The city has become home to some major commercial developments. Hulhumale' phase 1 was developed with an open space index of 2.50, to ensure a healthy lifestyle. Including parks, green strips and open sports areas, Hulhumale' provides a total of 50,000 sqft of open space areas.

One of the key objectives of hulhumale development is to release pressure in Male and to build a strong commercial base. The advantages of Hulhumale over Male City include its location close to international airport connected by land, availability of land and well-planned developments etc. Also, Hulhumale is being developed in a sustainable way, which means that it is expected to have a lower environmental impact than Male city. As a result of these factors, Hulhumale is increasingly being seen as the Maldives's premier commercial hub. The government is committed to developing Hulhumale into a world-class business destination, and a number of major companies have already invested in the city.

The Proponent of the proposed project has acquired the LOT 11769 in Hulhumale' and intends to construct 10-storey commercial building on the land which will be used to run the office operations of the proponent and for commercial purposes in the form of lease agreements

The major regulatory requirements for the project involve obtaining the EIA decision statement to go ahead with the project as per the EIA regulation, following with the legislations pertaining to building works, waste management and other utility service provision. In order to assess the existing environment of the project site, various aspects were studied under the EIA. Some of them are, air quality, noise, socioeconomic environment, traffic and water quality. Additionally, this study also involved identification of alternative options in place of the proposed development. The considered options were no project scenario, moving project location and alternative types of foundation renewable energy integration and groundwater recharging option from excess rainfall.

Air and noise pollution arising specially from vibrations, operation of heavy machinery as well as disturbances on the traffic flow due to road blocks are the most significant negative impact which would arise during the construction phase of the project. Additionally, during the operational phase, it is anticipated that there will be increase in traffic flow in the area while also improvement on landscape and scenery of the location. Major mitigation measures proposed in the construction phase include measures to take dust suppression actions such as spraying water on ground, ensuring shortest vehicle route in mobilization, vehicles are maintained properly, avoiding unnecessary use of vehicles, planning road closure in such a way that it wouldn't over burden the traffic, following oil and chemical handing procedures, having emergency spill clean-up crew at site and following best practices in waste management at all phases of the project. Furthermore, environmental monitoring is essential and therefore an environmental monitoring program is proposed with the report. It includes monitoring the groundwater, air quality, traffic flow, waste, accidents and noise through the project period.

The socioeconomic benefits during the operations far outweigh the negative impacts. It is expected that the proposed development will provide convenient opportunities for shoppers in Hulhumale' which will directly benefit for the proponent and the communities living in the area.

Therefore, it is recommended to proceed with the construction of 10-storey office building as proposed by taking necessary mitigation measures prescribed in the report

2. APPENDICES

APPENDIX A. ADDITIONAL REFERENCES USED

Hussain, F. (2021). *EIA repor tot the Proposed 6-Storey Commercial Building at Neighbourhood-3, Plot N3-15(11621) in Hulhumale', Kaafu Atoll.* EPA.

APPENDIX B. LIST OF ABBREVIATIONS

EIA : Environmental Impact Assessment 2

EPA : Environmental Protection Agency 2

APPENDIX C. ADDITIONAL INFORMATION REQUESTED LETTER

بسم الله الرحمن الرحيم

އެންވަޔަރަންމަންޓަލް ޕްރޮޓެކްޝަން އެޖެންސީ
Environmental Protection Agency
EPA

ނަންބަރު:203-ECA/PRIV/2024/221

ދި ކޮންސަލްޓް ޕްރައިވެޓް ލިމިޓެޑްގެ މެނޭޖިންގ ޑިރެކްޓަރަށް،

ވެދުން ސަލާމަށްފަހު ދަންނަވަމެވެ.

ކ. ހުޅުމާލެ ފޭސް 1 ގެ 11769 ޕްލޮޓުގައި އޮފީސް އިމާރާތެއް އެޅުމުގެ މަޝްރޫއުއަށް ހުށަހަޅުއްވާފައިވާ ތިމާވެށްޓަށް އަސަރުކުރާނެ މިންވަރު ބަޔާންކުރާ ރިޕޯޓުން މަދުވާ މައުލޫމާތާއި ބެހޭ:

ތިޔަ ފަރާތުން، ސުރުޚީގައި ބަޔާންކޮށްފައިވާ މަޝްރޫއުއަށް ހުށަހަޅުއްވާފައިވާ ތިމާވެށްޓަށް އަސަރުކުރާނެ މިންވަރު ބަޔާންކުރާ ރިޕޯޓު ވަގަން ހުރުމަށްފަހު ބައެއް މައުލޫމާތު މަދުވާކަން ފާހަގަކުރެވިފައެވެ.

ވީމާ، މި ސިޓީއާއެކު ލިސްޓްކޮށްފައިވާ މައުލޫމާތު 18 **އޭޕްރީލް** 2024 ގެ ކުރިން މި އެޖެންސީއަށް ފޮނުއްވުމަށް ދަންނަވަމެވެ. މި ތާރީޚުގެ ތެރޭގައި މި މައުލޫމާތު މި އެޖެންސީއަށް ހުށަހަޅުއްވައި ނުވާނަމަ ނުވަތަ މައުލޫމާތު ހުށަހަޅުއްވާނެ މުއްދަތެއް އިތުރުކުރުމަށް ލިޔުމުން ނުވާނަމަ ފޮނުއްވާފައިވުން ވަރަކަ ދަންނަވަމެވެ. މި ސިޓީއާއެކު، ބޭނުންވާ މައުލޫމާތުގެ ޗެކްލިސްޓް އެޓޭޗްކޮށް ލިޔުމެއް ފޮނުވީމެވެ.

އިހްތިރާމް ޤަބޫލުކުރެއްވުން އެދެމެވެ.

08 ޝައްވާލް 1445
18 އޭޕްރީލް 2024

[illegible]

[illegible]
ޑިރެކްޓަރ

ދި ކޮންސަލްޓް ޕްރައިވެޓް ލިމިޓެޑް،
މާލެ، ދިވެހިރާއްޖެ

بسم الله الرحمن الرحيم

އެންވަޔަރަންމަންޓަލް ޕްރޮޓެކްޝަން އޭޖެންސީ
Environmental Protection Agency
EPA

Information Lacking in the EIA for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll

1. In both Dhivehi and English executive summaries, need to include brief summary of the project description and project components, stakeholders and outcomes of their consultations, monitoring and follow up component.

2. Building permit issued by HDC for the proposed project needs to be provided.

3. Air quality assessment locations need to be marked on the survey location map.

4. In chapter 3 of the report, the following needs to be discussed:

   - Maldives National Building Act
   - Mosquito Control Regulation 2007
   - Guidelines for Power System Approval
   - Guidelines for Providing Water to High Rise Buildings
   - Guidelines for establishing waste disposal chute (garbage chute) or waste collection area in buildings 2016

5. In chapter 3 of the report, how the laws/regulations/guidelines/policies discussed in the chapter are relevant to the proposed project need to be provided along with how the proposed project comply/adhere to them.

6. Both inputs and outputs of the proposed project needs to be quantified in numerical figures (where applicable). In construction phase input, utilities and staff/workers requirement need to be included.

7. As specified in the Approved ToR, need to provide details of construction of pool including but not limited to (a) Construction methodology (b) Location of proposed pool (c) Size of the pool (d) Water source for pool (e) Details of disposal of wastewater from pool (f) Details of pool water management including disinfection (treatment methods used, including chlorination, if any).

8. Existing structures/uses of the proposed site need to be provided as per the approved ToR.

9. Parking capacity and access need to be provided as specified in the approved ToR.

10. Estimated consumption of water and electricity and their sources during both constructional and operational phase of the proposed project need to be provided as per the approved ToR.

11. In Table 17 (Page 164), the column for average noise levels were left blank, hence, this needs to be provided.

12. Need to justify why pedestrians where not included in the traffic survey considering the project site is at a residential area. It was specified in the approved ToR to provide pedestrian movements around the project site/ pedestrian traffic around the proposed site.

13. Population of adjacent buildings and brief description of social environment of adjacent residential units need to be provided as per the approved ToR.

14. Groundwater quality monitoring need to include monitoring all parameters studied for baseline in both project site and control site.

15. In Table 37 (Pages 241-242), grievance redress monitoring, socio-economic aspects monitoring and terrestrial environment/vegetation clearance monitoring need to be included in the constructional phase monitoring. The monitoring of the condition of the structures to be built under the proposed project needs to be included in operational phase monitoring. Moreover, need to include measurable indicators for the monitoring of waste management during construction phase of the proposed project.

16. Conclusion chapter needs to be amended to include provisions for follow-up and monitoring.

APPENDIX D. DRAWING APPROVAL PERMIT

HOUSING
DEVELOPMENT
CORPORATION

Drawing Approval Permit

Number: HDC(161)-MNS/DEV/2023/24

Lot no:	11769
Plot owner name(s):	The Hawks Pvt Ltd
NID Card / Company Registration	C-109/2007
Plot registry/ agreement number:	HDC/LDS/LS-2023/36
Building height:	43.50m
Number of floors:	10 floors & terrace
Type of structure:	Concrete
Type of floor:	Concrete
Permit approval date:	07-02-2024
Permit expiry date:	06-02-2030

Architect:	Aishath Laisa Mohamed	License No:	BPR2020136LA
Civil Engineer:	Kinaanath Hussain	License No:	DPR2019003LE

The drawing(s) submitted have been approved by this corporation. The construction shall only commence once construction approvals from government authorities and this corporation are acquired. The project should commence according to the given approvals. All safety measures are to be ensured in order to prevent damages to workers, adjacent buildings, objects and the public.

This is a computer generated permit. No signature is required.

بسم الله الرحمن الرحيم

Ministry of Environment and Energy
މިނިސްޓްރީ އޮފް އެންވަޔަރަންމަންޓް އެންޑް އެނަރޖީ

Environmental Protection Agency
އެންވަޔަރަންމަންޓަލް ޕްރޮޓެކްޝަން އެޖެންސީ

އީ.އައި.އޭ ޑޮކިއުމަންޓްގެ ދަށުން ހުށަހަޅަންޖެހޭ ރިޕޯޓްތައް ހުށަހަޅާ ފޯމު

އާންމު ބައިތައް

ރިޕޯޓުގެ ނަން: Environmental Impact Assessment for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll

ރިޕޯޓް ތައްޔާރުކުރި ކޮންސަލްޓަންޓްގެ ނަން: Mahfooz Abdul Wahhab

މޯބައިލް ނަންބަރު: 9994467

ކޮންސަލްޓަންޓުން ރަޖިސްޓްރޭޝަން ނަންބަރު: EIA P22/2016

މުއްދަތު ހަމަވާ ތާރީޚް: 27th December 2026

އިދާރާ: The Hawks Pvt Ltd

މޯބައިލް ނަންބަރު: 797-3743

މުރާޖަޢާކުރާ ގޮތުގެ ނިންމުމަށް އެދޭ ދަރަޖަ: ދަރަޖަ 1 (5000ރ) ☐ ދަރަޖަ 2 (10000ރ) ☐ ދަރަޖަ 3 (20000ރ) ☑

ރިޕޯޓުގައި ހިމެނޭ ބައިތައް

		ކޮންސަލްޓަންޓް ފުރިހަމަ ކުރުމަށް	އިދާރީ ބޭނުމަށް
1	ހުށަހެޅި ކަވަރލެޓަރުގެ އަސްލު	1	
2	އިލެކްޓްރޯނިކް ކޮޕީގެ ފޯމެޓު	PDF	
3	ޓާރމްސް އޮފް ރިފަރެންސް މުއްދަތު ހަމަވާ ތާރީޚް	8/24	
4	ސާދާ ޚުލާސާ ހިމަނާފައިވާ ސަފްހާ ނަންބަރު	xx	
5	ޓާރމްސް އޮފް ރިފަރެންސް ހިމަނާފައިވާ ސަފްހާ ނަންބަރު	255	
6	އިދާރާތަކާ ދެ ބައްދަލުވުން ހިމަނާފައިވާ ސަފްހާ ނަންބަރު	28	
7	މަޝްވަރާގެ ބައްދަލުވުން ހިމަނާފައިވާ ސަފްހާ ނަންބަރު	100	
8	ތަން އަރާ ކުރުން ހިމަނާފައިވާ ސަފްހާ ނަންބަރު	256	
9	ތަނުގެ ކުރުމުން (އިންފްރާސްޓްރަކްޗަރ)ގެ ސަފްހާ ނަންބަރު	258	
10	ޑްރޯއިންގ އަދި އިންސްޓިޓިއުޝަން ހިމަނާފައިވާ ސަފްހާ ނަންބަރު:	129	
11	ރިޕޯޓުގައި ބޭނުންކުރި މަރުޖަޢުތަކުގެ ސަފްހާ ނަންބަރު	29	
12	ރިޕޯޓުގައި ކަމާބެހޭ ފަރާތްތަކާއި ކުރި މަޝްވަރާ ހިމަނާފައިވާ ސަފްހާ ނަންބަރު	187	
13	މިޓިގޭޝަން އަސަރު ފޮރާން މިންވަރު ބަޔާންކޮށްފައިވާ ސަފްހާ ނަންބަރު	199	
14	ބަދަލުގައި ކުރެވިދާނެ ކަންތައްތައް ބަޔާންކޮށް އެކަންކަމުގެ އަގާއި ފައިދާތައް ހިމަނާފައިވާ ސަފްހާ ނަންބަރު:	223	
15	މިޓިގޭޝަން ވިސް ގޮތުގެ އަސަރުތަކުގެ ކުރިކުރުމަށް އަގާއި ފައިދާތައް ބަޔާންކޮށްފައިވާ ސަފްހާ ނަންބަރު:	227	
16	ވޯޓަރ އެންސަރުން ބަދަލުތަކުގެ ފުރިހަމަ ބަޔާނާއި އެކަމުން ހިނގާނެ ގޮތް ކަނޑައަޅާފައިވާ ސަފްހާ ނަންބަރު:	240	
17	މި ރިޕޯޓު ތައްޔާރުކުރި ކޮންސަލްޓަންޓުންގެ އިތުރުން ރިޕޯޓު ހެދުމުގައި ބައިވެރިވި މީހުންގެ ލިސްޓު ހިމަނާފައިވާ ސަފްހާ ނަންބަރު	NA	
18	އަޕްޑޭޓް ކަރެކްޝަން ރިޕޯޓު ހުށަހެޅި ކަމުގެ ހެކި ހިމަނާފައިވާ ސަފްހާ ނަންބަރު	264	
19	އިދާރާގެ ކޮމިޓްމަންޓް ސިޓީ ހިމަނާފައިވާ ސަފްހާ ނަންބަރު:	xix	
20	ކޮންސަލްޓަންޓް ޑިކްލެރޭޝަންގައި ސޮއި ކޮށްފައިވާ ސަފްހާ ނަންބަރު:	xviii	
21	އިދާރާގެ ޑިކްލެރޭޝަންގައި ސޮއި ކޮށްފައިވާ ސަފްހާ ނަންބަރު:	xix	
22	މަޝްވަރާ ކުރިއަށް ގެންދިޔުމަށް ސަރުކާރުގެ ކަމާބެހޭ އިދާރާއިން ދޫކޮށްފައިވާ ލިޔުން ހިމަނާފައިވާ ސަފްހާ ނަންބަރު	256	

މި ފޯމާއެކު ފުރިހަމަކޮށްފައިވާ އީ.އައި.އޭ ރިޕޯޓު އެޕްރޫވްކޮށްދެއްވުން އެދެމެވެ.

އިދާރާގެ ނަން: The Hawks Pvt Ltd

ތާރީޚް: 13th March 2024

ސޮއި:

The Hawks Private Limited • Republic Of Maldives
The Hawks

އިދާރީ ބޭނުމަށް

ރިޕޯޓު ރިފަރެންސް ނަންބަރު: ---------- ތާރީޚް: ----------

ރިޕޯޓު ފުރިހަމަކަން މުރާޖަޢާކުރުމަށް ޑޮކިއުމަންޓް ބަލައިގަތީ ☐

ނަން: ---------- ސޮއި: ----------

ރިޕޯޓު ފުރިހަމަކަން މުރާޖަޢާކުރުމަށް ބޭނުންވާ އިތުރު މަޢުލޫމާތު މަޝްވަރާ ކުރުމަށް އިދާރާއަށް ފޮނުވާ ☐

ނަން: ---------- ސޮއި: ----------

ހުއްދަދެއްވި ފަރާތް

ނަން: ---------- ސޮއި: ----------

March 2024

Proponent:
The Hawks Pvt. Ltd.

ENVIRONMENTAL IMPACT ASSESSMENT FOR PROPOSED DEVELOPMENT OF THE HAWKS OFFICE COMPLEX AT LOT 11769, HULHUMALE'

Consultant:
Mahfooz Abdul Wahhab (Lead)
Ibrahim Rashihu Adam

ECO-TECH
CONSULTANCY

I. TABLE OF CONTENTS

II. LIST OF TABLES

III. LIST OF FIGURES

IV. CONSULTANTS DECLARATION

We hereby declare that the statements made in this EIA report are true, complete and correct to the best of our knowledge and available information at the time of writing the report.

Name: Mahfooz Abdul Wahhab (Lead Consultant)

Date: 13th March 2024

Sign:

Name: Ibrahim Rashihu Adam (Co-Consultant)

Date: 13th March 2024

Sign:

V. LETTER OF COMMITMENT AND DECLARATION OF PROPONENT

بسم الله الرحمن الرحيم

THE HAWKS PRIVATE LIMITED
REG: (C-109/2007)
H. Zoneyria, 7th Floor, Boduthakurufaanu Magu,
Male', Republic of Maldives, 20057

The Hawks Pvt Ltd
Think smart - Supply fast

Reference no: TH-AD020-2024

Mr. Ibrahim Naeem
Director General
Environment Protection Agency
Male'
Maldives

13 March 2024

Dear Mr. Naeem,

Re: Environmental Impact Assessment for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll

As per the requirements of the EIA regulation, we hereby confirm our commitment to implement the mitigation and monitoring measures according to what is proposed in the EIA report attached herewith.

Your sincerely

C-109/2007

Hassan Rifau
Chief Executive Officer

بسم الله الرحمن الرحيم

THE HAWKS PRIVATE LIMITED
REG: (C-109/2007)
H. Zoneyria, 7th Floor, Boduthakurufaanu Magu,
Male', Republic of Maldives, 20057

Think smart - Supply fast

Declaration of the proponent

As the representative of the proponent of the proposed development I guarantee that I have read the report thoroughly and that to the best of my knowledge all information provided here is accurate and complete. In addition, I confirm our commitment to making sure that the contractor implements all mitigation measures proposed in the present report and adhere to the monitoring schedule given.

Name: Hassan Rifau

Signature:

C-109/2007

Date: 13 March 2024

VI. ސާދާ ޚުލާސާ

މި ރިޕޯޓަކީ ހުޅުމާލޭގައި 10 ބުރީގެ އިމާރާތެއް އެޅުމުން ވެއްޓަށް ކުރާނެ ނޭދެވޭ އަސަރު ދެނެގަނެ، އެ އަސަރުތައް ކުޑަކުރަން ގޮތްތައް ދެނެގަތުމާއި އަދި އެ މަސައްކަތްތަކުން ކުރިއަށް ގެންދިއުމުން ވެއްޓަށް ކުރާނެ ނޭދެވޭ އަސަރު ދެނެގަނެ، އެ އަސަރުތައް ކުޑަކުރަން ގޮތްތައް ދެނެގަތުމަށްޓަކައި އެކުލަވާލައިފައިވާ ރިޕޯޓެކެވެ. މި ރިޕޯޓުގެ މައިގަނޑު ބައިތަކުގެ ތެރޭގައި ހިމެނިފައިވަނީ ރިޕޯޓުގެ ތައާރަފު، މަޝްރޫޢާ ގުޅުންހުރި ސިޔާސަތުތަކާއި، ގާނޫނު، ގަވާއިދު އަދި އުސޫލުތަކާއި، މަޝްރޫޢުގައި ހިމެނިފައިވާ ބައިތަކާއި މަޝްރޫޢު ކުރިއަށް ގެންދާ ގޮތުގެ ތަފްސީލު، މަޝްރޫޢު ކުރިއަށް ގެންދާ ސަރަހައްދުގެ މިހާރުގެ ހާލަތު ދެނެގަތުމަށްކުރެވުނު ބޭސްލައިން ސާރވޭތަކާއި ޖިއޮލޮޖީ އަދި އެ ސަރަހައްދުގެ މިހާރުގެ ހާލަތު، މަޝްރޫޢުން ވެއްޓަށް ކުރާނެ އަސަރުތައް، މަޝްރޫޢުގެ ބަދަލުގައި ކުރެވިދާނެ ކަންކަން، މަޝްރޫޢުގެ ސަބަބުން ވެއްޓަށް ކުރާނެ ނޭދެވޭ އަސަރުތައް ކުޑަކުރުމަށް އަޅާނެ ފިޔަވަޅުތައް، މި އަސަރުތަކާއި ކުޑަކުރުމަށް އަޅާނެ ފިޔަވަޅުތައް، ވެއްޓަށް ކުރާނެ ނޭދެވޭ ވެއްޓަށް އަންނަމުންދާ ބަދަލުތަކާއި ދެނެގަންނަން ގޮތުގެ ޕްލޭން އަދި ނިންމުމެވެ.

އަތޮޅުތެރޭން ލިބެންހުންނަ ހިދުމަތްތަކަށްވުރެ މާލޭ ސަރަހައްދުގައި ހިދުމަތްތަކުގެ ފެންވަރު ރަނގަޅުވުމުގެ ސަބަބުން، ރާއްޖޭގެ އަތޮޅުތަކުން މާލެއަށް މީހުން ޖަމާވެ، މާލޭގައި މީހުން ދިރިއުޅުމުން ޖާގައިގެ ދަތިކަމަކާ ދިމާވެފައިވެއެވެ. މާލޭގެ ބޮޑުތަކުގެ ދިރިއުޅުމަށް ހުޅުމާލޭ ކަމުގައި ވާތީ، ގޭގެ ސަރުކާރުން ބިން ދޫކުރުމުގެ ސަބަބުން ޚަރަދުކުރަން ބޭނުންވާ ގިނަ ކަރުދާސްތަކުގެ ބުރަ ފަސޭހަވާނެއެވެ. މިގޮތުން ވިޔަފާރި ފަދަ ކަންކަމަށް ހުޅުމާލޭގައި ޖާގަ ހޯދުން މުހިންމު ކަމަށް ވެއެވެ. މިގޮތުން މި އީ.އައި.އޭ ގައި ކުރެވުނު ދިރާސާތަކުގެ ނަތީޖާއިން ވަނީ މަޝްރޫޢު ކުރިއަށް ގެންދިއުމަށް ހުއްދަ ދޭން ފެންނަކަމަށެވެ.

މި އީ.އައި.އޭގައި ކުރެވުނު ދިރާސާތަކުން 10 ބުރީގެ އިމާރާތް އެޅުމަށް ހަމަޖެހިފައިވާ ސަރަހައްދުގެ ވަށައިގެން ކޮންމެވެސް ދެނެގަނެވިފައެވެ. އަދި މި ސަރަހައްދުގައި އޭގެ ހުރި މިންވަރަކާއި، ދުއްވާ ތަކެތި ދިރުންތަކާ މިންވަރު ފެނޭ ބޮޑުނުވެއެވެ. މި ރިޕޯޓުގައި ބަދަލުގައި ކުރެވިދާނެ ކަންކަމުގެ ތެރެއިން ވަކިވަކިން މަޝްރޫޢުގެ ނުކުތް ސަރަހައްދު ބަލާލައި ހިމެނޭ ގޮތުން ހުރިކަމާއި، އެހެން ބަދަލުކަމުގައި މަޝްރޫޢު ހިންގައިގެންދާއިރު އިމާރާތުގެ ފައުންޑޭޝަން އެޅުމުގައި ބޭނުން ކުރުވާނެ އޮޅުނުރަން ގޮތްތަކާއި، ފުރަތަމަ ފަހު ވާރޭފެން ބެލުން ހިންގާ ގޮތްތަކާއި އިމާރާތުގެ ނަގާލުމުގެ ގޮތްތަކާއި ވެއްޓަށް ކުރާނެ ނޭދެވޭ އަސަރުތައް ކުޑަކުރުމުގެ ގޮތްތަކެވެ.

މި މަޝްރޫޢުގެ ސަބަބުން ތިމާވެއްޓަށް ކުރާނެ އެންމެ ބޮޑު ނޭދެވޭ އަސަރަކީ ކޮންސްޓްރަކްޝަން ޒޯންގައި އިމާރާތްކުރާ ސަރަހައްދުގެ ވައި ނުސާފުވުމާއި، މިސަރަހައްދުގައި އަޑުގަދަވުމުގެ ސަބަބުން އާއްމުންނަށް ދިމާވާނެ ދަތިތަކެވެ. އަދި މަސައްކަތް ކުރިއަށް ދާއިރު މިސަރަހައްދުގެ މަގުތައް ބަންދުވުމުގެ ސަބަބުން ޓްރެފިކް ބާރުބޮޑުވެ އުނދަގޫތަކެއް ކުރިމަތިވާނެ ކަމަށް ފާހަގަ ކުރެވެއެވެ. މީގެ އިތުރުން އޮޕަރޭޝަނަލް ފޭސްގައިވެސް މިސަރަހައްދުގެ ޓްރެފިކް ފްލޯ އިތުރުވާނެކަމަށް ލަފާކުރެވެއެވެ. މި އަސަރުތަކަށް ކުޑަކުރުމަށް އަޅާނެ މައިގަނޑު ފިޔަވަޅު ތަކަކީ، ހިރަފުސް އުދުހުން މަދުވާނެ ގޮތަކަށް މަޝްރޫޢުގެ މަސައްކަތް ކުރުމާއި، ވެހިކަލްތައް ރަނގަޅަށް މެއިންޓެއިން ކުރުމާއި، ބޭކާރުގޮތުގައި [illegible] ވެހިކަލްތައް ބަންދުކުރުމާއި، މަގު ބަންދުކުރާ ކަހަލަ މަސައްކަތްތައް ޓްރެފިކް ބޮޑުނޫން ގަޑިތަކަށް ހާއްސަކުރުމާއި، ތެޔޮ އަދި ކެމިކަލް އުފުލުން އަދި ބޭނުންކުރުމުގައި ހުރިހާ އުސޫލުތަކަށް ސަމާލުކަން ދިނުމާއި، ހާދިސާއެއް ހިނގައިފިނަމަ އެކަން ހައްލުކުރުމަށް ޗީޒު ތައްޔާރަށް ބެހެއްޓުމާއި، މަސައްކަތްކުރާ މީހުން ސޭފްޓީ ވަސީލަތްތައް ބޭނުންކުރުމާއި، މަޝްރޫޢުގެ ހުރިހާ މަރުހަލާއެއްގައި [illegible] އުފެދޭ ކުނި މެނޭޖު ކުރުމެވެ.

މި ރިޕޯޓުގައި ބަޔާންކޮށްފައިވާ ގޮތުން ކުޑަކުރުމަށް އަޅަންޖެހޭ ފިޔަވަޅުތަކާއި އެއްގޮތަށް މަޝްރޫޢުގެ މަސައްކަތް ކުރިއަށް ގެންގޮސްފިނަމަ، މަޝްރޫޢުގެ ސަބަބުން ލިބޭ ގެއްލުމަށްވުރެ ފައިދާ ބޮޑު ކަމަށް ފެންނާތީ، މަޝްރޫޢުގެ މަސައްކަތް ކުރިއަށް ގެންދިއުން އެންމެ ރަނގަޅުކަމުގައި ފެނެއެވެ.

VII. EXECUTIVE SUMMARY

The purpose of this EIA is to critically analyse and assess the potential environmental impacts associated with the proposed development of a 10-storey office building and analyses the solutions and preferred alternatives as well as mitigation measures to minimize any negative impacts whilst trying to derive the maximum positive impacts from the project.

The centralization of capital city of Maldives, Male' over the past years has led to the immigration of locals from outer Atolls to Male', where the basic necessities are inefficient. As a result, Male' is now one of the most congested cities in the world. In order to provide a solution for this, Hulhumale' reclamation project was initiated in 1997, the official inauguration of the city occurred in 2004. Reclamation of 188 ha of land of Hulhumale' phase 1 was completed on 2002. The city has become home to some major commercial developments. Hulhumale' phase 1 was developed with an open space index of 2.50, to ensure a healthy lifestyle. Including parks, green strips and open sports areas, Hulhumale' provides a total of 50,000 sqft of open space areas.

One of the key objectives of hulhumale development is to release pressure in Male and to build a strong commercial base. The advantages of Hulhumale over Male City include its location close to international airport connected by land, availability of land and well-planned developments etc. Also, Hulhumale is being developed in a sustainable way, which means that it is expected to have a lower environmental impact than Male city. As a result of these factors, Hulhumale is increasingly being seen as the Maldives's premier commercial hub. The government is committed to developing Hulhumale into a world-class business destination, and a number of major companies have already invested in the city.

The Proponent of the proposed project has acquired the LOT 11769 in Hulhumale' and intends to construct 10-storey commercial building on the land which will be used to run the office operations of the proponent and for commercial purposes in the form of lease agreements

The major regulatory requirements for the project involve obtaining the EIA decision statement to go ahead with the project as per the EIA regulation, following with the legislations pertaining to building works, waste management and other utility service provision. In order to assess the existing environment of the project site, various aspects were studied under the EIA. Some of them are, air quality, noise, socioeconomic environment, traffic and water quality. Additionally, this study also involved identification of alternative options in place of the proposed development. The considered options were no project scenario, moving project location and alternative types of foundation renewable energy integration and groundwater recharging option from excess rainfall.

Air and noise pollution arising specially from vibrations, operation of heavy machinery as well as disturbances on the traffic flow due to road blocks are the most significant negative impact which would arise during the construction phase of the project. Additionally, during the operational phase, it is anticipated that there will be increase in traffic flow in the area while also improvement on landscape and scenery of the location. Major mitigation measures proposed in the construction phase include measures to take dust suppression actions such as spraying water on ground, ensuring shortest vehicle route in mobilization, vehicles are maintained properly, avoiding unnecessary use of vehicles, planning road closure in such a way that it wouldn't over burden the traffic, following oil and chemical handing procedures, having emergency spill clean-up crew at site and following best practices in waste management at all phases of the project.

The socioeconomic benefits during the operations far outweigh the negative impacts. It is expected that the proposed development will provide convenient opportunities for shoppers in Hulhumale' which will directly benefit for the proponent and the communities living in the area. Therefore, it is recommended to proceed with the construction of 10 storey office building as proposed by taking necessary mitigation measures prescribed in the report.

1. INTRODUCTION

1.1 Structure of the EIA

This Environmental Impact Assessment (EIA) addresses the potential impacts of the proposed development on the physical, biological, environmental and socio-economic aspects of the development area in addition to providing safeguards to reduce any environmental effects.

In addition to forming a basis for the assessment and approval of the proposed project, this EIA provides the community and government authorities with information on all aspects of the proposal. The EIA has been divided into following sections;

- **Section I - III**: CONTENTS- Provides hyperlinks to various sections, figures and tables of the EIA report.
- **Section IV - V**: DECLARATIONS- Provides the Proponent and Consultant's declaration for the EIA report.
- **Section VI - VII**: EXECUTIVE SUMMARY- Provide a brief non-technical summary of key finding of the EIA report.
- **Section 1**: INTRODUCTION- Provides an outline of the structure and purpose of the EIA as well as objectives of the proposed development.
- **Section 2**: METHODOLOGY- Describes the detailed methods used for data collection on the existing environment and baseline conditions.
- **Section 3**: STATUTORY REQUIREMENTS- Outlines the relevant legislative requirements pertaining to the proposed project.
- **Section 4**: PROJECT DESCRIPTION- Describes the proposed development in detail.
- **Section 5**: EXISITING ENVIRONMENT- Describes the present conditions of the physical components of the study area and sets baseline conditions.
- **Section 6**: STAKEHOLDER CONSULTATION- Provides details on the consultation process and parties consulted for this study.

- **Section 7**: POTENTIAL IMPACT ANALYSIS- Describes the prevailing environmental characteristics and constraints of the site and locality being investigated and an assessment of the potential environmental impacts associated with the proposed development.
- **Section 8:** OPTIONS ASSESSMENT- Discusses all the available alternatives for the project and justifies the preferred option.
- **Section 9:** MITIGATION MEASURES- Outlines the mitigation measures that would be implemented to reduce any potentially adverse impacts.
- **Section 10**: ENVIRONMENTAL MONITORING- Outlines the environmental management monitoring parameters that would be used to monitor the changes.
- **Section 11**: JUSTIFICATION AND CONCLUSION- The conclusions drawn from the proposed project and impact analysis with the justification of the preferred options.
- **Section 12**: ACKNOWLEDGEMENTS- Highlights the parties which had contributed to the preparation of this EIA report.
- **Section 13**: APPENDICES- Supporting documents and information are provided as appendices to this EIA.

1.2 Project Objectives

The primary objective of the proposed project is to construct a 10-storey office building at LOT 11769, Hulhumale Phase 1

1.3 Need for the Project

Hulhumale is one of the most, if not the most developing part of the Greater Male Region and it continues to be a hub of real estate economic activities from both government and private investors. Therefore, it is understood that the demand for housing and economic ventures in Hulhumale is exponentially increasing.

The hawks Pvt Ltd (proponent) has acquired the LOT 11769 in Hulhumale' The proponent wishes to construct 10-storey commercial building on the land which will be used to run the office operations of the proponent and for commercial purposes in the form of lease agreements.

1.4 Summary of Impact Assessment Methodology

The approved ToR was issued on the 14th February 2024 (the approved ToR is attached in appendix section Appendix C) upon submission of the EIA application form.

Based on the approved ToR the proponent and the consultants have conducted a risk-based environmental review as part of the planning process. Data has been drawn from a wide range of sources, including existing similar project EIA reports, baseline data, consultations with stakeholders, existing legislations, professional judgement and expertise of the consultants. Impacts were identified based on the locations of the project components as well as type of service to be provided. The detailed impact assessment methodology is described under chapter 7.

1.5 List of similar project EIAs reviewed

As part of relevant literature review for impact prediction as mentioned in the above section the following project EIAs were reviewed;

- EIA for the Proposed Construction of 08 Storey Commercial Building at Lot No. 10318, Hulhumale Phase 1, Kaafu Atoll
- EIA for for the Proposed Apollo 1000 Housing Units Development Project at Hulhumale' Lot N3-55B, Kaafu Atoll
- EIA for the Proposed Apollo 1000 Housing Units Development Project at Hulhumale' Lot N3-55C, Kaafu Atoll
- EIA for development of 05 storey building in Munich Villa
- EIA for development of 13 storey building in G.Dailywork
- EIA for development of 10 storey bilding in G.Ottaru
- EIA for development of 11 storey building at H.Hithigasdhoshuge

- EIA for construction of Villa College south wing tower at Ma. Male' Higher Education School

1.6 Purpose of this EIA

The purpose of this EIA is to critically analyze the environmental and socio-economic impacts which may arise due to the construction and operation of the proposed project. After analyzing the impacts, it would be then possible to suggest proper mitigation measures to prevent/reduce any negative impacts and to enhance any positive impacts. The study involves evaluation of baseline conditions, prediction of the likely impacts, stakeholder consultation and design mitigation measures.

1.7 The EIA Process

The EIA process in the Maldives is coordinated by the Environmental Protection Agency (EPA) of the Maldives in order to ensure that environmental considerations are included in decisions regarding projects which may have an adverse impact on the environment.

The first step in the process involves screening (for the projects that may have significant impacts on the environment which are listed as projects requiring an EIA under appendix D of the EIA regulation 2012, an EIA application shall be provided to EPA and upon review EPA will call for the scoping meeting) of the project to determine whether a particular project warrants preparation of an EIA. Based on this decision, the EPA then decides the scope of the EIA which is conferred to the project proponents, the consultants as well as any relevant stakeholders to the project at a scoping meeting. A document ideally encompassing the issues and impacts that have been identified during the scoping meeting will then be issued known as the Terms of Reference (ToR). The consultant then prepares the EIA in accordance with the ToR and/or the range of issues identified during the scoping process. Once the findings of the EIA has been reported to the EPA, it gets reviewed following which an EIA Decision Statement (DS) is issued to the proponent who is responsible for implementing the project according to the DS and undertake appropriate environmental monitoring if required and report to the EPA.

1.8 The Consultant

The EIA was prepared by Eco Tech Consultancy - an environmental and information technology consultancy firm registered in the Maldives on 2021. The company specializes in providing environmental solutions to clients. However, the company's services are not just limited to Environmental Impact Assessment, Environmental Monitoring Reports and Environment Management Systems, with their partners they provide land surveying and IT solutions as well. Within the short period Eco-Tech Consultancy has completed a total of 46 assignments that includes Environmental Impact Assessment reports, Environmental Monitoring Reports and RO Plant registrations.

The following registered EIA Consultants of Eco-Tech Consultancy were involved in the preparation of this EIA report;

- Mahfooz Abdul Wahhab (lead consultant), Consultant registration no: P22/2016
- Ibrahim Rashihu Adam, Consultant registration no: P06/2017

1.9 The Proponent

The proponent for the project is The hawks Pvt Ltd.

1.9.1 Contact details of Focal Point of the Proponent

Name: Zhao Ming

Designation: Engineer

Mobile No: 7966387 / 7787964

2. METHODOLOGY

This chapter describes the EIA report formulation method and the methods used to collect and analyze site-specific baseline data along with the potential limitations and uncertainty in data collection methods.

2.1 EIA report formulation

The three main guiding principles that was utilized in the formulation of this EIA report was the Environment Impact Assessment Regulation 2012, the approved Terms of Reference, and the EIA writing guideline 2012. Supporting principles were adopted from the UNEP EIA Training Resource Manual 2002 and AS/NZS ISO 3100:2009 Risk management principles and guidelines. Lastly project information was used in determining the locations for baseline studies.

The contents in the chapters of this EIA report were as per the appendix E of the EIA regulations 2012 and the approved ToR. The EIA layout and structure is as per the EIA writing guideline. The baseline data which was collected in accordance with the ToR and EPA data collection guidelines as much as possible. The detailed methodology employed for baseline data collection is described in the following section 2.2.

All the legislation pertaining to the proposed development was studied through the published legislations under the Maldivian governments gazette and relevant government bodies' websites.

Stakeholder consultations were done via public hearing for the EIAs that require public consultations and through face-to-face meeting or online meetings or via email communications.

The potential impacts were identified and analysed as per the method described in chapter 7.

Alternative were analysed based on its technical viability, economic feasibility, legal compliance, environmental practicability and social acceptability.

Preferred mitigation measures were determined based on the most significant impacts, where the mitigation measures would mitigate the adverse impacts or amplify the positive impacts further.

Similarly monitoring parameters were also determined based on the most significant impacts that could have adverse impacts to the environment.

Conclusion was justified by comparing the project need and the envisaged environmental impacts associated with the project.

2.2 Site-specific baseline data collection methods

All site-specific data was collected on 18th February 2024. The climatic conditions at the sampling times were gentle breeze winds from ENE at speeds averaging 8.7 Knots. Humidity was at 78% with 36% cloud cover with scattered clouds.

2.2.1 Water quality

2 groundwater samples were collected. 1 groundwater sample was taken from an existing well and 1 from a dug well on project site during the survey. The groundwater table was measured using a measuring tape during low tide (almost 152.4 cm below MSL). The sampling locations and their respective GPS coordinates are provided in Table 2 and Figure 3. Samples were collected in 500 mL plastic and 300 mL glass bottles. Before collecting the sample, the bottles were first rinsed with the sampling water three times. Samples for microbial testing was collected in two 100 mL sterilized Theobags. Before collecting the microbial sample, each time alcohol was applied to the sampler's hand to minimize cross contamination. Groundwater samples were collected on 18th February 2024 between 14:40 to 14:50 hours.

Samples were then sent to Maldives Water and Sewerage Company's (MWSC) water quality assurance laboratory in an ice box for testing.

2.2.2 Noise

Noise level was measured using a sound meter. Sound was measured for 1 minute at the desired location and the maximum and minimum was recorded on 18th February 2024 between 14:30 to 16:30 hours (Refer to Table 2 and Figure 3 for sampling locations and respective GPS coordinates).

2.2.3 Structural Environment

The structural environment of the proposed project site was visually inspected and qualitative notes were taken on the type, number and quality of existing infrastructure.

Figure 1: Shows all adjacent building locations surveyed near project area.

2.2.4 Traffic Flow

To give an indication of the traffic flow around the project site, the number of vehicles passing through a given point at the road was recorded for a given duration. As such an imaginary line (Figure 2) was drawn across the road on 2 roads, Fithroanu Magu and Orchid Maa Hingun. When a vehicle crosses the line, it was tallied. Likewise, the number of the vehicles passing was noted for a period of 30 minutes. Vehicle number was recorded between 14:35 to 15:05 hours. (Refer to Table 2 and Figure 3 for sampling locations and respective GPS coordinates).

Figure 2: Location for traffic count near the project area

2.2.5 Air Quality

Air quality was measured using a hand-held temperature / humidity / PM2.5 / PM10 / HCHO / TVOC / CO / CO_2 / AQI Air Detector. To avoid any bias from the surveyor the meter was left at each site for at least one minute to acclimatise before taking the reading. Outdoor and indoor readings were recorded on 18th February 2023 between 14:30 to 16:30 hours (Refer to Table 2 and Figure 3 for sampling locations and respective GPS coordinates).

2.2.6 Socioeconomic Environment

The most recent socio-economic data was obtained from HDC (Urbanco), Maldives Population and Housing Census 2022 and 2014, which was used to describe the demography and possible social impacts.

2.2.7 Hazard Vulnerability

The vulnerability of the proposed project site to storms, cyclonic winds, storm surge, seismic activity and tsunami were determined based on the disaster risk profile for Maldives 2006 and multi-hazard risk atlas of Maldives 2020. Risk of flooding was determined by analysing available rainfall data from the nearest meteorological station.

2.3 Limitations in data collection methods

There are several sources of uncertainty and limitations in any data collection method, some of which we aren't even aware of it. Nonetheless, the possible sources of uncertainty and limitations for the methods used to collect data for this EIA is described below.

Firstly, the water quality tests were not done on-site, therefore the results may not reflect the actual physical parameters of water for example temperature.

Air quality and noise measurements were taken only at one time. While these parameters may change depending on the time and the season. Furthermore, the air quality reference ranges to which the collected data are compared to are for averages or exceedance for a set time (1 hour or 8 hour) but the readings that we have taken is a one time reading.

Noise measurements were taken for a short period of time and during daytime only. The noise levels may be very different at night time.

During heavy traffic, vehicles might get unaccounted for in-between the time of recording and observing of incoming and outgoing vehicles.

Data for income situation and distribution on an island level was not available. So had to use atoll level information to estimate the income status of island. Hence, the obtained representation of income situation and distribution for the island might not reflect the actual situation.

2.4 Data gaps

The most contrasting data gap is the lack of long-term site-specific data and the data that was taken under this EIA was also a snapshot of the full environmental setting as can be seen evidently from the above section. Namely, these data gaps include; lack of site-specific hazard risk analysis, climatic conditions, air quality and noise at different time periods.

2.5 Uncertainty in data

The first and foremost uncertainty in any data arises from the data collection method as it is impossible to devise a sampling method that is devoid of error. Hence any physical, chemical or biological parameter that is measured will have an error or uncertainty from the data collection method itself as no method by nature is 100% accurate. Additional uncertainties to the sampling method arises from the instrument used, these include the instruments resolution, accuracy and precision errors. Thirdly the human error that will be imposed when a person measures a parameter using a specific sampling method by using a particular instrument. Other factors include the time and environment.

Some of the results presented in this report are given with a confidence interval. The confidence interval is calculated at 95%, which means that we are 95% confident that the true value lies within the range given. Uncertainty could be calculated like this for certain parameters as some of the results provided are from third party data which does not have information of accuracy and precision. And in other cases, it is not possible to calculate as the measurements are only discreet data describing a varying parameter. In these types of cases the initial value obtained is given. Caution must be taken when using this type of data, as it is this type of data that usually warrants long-term studies.

2.6 Management of Uncertainties and Data Gaps

Due to the abovementioned limitations, data gaps and uncertainties, the following assumptions were made;

Table 1: uncertainties and data gaps in collected data and how it was managed

Data	Sources of Uncertainty	Data Gap	Assumption (how it was managed)
Hazard risk	Modelling errors due to imperfect understanding of the natural setting and lack of long-term data	No site-specific data	The available broadscale hazard risk analysis of the Maldives was used to determine the site-specific hazard risk at the proposed project site
Temperature, rainfall, wind	Equipment precision errors Human error	No site-specific data	Regional climatic conditions from the meteorological centre for wind, rain, temperature was assumed true for the proposed project location
Water quality parameters	Off-site testing Equipment precision errors Human error	Data lacking for both seasons	The tested water quality parameters (except for temperature) in the laboratory was assumed to be the onsite conditions.

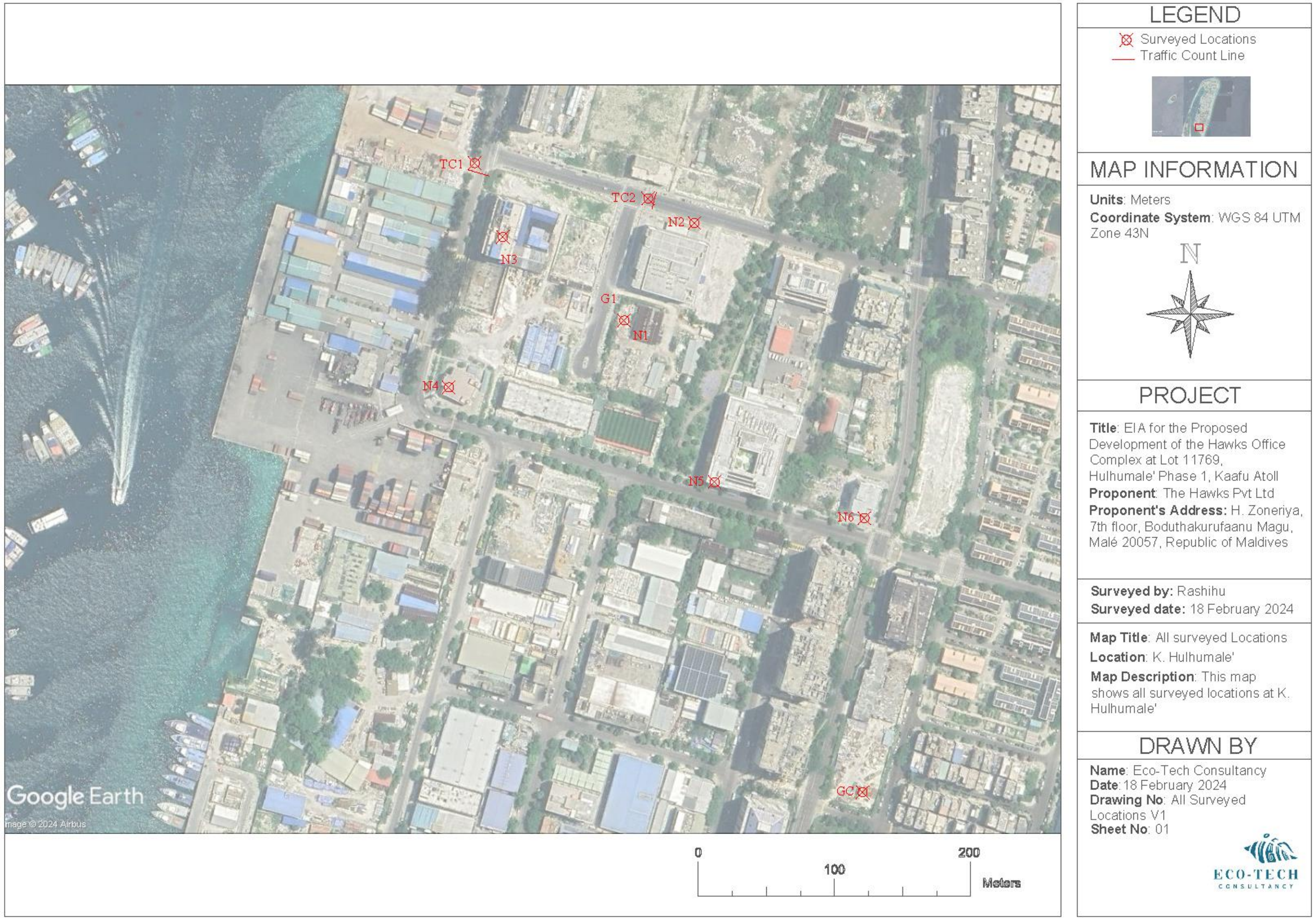
2.7 Geographic Coordinates for all sampling locations

All the sampling locations were geo-referenced using a GPS. The coordinates for all sampling locations are shown in Table 2 and Figure 3 below.

Table 2: Geographic coordinates for all sampling location at Hulhumale’ Phase I

Code	Type	Location	GPS Coordinates	
			Easting	Northing
G1	Ground water sample at location G1	(Project Construction site) Within the project site	337743.91	465809.08
GC	Ground water sample at location GC	(Control site) Near Almoza shop	337937.00	465457.00
N1	Refers to location N1 of Noise measurement	(Project Construction site)	337743.91	465809.08

		Within project site		
N2	Refers to location N2 of Noise measurement	(Near project site) Umar Zahir Building	337778.59	465895.12
N3	Refers to location N3 of Noise measurement	(Near project site) Marina View Apartments	337635.51	465901.07
N4	Refers to location N4 of Noise measurement	(Near project site) Masjid Al-Asdiqa	337609.62	465754.85
N5	Refers to location N5 of Noise measurement	(Near project site) Tree Top Hospital	337804.36	465700.69
N6	Refers to location N6 of Noise measurement	(Near project site) Aster shop	337931.21	465664.50
AQ1	Refers to location AQ1 of Noise measurement	(Project Construction site) Within project site	337743.91	465809.08
AQ2	Refers to location AQ2 of Noise measurement	(Near project site) Umar Zahir Building	337778.59	465895.12
AQ3	Refers to location AQ3 of Noise measurement	(Near project site) Marina View Apartments	337635.51	465901.07
AQ4	Refers to location AQ4 of Noise measurement	(Near project site) Masjid Al-Asdiqa	337609.62	465754.85
AQ5	Refers to location AQ5 of Noise measurement	(Near project site) Tree Top Hospital	337804.36	465700.69
AQ6	Refers to location AQ6 of Noise measurement	(Near project site) Aster shop	337931.21	465664.50
TC1	Refers to location TC1 of Traffic Count	Fithroanu Magu	337633.00	465930.00
TC2	Refers to location TC2 of Traffic Count	Orchid Maa Higun	337783.40	465905.08



Units: Meters
Coordinate System: WGS 84 UTM Zone 43N

Title: EIA for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll
Proponent: The Hawks Pvt Ltd
Proponent's Address: H. Zoneriya, 7th floor, Boduthakurufaanu Magu, Malé 20057, Republic of Maldives

Surveyed by: Rashihu
Surveyed date: 18 February 2024

Map Title: All surveyed Locations
Location: K. Hulhumale'
Map Description: This map shows all surveyed locations at K. Hulhumale'

Name: Eco-Tech Consultancy
Date: 18 February 2024
Drawing No: All Surveyed Locations V1
Sheet No: 01

Figure 3: sampling locations at K. Hulhumale' Phase I

3. STATUTORY REQUIREMENTS

This section describes the statutory requirements relevant to the proposed proposal. Section 3.1 describes all the relevant laws, policies and strategic action plans that must be complied to for this proposal. Section 3.2 describes all the pertinent regulations, section 3.3 all the guidelines and section 3.4 describe all the international conventions that the Maldives are a party to.

3.1 Laws, Policies and Strategic Action Plans

This section describes the applicable laws, policies and strategic action plans pertaining to the proposed development.

3.1.1 Environmental Protection and Preservation Act (4/93)

The Environmental protection and Preservation Act of the Maldives was enacted to protect the environment and its resources for the current and future generations. Relevant articles under this law pertaining to the proposed project are:-

- Article 2 states that the instructions for environmental protection will be given from the competent authority and everyone must respectfully follow these instructions;
- Article 3 states that all matters relating to environmental protection and preservation must be handled by the Ministry of Planning, Human Resource and Environment (MPHRE);
- Article 4 states that MPHRE must declare protected sites and species and formulate the regulations to manage them. If any other party wants to declare a protected site or species they must be registered in the MPHRE and managed according to regulations made by the Ministry;
- Article 5 states that any projects which pose significant impacts to the environment, an EIA report has to be made and submitted to the MPHRE. The projects which require an EIA and the regulation must be made by MPHRE;

- Article 6 states that if any project is found to cause significant adverse impacts, MPHRE have the right to stop the project;
- Article 7 states that any waste, oil or hazardous gas must not be dumped into any part of the Maldives, however, if strictly needs to be disposed it should be disposed of in an area designated by the Government. If such hazardous gas, waste or oil is to be disposed by combustion, it should be done in a way it does not impact human health and environment;
- Article 8 states that any hazardous waste must not be disposed into any part of the Maldives. Before trans-boundary transfer of such waste, approval must be taken from the Ministry of Transport and Communication by writing to the Ministry at least 3 months beforehand.
- Article 9 states that any party who violates this law or any regulation under this law is punishable to no more than MVR 100 million according to the offence. The fine will be applied by the MPHRE.
- Article 10 states that any offence to this law or any regulation under this law or any action resulting in environment damage, the compensation for such damages can be taken through judicial processes.

3.1.1.1 1st addendum to Environmental Protection and Preservation Act (4/93) law no 12/2014

Article 3 and 11 of the Environmental Protection and Preservation Act (4/93) of Maldives is amended as follows:-

Under article 3, all matters relating to environmental protection and preservation must be handled by the Ministry charged with implementation of environmental policy.

3.1.2 Law on General Public Services (4/96)

Under this law, the general public services are electricity, telephone, water and sewerage services. Relevant articles under this law pertaining to the proposed project are:-

- Article 3 states that any party can provide general public services only after getting registered in the competent authority and according to its regulations;
- Article 4 states that any public service must be provided after a contract agreement has been made between the service provider and the customer. The agreement must be made according to the regulations put forward by the competent authority;
- Article 5 states that a transfer of service between customers must be made only after a contract has been made between the customers according to the service providers regulations. If the customer fails to comply with the agreement, the service provider can discontinue service only after approval from competent authority;
- Article 7 states that the service provider can permanently discontinue its services according to regulation mentioned in article 3 of this law. However temporary discontinuation can be made after giving prior notification to the customers and according to the agreement made between the service provider and the customer;
- Article 8 states that the tariffs for the services must be approved from the competent authority prior to implementation. Further, any amendments to tariff structure also must be approved from the competent authority before implementation; and
- Article 9 states that any damage made to service provider's facilities by anyone, he can be charged with 10-year prison penalty or banishment. Further, any action against this law (excluding what is mentioned in article 9 (a) of this law) can be charged between MVR 100 to MVR 5000 by the competent authority.

3.1.3 Waste management policy

With the implementation of waste management policy 2015, the 2011 and 2007 policy is void. The waste management policy which came into effect on 2015 is to ensure that the Maldivians are well aware of the waste management techniques and maintains cleanliness as well as the natural aesthetics and clean air quality of the country is well maintained. Under this policy, all the inhabited islands need to implement a waste management plan and manage all the wastes generated from that island in accordance with that policy.

3.1.4 Waste management act (24/2022)

The waste management act came into force in 18th December 2022 with the main objectives of implementing sustainable waste management, establish waste management standards, minimize negative impacts from waste to the environment and human health. The act outlines the principles for waste management, roles and responsibilities of the relevant institutions.

3.1.5 Maldives Energy Act (18/2021)

The Maldives Energy Act was published on 11th October 2021 with the aims to regulating power production, power usage, electricity services, protecting the rights of customers, detailing the rights and responsibilities of service providers, upkeeping the quality of services, regulating power tariff rates, promoting renewable energy, facilitate sustainable development of the energy industry in a manner that is environmentally friendly, resilient to the impacts of climate change, facilitate reduction in GHG emissions, economically feasibility. Relevant notable articles under this law pertaining to the proposed project are:-

- Chapter 1 – Introduction. the following are some aspects highlighted under the chapter.
    - Energy sector policy:
        - Shall be formulated and gazetted.
        - All involved in electricity service provision shall adhere to it.
        - Policy shall be reviewed and revised in every 5 years.
    - Energy sector plan:
        - 10-year plan on the energy sector development shall be formulated.
        - All licensees for electricity service provision shall provide a plan on service provision to the Ministry.
- Chapter 2 relates to the Roles and Responsibilities of the institutions, under which the following are highlighted:
    - Responsibility of the Ministry:
        - Facilitation of electricity services at an affordable rate in all inhibited islands, facilitating the investments for the sector,

        - Provision of technical assistance to island councils,
        - Implementing the international commitments relative to the sector,
        - Formulation of regulations and ensuring sustainable levels of electricity services are received to all inhibited islands.
    - The Authority and Responsibility of the Regulator:
        - Enforcement of regulations,
        - Licensing,
        - Tarrif setting,
        - Monitoring and revision,
        - Regulating of service providers,
        - Formulating of standards relevant to the sector etc.
    - Roles and responsibilities of island councils.
    - Responsibility of other entities to provided assistance for the enforcement of the act.
- Chapter 3 is regarding the renewable energy. The following are discussed in the chapter
    - Ownership
    - Development
    - Target setting
    - utilising the space required for renewable energy
    - providing preference to renewable energy.
- Chapter 4 deals with petroleum and petroleum products. It details the following aspects regarding petroleum and petroleum products
    - Licensing and its relevant details
    - Quality Assurance
    - Stock Management
    - Environmental protection and general public health safety
    - Regulatory aspects for vessels carrying petroleum and petroleum product
- Chapter 5 deals with production of power and provision of its services, the following are some aspects highlighted under the chapter
    - Service provider and customer rights

  - Provision of services
  - Licensing
  - Responsibilities of service providers
  - Provision of services for personals with financial vulnerabilities
  - Monitoring
  - Inspections
  - Tariff settings
  - Application of services
  - Quality assurance
  - Termination of services
  - Emergency power cut
  - Vandalism and disruption of services
  - Ownership
- Chapter 6 deals with economising electricity and its efficient use, the following are some aspects highlighted under the chapter
  - Energy saving and its efficiency
  - Information collection
  - Formulation of regulation and guidelines
  - Energy efficiency certifications
  - Energy auditing
  - Annual energy report
  - Ill practices in electricity usage
- Chapter 7 highlights regarding the transition from previous legal framework of the energy sector.

3.1.6 Maldives Energy Policy and Strategy 2016

Maldives Energy Policy and Strategy 2016 consists of revised policies derived from Maldives Energy Policy and Strategy 2010. The 9 policies are reduced to 5 key policy statements.

- Strengthen the institutional and regulatory framework of the energy sector

- Promote energy conservation and efficiency
- Developing and enforcing standards for exhaust emissions for power plants, vehicles and vessels that use fossil fuel in order to improve air quality
- Increase the share of renewable energy in the national energy mix
- Improve the reliability and sustainability of electrical services and maintain universal access to electricity
- Devising means to reliably meet energy demands in a consistent manner assuring security and reliability of supply
- Improve the operational performance of service providers to manage the electrical power infrastructure
- Increase efficiency of the energy systems and quality of energy services provided
- Review and regularly implement electricity tariff adjustments
- Develop and update an integrated system management and expansion plan for utilities
- Increase national energy security
- Ensure environmentally safe and adequate storage, supply and distribution of fuel to meet the demand.

3.1.7 Water and sewerage Act (8/2020)

The water and sewerage Act was published on 05th August 2020 with the aims to provide safe water and sanitation services to the general public by implementing guidelines for providing water and sanitation service, operation and maintenance of water and sewer facilities, and other related guidelines. Relevant articles under this law pertaining to the proposed project are:-

- Article 5 states that, to provide the water and sanitation services entitled for every citizen of Maldives, it is the duty of the government to implement the following;
    - establishing facilities required to provide water and sanitation services sustainably
    - ensuring that safe water and adequate sanitation services are provided

  - overcoming any hindrance to provide water and sanitation service
  - establishing standards for water and sanitation service
  - ensuring that the water and sanitation service providers follow the set standards
  - researching and developing the water and sanitation sector
- Article 6 states that the water and sanitation policies shall be declared by the Minister as advised by the President. These policies shall be made available to the general public. All parties involved in the water and sanitation sector must fully comply with these policies.
- Article 7 states that Utility Regulatory Authority shall be responsible to implement this law.
- Article 8 states the duties of the Ministry in detail. These include drafting the polices, laws and regulations required to implement this law, establishing water and sanitation facilities in all inhabited Islands of the Maldives within 05 years of implementation of this law, ensuring that proper sewerage facilities are established on tourist and other industrial islands, and all the works to develop the water and sanitation sector.
- Article 9 states that the Council has the authority to declare the fees that could be taken from the water and sanitation service in accordance with the Utility Regulatory Authority and Governments policies and regulations. Additional responsibilities of the Council include; monitoring the third party water and sanitation service provider, monitoring environmental impacts due to water and sewer systems, providing information about water and sanitation service on the Island to the Competent Authorities, ensuring that enough water is available to the living population of the Island, and providing water and sanitation service via a licensed third party.
- Article 10 states the points that must be included in the third party agreement mentioned in article 9.
- Article 11 states the duties of Utility Regulatory Authority, which is to give licenses to all water and sewerage facilities in the Maldives and monitoring them.
- Article 15 states that the licensed all water and sanitation service providers must submit a plan to provider water and sanitation service annually with an implementation report

which specifies; (1) water quality, (2) lost water, (3) service interruption, (4) costs, (5) revenue generated, and (6) CSR activities.

- Article 18 states that the groundwater presents in Tourism, Industrial and Reclaimed Islands are protected.
- Article 19 states that the groundwater presents in Tourism, Industrial and Reclaimed Islands cannot be used for commercial purposes. For existing agricultural Island a period of 2 years must be given for them to install RO plants and for inhabited islands, RO plants must be installed for agricultural field larger than 10,000 m^2.
- Article 20 states that any activity that contaminates the ground water is prohibited. Exclusive of this clause is using fertilizer for agricultural purpose and installing septic tanks in households. The article further states that fuel and other chemicals must be handled properly such that spills do not occur and if a spill occurs, the proponent must be responsible for clean-up. Finally, it is prohibited to dispose water which contains fuel and chemicals from Engine maintenance to the sea.
- Article 21 states that dewatering must be done in accordance with the regulations made under this law.
- Article 22 states that it is prohibited to dispose brine into ground or wetlands. Further, mixing of permeate water and rain water must be done according to set guidelines of the Utility Regulatory Authority.
- Article 24 states that there must be 05 days of water stored in case of emergency by all the service providers. Emergency water storage must be allocated in reference to the living population on the island, available water, and land availability for water storage.
- Article 25 states that operating license for water and sanitation service must be issued after the EIA process.
- Article 27 states that power required for the operation of RO plants must be from renewable energy sources. However, a period of 05 years shall be given to existing RO plants for transition. Nonetheless during an emergency situation due to a disaster on in case of renewable energy system failure, power from Diesel generators could be used.

- Article 28 states that rain water must be included as much as possible in the provision of Desalinated water.
- Article 29 states that it is the duty of the water and sanitation service provider to do all works required to provide the service in the assigned region for them. Additional responsibilities include; providing reports to Utility Regulatory Authority, upgrading water and sewerage facilities according to new technology, providing the first house connection free of charge, and water testing to ensure quality of water.
- Article 30 states that the water and sanitation service provider reserved the right to prohibit certain substances being disposed into the sewer system, installing meters, and entering households and commercial places.
- Article 31 states that the water facilities on inhabited islands of the Maldives must be established in accordance with MFDA's regulations. Additional points under this article include; the established water systems must have the capacity to test for water quality and disinfect, and it is the responsibility of the building's owner to establish measure to manage pressure in tall buildings, if a license for providing water has already been issued to an inhabited Island a second RO plant by another party could be installed with the approval of the Utility Regulatory Authority.
- Article 32 states that the Ministry shall declare publicly the Islands which require an STP and duration for establishing STP's on these Islands. On the islands where the Ministry has declared that an STP is required, on these islands sewerage services must only be provided with an STP. However, during an emergency situation due to flooding, disposal of this storm water is allowed without the involvement of an STP. Additional points include; Disposing of water from dewatering to the sewerage network is prohibited and technical specification for sewerage facilities must be made by the Utility Regulatory Authority.
- Article 34 states that an agreement must be made prior to giving approval to any water and sanitation service provider and this agreement must be registered in the Utility Regulatory Authority.

- Article 35 states that all water and sewer systems in the Maldives must be operated after registering in the Utility Regulatory Authority.
- Article 36 states that water and sewer services in inhabited Islands of the Maldives must be given after taking the operating license from the Utility Regulatory Authority.
- Article 37 states that an exclusive operating license could only be given after getting the written approval from the president as advised by the Parliament if it is needed for the betterment of the country.
- Article 38 states the requirements of the operating license, these include; operation and maintenance of water and sewer systems in accordance with the regulations set by the Utility Regulatory Authority, implementing the business plan mentioned in article 41(a-2), reporting, and fulfilling other requirements set by the Utility Regulatory Authority.
- Article 41 states that the procedures for obtaining the operating license must be publicly made available. The article further details the information the service provider must submit while applying for the operating license.
- Article 42 states that the fees for water and sewer for inhabited Islands will be declared by the Utility Regulatory Authority.
- Article 43 states that the service provider must submit a performance report to the Utility Regulatory Authority, Council, and Ministry annually
- Article 44 states that customers have the right to report any complaints regarding the service provider to the Utility Regulatory Authority.
- Article 45 states that the Utility Regulatory Authority has the right to investigate the service provider of any misconduct or even if the Utility Regulatory Authority deems necessary.
- Article 60 states that if there are any overlaps with other laws regarding water and sanitation, this law shall take precedence.
- Article 61 states that with the implementation of this law, the articles pertaining to water and sanitation services under the law on general public services (4/96) is void.

3.1.8 Utility Regulatory Authority Law (26/2020)

This Utility Regulatory Authority Law was drafted to establish an Authority that will oversee the general public services given in the Maldives. The specific objectives of this law include;

- Ensure that the general public services given in the Maldives are provided sustainably
- Ensure that general public services are given efficiently and with minimal damage to the environment
- Ensure that general public services are given at adequate standards
- Create a competitive environment to develop general public services in the Maldives
- Draft and implement regulations on general public services
- Regulate the general public service providers
- Create awareness on the rights of the customers and the service providers

This law has 16 chapters. Chapter 1 states the objectives of the law, Chapter 2 states the responsibilities of the Utility Regulatory Authority, Chapter 3 states how the board of directors are to be established and their responsibilities, Chapter 4 states the organizational structure of the Utility Regulatory Authority, Chapter 5 states the responsibilities of the Minister, Chapter 6 states details about operating licenses, Chapter 7 states how tariffs are to be implemented, chapter 8, 9 and 12, 13, 14 sates the rights of the Utility Regulatory Authority in relation to monitoring service providers, Chapter 10 states the discipline that the Utility Regulatory Authority must have, Chapter 11 states guides on conflict resolution, Chapter 15 states the budget and reporting by the Utility Regulatory Authority, Chapter 16 states the changes in existing institutional framework such as the transfer of Maldives Energy Authority and EPA Water, Sanitation and Waste section to the Utility Regulatory Authority. Relevant articles under this law pertaining to the proposed project are:-

- Article 4 states all the responsibilities of the Utility Regulatory Authority. The most important responsibilities include; giving operating license to service providers, implementing all laws and regulations pertaining to general public services and ensuring that the service providers abide by them, implementing tariff, drafting and implementing regulation and guidelines for providing general public services.

- Article 23 states that a license must be obtained in order to provide any general public service in the Maldives.
- Article 24 states that the license for general public services will be given by the Utility Regulatory Authority.
- Article 25 states that an exclusive operating license will only be given after getting the written approval from the president as advised by the Parliament if it is needed for the betterment of the country.
- Article 29 states that the fees taken for general public services must be as per the approved tariffs from the Utility Regulatory Authority.
- The Service providers must strictly follow the directions of the Utility Regulatory Authority as mentioned in chapters 8, 9, 12, 13, and 14.

3.1.9 The National Water and Sewerage Strategic Plan (The NWSSP 2020-2025)

The NWSSP 2020-2025 is an action plan made under the article 14(a) of Water and Sewerage Act (8/2020). The strategies and targets included in the action plan is derived from the National Strategic Action Plan 2019-2023 endorsed by the Government in 2019. The vision of this action plan is to ensure equitable access to safe water and improved sewerage serviced for all. The mission is to provide efficient, effective and reliable water supply and sewerage services, promote conservation and management of the water resources, and to develop sector capacity for sustainable management of resources and services. The action plan has 6 policy goals with its associated target in order to reach the vision. These are;

- Policy 1: Ensure access to safe water supply and adequate sewerage services
    - Target 1.1: By 2020, Water and Sewerage Act is ratified
    - Target 1.2: By 2020, Utility Regulatoryy Authority (URA) for integrated utility services is functional

    - Target 1.3: By 2021, Water and Sanitation coordination committee is functional
    - Target 1.4: By 2023, all water and sewerage utility providers have an operating license
- Policy 2: Adopt cost-effective and environment-friendly water and sewerage infrastructure
    - Target 2.1: By 2020, a standard mechanism to foster private sector investment in the water and sanitation sector will be in effect
    - Target 2.2: By 2023, all inhabited islands, will have access to safe water supply and sewerage facilities
    - Target 2.3: By 2023, 30% of energy consumption for water and sewerage facilities across the Maldives will be met with renewable energy
- Policy 3: Build sector capacity in water resources, water supply and sewerage services
    - Target 3.1: By 2023, at least 60% of technical staff in utility service providers are licensed (/ By 2023, all technical staff operating and maintaining the water and sewerage facilities will have at least certificate level 3 qualification and will be licensed)
    - Target 3.2: By 2023, at least 40 engineers will be trained in water and sanitation related field
    - Target 3.3: By 2023, at least 30% of all employees working in water and sewerage facilities in each island shall be women
    - Target 3.4: By 2022, collaborative partnership arrangements will be made with at least 3 local/international educational institutes for capacity building of water and sewerage sector programmes and services
    - Target 3.5: By 2024, two (2) staff at each island or city council will be trained for overall utility operational services, governance and best practices
- Policy 4: Strengthen advocacy and awareness programs on water resources, water supply and sewerage
    - Target 4.1: By 2022, public perceptions on safe water and sanitation practices improved by 33% compared to 2018 levels
    - Target 4.2: By 2023, at least 40% of households phased out single-use bottled water use

  - Target 4.3: By 2023, WASH awareness programs targeting to island functionaries, front line workers, CBOs and NGOs that are active in all island communities are carried out
- Policy 5: Protect and conserve natural water resources
  - Target 5.1: By 2023, water resource conservation and management plans are implemented in all inhabited islands.
- Policy 6: Build flood resilient island communities
  - Target 6.1: By 2021, identify and map flood prone islands
  - Target 6.2: By 2022, develop and enforce design criteria's and guidelines for flood mitigation

3.1.10 Decentralization Act (7/2010)

This act was drafted in accordance to the article 8 of the Constitution of Maldives in order to declare the Institutions required to decentralize the governing of Maldives. The Institutions that would be established under this Act are; Local Councils, Atoll Councils, and City Councils. The Act specifies the jurisdiction of all of these Institutions. Relevant articles under this law pertaining to the proposed project are:-

- Article 8(b) states that it is the duty of the Atoll Council to inform the project proponents, of the general public's suggestions and concerns for any developmental projects within its jurisdiction.
- Article 8(g) states that it is the duty of the Atoll Council to allocate land for investments that promote social and economic growth within its jurisdiction in accordance with the built environment and any other relevant regulations.
- Article 23(c) states that it is the duty of the Local Council to implement developmental projects that the government assigns to the Council.
- Article 23(d) states that is the duty of the Local Council to properly monitor and report on developmental projects that are being carried out on the Island to the respective Ministry.

- Article 23(i) states that is it the duty of the Local Council to allocate land for developmental projects as advised by the Atoll Council in accordance with the LUP and Built Environmental Regulations.
- Article 68 states that the Local Councils must be involved in the planning stage of any developmental projects.
- Article 69 states that, if an EIA is required for any developmental project, an EIA must be done for the project and the report must be shared with the Atoll Council. Further, the project proponent must share with the Atoll Council the potential environmental impacts mentioned in the report along with the proposed mitigation measures.

3.1.10.1 8th amendment to Decentralization Act

With the 8th amendment to the Decentralization Act, Local Councils were given additional authority. Relevant articles under this amendment pertaining to the proposed project are:-

- Article 68 was amended as follows; Local Councils must be involved in the planning stage of any developmental projects. Further, if an EIA is required for any developmental project, an EIA must be done for the project and the report must be shared with the Local Council. Further, the project proponent must share with the Local Council the potential environmental impacts mentioned in the report along with the proposed mitigation measures.
- Article 69 was amended as follows; for PSIP projects, if the total value of the project is less than 5 million rufiyaa, then those projects must be implemented through the Local Council. For Projects higher than 5 million rufiyaa, the government agency could still implement the project via the Local Council under certain set guideline by the government agency.
- An additional section was also added to Article 69 which states that;
    - 69-1(a) the Councils must provide the following general public services; (1) electricity, (2) water, and (3) Sanitation.

  - 69-1(b) the general public services must be given in accordance with the competent authority's guidelines and regulations.
  - 69-2(a) if the general public services are to be provided via a third party, an agreement must be made between the Council and the third party service provider.
  - 69-3 (a)electricity, water and sewerage facilities must be established in accordance with the LUP.

3.1.11 National Strategic Action Plan

The Strategic Action Plan (SAP) of the Government of Maldives is a central policy framework and planning document that guides the overall development direction of the Maldives for the next five years. The SAP consolidates the current Government's manifesto pledges with existing sectoral priorities. The SAP serves as the main implementation and monitoring tool to track the progress of the delivery of the Government's policies and development priorities. The SAP is formally rolled out into the line ministries' day to day operations from 1 October 2019. The SAP consists of 5 Sectors and 33 subsectors.

3.1.12 Public Health Protection Act (7/2012)

The purpose of this act is to establish policies for protection of public health, identify persons responsible for protection of public health, define how public health protection policies will be implemented and establish policies to limit basic rights ensured under the Maldives Constitution to Maldivians and people living in Maldives to necessary extents to protect public health. Chapter 5 of the act outlines health hazards, eliminating risk, reporting health hazards, and order of things that can be done and not done in relation to a building. Chapter 6 of the act outlines the procedures for declaring state of emergency.

3.1.13 Immigration Act (1/2007)

This act lays down the rules for the departure and entry of Maldivian Nationals and foreign Nationals. Relevant articles under this regulation pertaining to the proposed project are:-

- Article 3; all persons shall enter the Maldives from an authorised port, unless a person is compelled to do otherwise, due to sudden natural causes, or an emergency which is beyond the control of the person. Persons departing from the Maldives shall also depart from an authorised port unless in cases of emergency as stated above.
- Article 7; (a) A foreign national may enter the Maldives if he/she can produce a valid passport and a valid permit of entry. (b) A foreign national may leave the Maldives provided that he/she has a valid passport. (c) Pursuant to subsection (a), a foreign national may enter the Maldives, unless as stated otherwise in the Regulations made under this Act, by filling a disembarkation form as specified in the Regulations and by submitting it with the passport to an immigration officer, and upon the leave to grant a permit of entry for the Maldives. (d) A foreign national may depart from the Maldives, unless as stated otherwise in the Regulations made under this Act, by filling an embarkation form as specified in the Regulations, and submitting it with the passport to an immigration officer and upon the leave to grant departure.
- Article 8; (a) For the purposes of this Act, permits to remain in the Maldives shall be divided into the following eight types;

  (1) Tourist Visa
  (2) Diplomatic Visa
  (3) Student Visa
  (4) Business Visa
  (5) Dependant Visa
  (6) Work Visa
  (7) Resident Visa
  (8) Special Visa

(b) The permits specified in subsection (a) are subject to the Regulations made under this Act.

3.1.14 Anti-Human Trafficking Act (12/2013)

This act was enacted to combat human trafficking in the Maldives in order to protect human rights and human dignity. As per international best practices this act includes three main components of criminalization, prevention and rehabilitation of victims, making human trafficking a criminal offense in the Maldives. The law also strictly prohibits forced labor and fraudulent recruitment. The main objective of this act include;

- Preventing human trafficking in the Maldives
- Establish crimes of human trafficking and prescribe the punishments
- Provide for prosecution of perpetrators under this act
- Providing protection and assistance to victims of human trafficking
- Promote and protect the human rights of trafficked victims
- Engage in cooperation with local and international NGOs working against human trafficking to combat human trafficking

3.1.15 National Biodiversity Strategy and Action Plan

The National Biodiversity Strategy and Action Plan 2016-2025 (NBSAP 2016-2025) seeks to ensure that threats to biodiversity are addressed, biodiversity is conserved, sustainably used and benefits arising from them are shared equitably. It also encompasses ways of addressing gaps, challenges and constraints highlighted in earlier sections. It is a living document that will have the capacity to adapt to changes in national conditions, capacities and to the changes in the intrinational arena.

3.1.16 Climate Emergency Act (9/2021)

Climate Emergency Act was enacted in the Maldives in order to tackle the dangers that Maldives and its citizens face due to climate change. This act aims to bring forth regulations and mitigation measures to face the impacts of climate change, and to make Maldives a leading nation in advocating for action on climate change. It also aims to make the country carbon neutral while reaching its sustainable development goals.

- Article 2 states that Maldives should be a carbon neutral country by the year 2030, offsetting the same amount of carbon as those emitted. Any changes to the regulations can only be brought in consideration of new scientific findings and changes in international climate mitigation policies.
- Article 5 states that an action plan must be created to analyse the current situation and strategies to reach the climate goas in the country. The action plan must include regulations to make the country carbon neutral and resilient to climate change, adaptation and mitigation measures to respond to climate impacts, implementation of climate adaptation and mitigation in developmental plans, methods of monitoring of greenhouse gas emissions, development and implementation of renewable energy and its storage, and the roles of the government and other related bodies in strategizing and reaching climate mitigation goals.
- Article 7 states that any emissions from flights and ships travelling through Maldives under circumstances not stated in the law will not be considered when calculating total national emissions.

3.1.17 Heritage Act (12/2019)

This law aims at safeguarding the perpetuation of items and sites of historical significance to future generations and ensures the documentation, preservation, and protection of cultural heritage.

- Article 2 states that portable heritage items, historic constructions or buildings, historic sites, and any cultural skills or talent all fall under heritage to be protected under this law.

It also defines each category and states that they will be valued by the importance of their inheritance to future generations.

Article 3 states that all policies regarding heritage protection will be made under the guidance of the president. Under this law, 'Department of Heritage' was renamed 'National Center for Cultural Heritage'.

- Article 5 states that a catalogue of all heritage artefacts and sites must be published and reviewed to update once every 2 years.
- Article 6 states that a written permit must be obtained from the NCCH if any artefacts are to be moved from its place of origin. If any artefacts are found being moved without necessary permits, they must be detained immediately, and NCCH must be informed. It also states that any historical buildings or heritage sites must have a boundary marked and disclosed at protected. If any work needs to be carried out that encroaches this boundary, a permit must be acquired from the NCCH
- Article 6 also states that NCCH will determine the ownership of heritage artefacts and sites and their guardians.
- Article 7 states that the following heritage items and sites legally belong to the government:
    - All artefacts and sites under the legal custody of the government at the time of passing of this legislature;
    - All artefacts and sites legally renounced by their owners which meets the requirements outlined in this legislature;
    - Any artefacts or sites historically important which have not yet been found within the maritime boundary of Maldives, be it in water or on land.
- Article 7 also states that in order to claim ownership of an artefact or site, one must inform the local council. If any items or sites are not claimed, they will be considered government property until someone claims ownership. If a historical item is found on a land leased by the government, all works must be halted on site until the items are assessed by NCCH.
- Article 8 states that all names historically given to islands, lagoons, reefs, and other places must be documented by NCCH without any changes. Paperwork for developmental plans carried out in such places must include these names.

- Article 10 states that any damages caused to heritage artefacts or sites can be fined, depending on its value, an amount between MVR10,000 and MVR1,000,000.

3.2 Regulations

This section describes the applicable regulations pertaining to the proposed development.

3.2.1 Environmental Impact Assessment Regulation 2012 (2012/R-27)

The EIA Regulation, which came into force in 2007, has been revised and this revised EIA Regulation is currently in force since May 2012. The Regulation sets out the criteria to determine whether a development proposal is likely to significantly affect the environment and is therefore subject to an EIA. Schedule D of the EIA Regulation defines the type of projects that would be subject to EIA. The main purpose of this Regulation is to provide step-by-step guidance for proponents, consultants, government agencies and general public on how to obtain approval in the form of an Environmental DS. Relevant articles under this regulation pertaining to the proposed project are:-

- Article 6 states that when government agencies propose a project, while finalizing the location for the project, they should reflect on the criteria's mentioned in Schedule B of this regulation. Furthermore, they should reflect on all the laws and regulations pertaining to environmental protection in the Maldives as well as international conventions, plans and programs to which Maldives is a party to.
- Article 7 states that the proponent must apply for an Environmental DS prior to commencement of any developmental project in accordance with article 8 of this regulation.
- Article 8 states that the proponent must apply for a screening if the developmental project is not listed in the inclusive list for EIAs (Schedule D of this regulation). If the proposed developmental project is listed under Schedule D of this regulation, then the proponent must submit an EIA application form.

- Article 11 states that a scoping meeting must be conducted and a ToR must be agreed upon by the proponent and the competent authority.
- Article 12 states that the EIA report must be written as per the approved ToR and the report must be a technical report with scientifically proven alternatives, impacts, and mitigations.
- Article 13 states that the competent authority must assign two independent reviewers to review the submitted EIA report and within 28 working days the competent authority must issue an Environmental DS or for additional information.
- Article 14 states that the Environmental DS must be; (1) Approval with the condition that the proponent follows the proposed mitigation measures (2) EIA report rejection due to poor quality of the report (3) Rejection of the proposal by the competent authority due to potential irreversible negative impacts. The approval has a validity of 1 year. If the proponent could not start the works within one year of the approval due to force major, then the competent authority could give an extension.
- Article 15 states that if the proponent is not contented with the DS, then the proponent may apply to review the DS.

Since the enactment of the EIA regulation in 2012 there have been five amendments to the regulation. These five amendments are discussed below;

3.2.1.1 1st amendment to the Environmental Impact Assessment Regulation 2012 (2013/R-18)

The first amendment to the EIA regulation 2012 involved the establishment of a guideline for fining environmental offences under article 20. According to the guideline fines are as follows; (1) MVR 20,000 for first offence (2) MVR 60,000 for second offence (3) MVR 120,000 for 3rd offence (4) MVR 200,000 for repeated offences after the 3rd time.

3.2.1.2 2nd amendment to the Environmental Impact Assessment Regulation 2012 (2015/R-174)

With the 2nd amendment to the environmental impact assessment regulation 2012, there were some procedural changes made to the EIA process. The most important was the shifting of tourism related development projects EIAs to the Ministry of Tourism (article 4). The detailed amendments made to the relevant articles are discussed below;

- Article 7 was amended to have three categories of review period as follows; (1) MVR 5000 for a 15 day review period, (2) MVR 5000 for a 10 day review period, (3) MVR 5000 for a 05 day review period
- Article 8 was amended to have 5 categories of Environmental DS for screening as follows; (1) Environment Management Plan, (2) Initial Environmental Examination, (3) Environmental Impact Assessment, (4) Approval to go forth with the screened project, and (5) Approval to go forth with the project according to the mitigation measures proposed by EPA.
- Article 9 was amended to have 3 categories of Environmental DS for an IEE as follows; (1) Environmental Impact Assessment report if the project is anticipated to have major environmental impacts, (2) Environment Management Plan, (3) Approval to go forth with the project if the project is not anticipated to have major environmental impacts.
- Article 14 was amended to have a guideline for extending the Environmental DS as follows; (1) Extension for Environmental DS must be applied by the proponent with the justification for the delay, (2) If extension was applied before the deadline for Environmental DS, an extension shall be granted without a fine, (3) If extension was applied within one month of the deadline for Environmental DS, a fine of MVR 5000 will be charged, (4) If extension was applied within 2 month of the deadline for Environmental DS, a fine of MVR 10,000 will be charged, (5) an extension shall not be granted if applied after 2 months of the deadline for Environmental DS, (6) extension for environmental DS shall be granted for a maximum of 1 year and only once. Further points were added to article 14 to set out the guideline for applying, review and issuing Environment DS for addendums. In this regard a proponent can apply for an addendum

for an approved EIA report if; (1) it has not been 5 years since the Environmental DS was issued, (2) scope change, (3) works within 500 m of the proposed project.

- Schedule D of the regulation was amended to exclude all tourism related projects and some further changes to the list of project were also made.
- Schedule U was added to the regulation. For the projects under this schedule, approval to go ahead with the project will be granted once the proponent submits a commitment to implement the mitigation measures prescribed by EPA. There project are; (1) maintenance dredging without any changes to the initial footprint, (2) removing vegetation by local plot owners, (3) clearing roads for new housing plots after getting approval from island Council, (4) drilling borehole on land for extracting water.

3.2.1.3 3rd amendment to the Environmental Impact Regulation 2012 (2016/R-66)

One of the major amendments to the EIA regulation with this amendment is that the EIA consultants are classified into 2 categories (article 16). To be eligible for a category A consultant, the applicant should hold a minimum of level 7 qualification in an environment related field recognized by the Maldives National Qualification Framework. Likewise, to be eligible for a category B consultant, the applicant should hold a minimum of level 7 qualification in specific fields relevant for the nature of the project recognized by the Maldives National Qualification Framework. Additional detailed amendments made to the relevant articles are discussed below;

- Article 5 was amended to mention the implementing agency to be EPA on behalf of the Ministry.
- Article 6 was amended such that except for EMP and Environmental monitoring reports, all other reports under this regulation shall be made by a registered EIA Consultant. Further points were added to the article which mentions to submit data which could be used for environmental monitoring and the proponent must inform the Ministry in writing prior to commencement of the project once the approval has been granted for a project.

- Article 11 was amended such that while applying for EIA, the ToR must be submitted in an editable format along with the application form and project brief. Furthermore, it is now mentioned that that the ToR must be agreed upon during the scoping meeting and that only another registered EIA Consultant could replace the projects EIA Consultant if he cannot attend the scoping meeting, and the proponent could apply for an extension on the validity of the ToR during a 1-year period from the scoping meeting date.
- Article 13 was amended to include more guidelines on how to manage the EIA review process. An additional point was also added which gives the authority to EPA to conduct a review meeting with the Consultant and Proponent if they deem necessary.
- Article 14 was amended to include 2 more points which states that the Environmental DS must have the parameters for the environmental monitoring report and the schedule. The Ministry could ask the proponent to submit environmental monitoring reports up to 5 years or more if the Ministry deems necessary. Additionally, the proponent must share the Environmental DS with the Contractor ad a copy of this Environmental DS and a copy of the approved EIA report must be made available at the project site.
- Article 20 was amended to include the guideline on how to penalize offences under this regulation.

3.2.1.4 4th amendment to the Environmental Impact Regulation 2012 (2017/R-7)

Under this amendment the Schedule U which was added under the 2nd amendment to the EIA regulation (2015/R-174) was amended to include two more type of projects; (5) all projects except for the projects mentioned in point N of this schedule for newly reclaimed areas on natural islands until three years from the reclaimed date, (6) all projects except for the projects mentioned in point N of this schedule for newly reclaimed islands until three years from the reclamation date. The projects mentioned in point N of this schedule are any project that involves dangerous chemicals, oil storage, incinerators, release of toxic chemicals to atmosphere, and fiber works.

However, if the reclaimed lands were to be populated then any major developmental project shall be subjected to EIA.

3.2.1.5 5th amendment to the Environmental Impact Regulation 2012 (2018/R-131)

With this 5th amendment, Tourism related developments are again included under this regulation. Additionally, the Schedule D was amended to include tourist resort development and tourist hotel developments in the inclusive list for EIAs.

3.2.2 Waste Management Regulation (2013/R-58)

The waste management regulation dictates the principles needed to follow when handling waste. The aim is to minimize adverse impacts to the environment and human health from waste. Under this regulation, island councils are required to make a waste management plan and submit it to the competent authority. This plan must be reviewed at least every five years. Relevant articles under this regulation pertaining to the proposed project are:-

- Article 8 states that hazardous waste are specified in Schedule J and under no circumstance should it be burned or disposed off in any area of the Maldives. While transporting hazardous waste, it must be in a closed container without any leaks. Further a sign must be on the container, specifying that it is hazardous waste. The import of any hazardous waste mentioned in Schedule J to Maldives is an offense.
- Article 11 states that waste generated at islands must be disposed off in areas specified for the purpose or areas approved by competent authority. Disposal of waste to following areas is prohibited under this regulation and is an offense;
    - Mangroves
    - Island Lagoon
    - Reef
    - Lagoon(falhu)
    - Finolhu

- Beach
- Vegetation line
- Harbor
- Park
- Road

Approval to dispose waste to areas not approved by competent authority will be given under following circumstances;

1. Waste is disposed as a measure to protect human health
2. Situation created by natural disaster or a state of emergency

Approval to manage waste at household level is not required for the following actions;

1. Waste segregation at household
2. Composting at household

- Article 12 states that anybody responsible for public sites must place and manage a dustbin. The waste in these dustbins must be managed according to this regulation. Disposal of waste to public sites (besides the dustbin) is an offense.
- Article 16 states that approval must be taken from the competent authority for the following waste management works
  1. Waste collection
  2. Transportation of waste by land and sea
  3. Waste treatment
  4. Storage of waste
  5. Management of waste disposal sites
  6. Landfill
  7. Handling of hazardous waste

The number of waste management approvals for a particular area or areas will be decided by the competent authority based on the following;

1. Waste generation
2. Economic gains from waste management actions
3. Environmental protection requirements for the area

- Article 25 states that waste must be transported from one place to another in accordance with the standards set in schedule A of this regulation. If waste is to be removed from an Island, it should be taken to a regional waste management facility.

3.2.2.1 1st amendment to waste management regulation (2014/R-10)

This amendment only included the amendment of dates to start implementing articles of this regulation (article 4).

3.2.2.2 2nd amendment to waste management regulation (2014/R-10)

This amendment also only included the amendment of dates to start implementing articles of this regulation (article 4). The date to implement the articles 13, 14, and 16 were amended to 05th October 2014.

3.2.2.3 3rd amendment to waste management regulation (2017/R-90)

This amendment included amendments to the schedule A and K of this regulation. Further article 25 was amended to include that action will be taken against parties which does not transport waste according to the standards set under this regulation.

3.2.2.4 4th amendment to waste management regulation (2018/R-63)

With this amendment the most notable, was the establishment of a system for fining offences under this regulation under Schedule N. Further article 25 was amended such that waste that needs to be removed from an Island must be taken to the nearest waste management center.

3.2.2.5 5th amendment to waste management regulation (2021/R-109)

With this amendment the most notable, was that waste management responsibility can be assigned to Councils and waste management plans need to be made at Island level.

3.2.3 Regulation on Environmental Liabilities (2011/R-9)

This regulation was made in order to emphasize on sustainable development according to Article 22 of the Constitution of the Republic of Maldives 2008 and penalize environmental offences to the regulations made under Environmental Protection and Preservation Act (4/93) in the intention to prevent such offences. Relevant articles under this regulation pertaining to the proposed project are:-

- Article 5 states that this regulation will be implemented by the EPA on behalf of the Ministry of Environment, Climate change and Technology.
- Article 7 states that, if there is a potential environmental damage or if there was an environmental damage due to a project, then the proponent must report to the Competent Authority and take measures to prevent such damages. The Competent Authority must assert to the proponent to implement mitigation measures.
- Article 8 states that, instead of the proponent under following circumstances the Competent Authority reserves the right to implement measures to prevent or mitigate environmental damages;
    - In an emergency

  - The proponent did not implement the mitigation measures prescribed by the Competent Authority under article 7
  - The proponent must bear the cost of implementing the mitigation measures mentioned in article 7 and for inspection visits from the Competent Authority
- Article 9 states that, for potential environmental damages imposed for works done by getting written approval from a government institution or advice, the cost of mitigation measures implemented maybe reclaimed from the government institution that gave the approval.
- Article 10 and 11 states that, if the Competent Authority found that there were environmental damages due to the actions of anybody, the Competent Authority could ask them to submit the mitigation measures that could be implement along with the information mentioned in Schedule 6 of this regulation.
- Article 12 states that the proponent has the right to review the decisions of the Competent Authority to the Minister if;
  - The environmental damages were not due to the actions of the proponent
  - If the decisions of the Competent Authority regarding the environmental damages were questionable by the proponent
  - If the environmental damage was imposed due to the proponent following a regulation
  - If the environmental damage was imposed due to a third party while the proponent was diligently following all the mitigation measures
- Article 13 states that the Competent Authority has the right to visit and inspect the project sites, take copies of the documents photographs, and samples.
- Article 14 states that when inquired by the Competent Authority about information regarding any investigations under this regulation, correct information must be provided by the inquired entity or person.
- Article 15, 16 and 17 states the procedures for fining offences for environmental liabilities.

3.2.4 Regulation on Safety Standards for Construction Work (2019/R-156)

This regulation was made under the Building Act (4/2017) with the aims to improve working conditions for laborers and to protect the general public from potential health hazards due to construction activities. Relevant articles under this regulation pertaining to the proposed project are:-

- Article 5 states that the following are Contractors responsibilities;
    - If the contractor's work exceeds MVR 1,500,000 a health and safety plan has to be prepared and followed for the safety of employees as well as the public.
    - While handling construction materials, must ensure the safety of the workers and the general public
    - Informing the workers of any potential health hazards during construction works
    - Have an emergency response plan
    - Ensure that works are proceeding in accordance with the health and safety plan
    - Providing personal protective equipment for workers and they must be trained to use the equipment
    - Ensure construction site is safe for the workers and general public
    - Ensure that there is no disturbance to the general public from the construction site
    - Ensure waste is managed properly at the worksite
    - Ensure that the construction materials are properly stored
    - Ensure that safety boards and signs are installed around the construction site
- Article 6 states that if the contractor's work exceeds MVR 1,500,000 an emergency response plan must be made and the following must be fulfilled accordingly;
    - Emergency response plan must be made available at the constructions site
    - Inform the workers on the emergency response plan and its protocols
    - Have at least 2 emergency response drills every year
    - Ensure that a first aid personnel is always available at all times at the construction site
    - First aid kit must be readily available at the construction site

  - Ensure that the equipment's in the first aid kit is in proper condition
  - Installing safety boards at the construction site
  - Contacts for Emergencies must be available on a notice board at the construction site
- Article 7 states that the contractor must appoint a safety supervisor with more than five years of experience for the project.
- Article 8 states that the responsibilities of the site safety supervisor is to carrying out daily site inspections to ensure the proper measures are being taken to ensure safety and to report to the contractor/Competent Authority if the measures are not being implemented.
- Article 9 states that if the contractor's work exceeds MVR 5,000,000, the contractor must have an insurance policy taken to compensate for any damages to the workers and the surrounding people.
- Article 10 states that all contractor's must ensure that the general public is protected from the construction site by doing the following;
  - Installing pedestrian detour boards
  - Ensure construction materials and equipment's are stored in a way that does not pose any difficulties to the general public
  - Installing safety boards, fences, tapes, sheets to protect the general public
- Article 11 states that the contractor should ensure that workers are always using personal protective equipment when on site. These include safety helmets, safety boots, safety goggles, noise cancellation headphones, gloves, masks, safety belt, and other safety equipment's necessary as per the type of work.
- Article 12 states that all construction sites must be fenced off. The article also explains in details how the fence must be erected.
- Article 13 states that the contractor must ensure the required safety equipment's are provided to the works if they are handling hazardous substances.
- Article 14 explains in detail the safety procedures that must be followed while working at higher than 3 m.

- Article 15, 16, and 17 explains in detail the safety measures that must be taken while working on an overhead platform, roofs, and ladders.
- Article 18, 19 explains how scaffolding are to be used.
- Article 20, 21, 22, 23 states the safety measures that must be followed for using electrical equipment's,
- Article 24 states that the contractor must implement a chemical handling procedure for handling chemicals. The article also explains in details what is to be included in the chemical handling procedure.
- Article 25, 26, 27, 28 states the safety measures that must be followed while working with asbestos, gas cutters, and compressed gas welding.
- Article 29 states that, if there are flammable materials at the construction site, fire prevention equipment must be made available.
- Article 30, 31, and 32 states the safety measures that must be followed for using equipment's powered by mechanical power and electricity, cranes,
- Article 33 states the safety measures that must be followed for while working in closed spaces.
- Article 34 states the measures that must be followed while decommissioning a building.
- Article 35 states the construction materials must be stored within a close area. Approval must be taken from the Competent Authority to store at the designated area and the approval must be shown on a board.
- Article 36 states the measures that must be followed while loading and unloading materials to a construction site.
- Article 37 and 38 explains the requirements for the safety board and other signs that must be installed at construction sites.
- Article 39 states that, when an accident occurs at a construction site, it must be immediately reported to the police. The record of accidents must be maintained by the contractor.
- Article 49 states that, if there is no entity responsible for implementing the measures mentioned under this regulation, then the proponent shall be responsible for

implementing the measures. The proponent must report any offences against this regulation to the Ministry.

- Article 50 states that with the enforcement of this regulation the Male' Planning Regulation Chapter 3 is void.

3.2.5 Groundwater extraction and disposal regulation (2021/R-20)

The groundwater extraction and disposal regulation is enacted with aim of minimizing impacts to groundwater while carrying out dewatering activities. Relevant articles under this regulation pertaining to the proposed project are:-

- Article 4 and 5 states that for any building construction or industrial use can only extracted and used after getting written approval from the competent authority, however, water can be extracted for domestic wells placement and cleaning
- Article 6 states that dewatering must be done only after getting the necessary approval from the competent authority. The proponent must inform the people living with 100 meters of the dewatering activity via the council using the application form mentioned in annex 1 of this regulation.
- Article 7 states that an administrative fee of MVR 100 has to be paid to the competent authority when submitting the form mentioned in article 7.
- Article 8 states that water samples must be tested from a certified laboratory and their results attached with the form in this regulations annex 1. The results must not be more than 45 days old from the tested date. The following parameters must be tested;
    - pH
    - Temperature, ^{0}C
    - TDS, mg/l
    - Dissolved Oxygen, mg/l
    - Electrical Conductivity, µS/cm
    - Turbidity, NTU
    - Salinity, ppm

- Ammonia, mg/l
- Fecal Coliforms 0/100
- Hydrogen Sulphide, mg/l
- Nitrates, mg/l
- Phosphates, mg/l
- Hydrocarbon, mg/l
- Oil and grease, mg/l

If any of the parameters cannot be tested, then it should be mentioned in writing from the laboratory.

- Article 10 states that the approval for dewatering will be issued from the competent authority. Dewatering approval will be given for 28 consecutive days including public holidays. It also states that approval of discharge of groundwater to the sea must be given only in places where groundwater recharge is not feasible or where recharging might result in damage to the residents and the environment. For larger projects involving dewatering at different places, the places from where dewatering can be started with 28 consecutive days must be submitted as a single approval. The period of approval will be decided based on the following;
  - Size of proposed water discharge area
  - Water quality
  - Work schedule
  - Method of water discharge
  - Water discharge area
  - Article 11 states that designated impact radius from water discharge is 30 meters from the discharge point if the the water is not recharged within the aforementioned radius. The proponent must inform the houses within this radius by writing before 24 hours. During dewatering activities if a damage is caused to any of the houses within this radius, the proponent has to take responsibility and also if any of the houses face any difficulties getting groundwater from their wells the proponent has

to provide no more than 250 liters of water per household or equivalent amount in payment.

- Article 11 states that an option other than draining water into the ground will be considered if the water quality tests mentioned in article 9 of this regulation shows that the waters quality is not adequate. Furthermore, it is stated that if a pipeline is to be established for the dewatering, the pipeline pathway shall be approved by the council. Moreover, ti is the responsibility of the proponent to maintain and decommission the pipeline after the dewatering period is over.
- Article 13 states that for any reason if the site engineer believes that the dewatering works will not be finished within the approval period, then the proponent must fill the form on annex 3 of this regulation and submit to competent authority before 3 days (the 3 days will be counted excluding public holidays) of approval deadline. Upon receival of the form and associated documents the competent authority will issue the approval within 2 working days. However, extension will be granted if the original approval granted under article 10 of this regulation is less than 6 months old, if more than 6 months then a new approval must be requested.
- Article 14 states that a non-refundable fee has to be paid to the competent authority according to following principle;
    - For the first 28-day approval MVR 500 per day
    - For the first addition of days to the approval MVR 1000 per day
    - For the second addition of days to the approval MVR 1500 per day
    - For the third addition and onwards with an increasing rate of MVR 2000 per day

However, if the works were delayed due to a natural hazard or bad weather, without any fee days will be added. These types of days will be decided by considering the information from the respective authority.

- Article 14 states that the competent authority has to maintain records about the dewatering approvals they give. If a sewerage service provider gives service of water discharging from dewatering activities, then they must provide those dewatering activity details before the 10 of each month for the previous month's activities.

- Article 15 states that the competent authority has the full discretion to stop any dewatering activities ongoing via formal documentation. Furthermore, it also states that the authority shall be indemnified from any claims arising from the halting of works.

Article 16 states that competent authority must inform the proponent via writing if they go against regulations.

3.2.6 Regulation on uprooting, cutting and transportation of palms and trees

This regulation was implemented on 1 February 2006 by the Ministry of Environment, Climate change and Technology, Energy and Water. The primary purpose of the regulation is to control and regulate large-scale uprooting, removal, cutting and transportation of palms and trees from one island to another. According to the regulation, certain types of trees and plants that have unique attributes are prohibited to be removed from its natural environment. Also, uprooting and removal of a vast number of trees and palms are subjected to an EIA, which is required to be submitted to the EPA and written approval is required prior to implementation of the project. Relevant articles under this regulation pertaining to the proposed project are:-

- Article 3 states that the following types of vegetation is prohibited to be removed;
    - Vegetation found from 15 m inland of the vegetation line
    - Vegetation found on and around 15 m of wetlands and mangroves
    - Vegetation found on any protected areas of the Maldives
    - Any protected trees
    - Vegetation which has environmentally unique characteristics
- Article 5 (a) states that, to clear large number of trees for any purpose, an EIA must first be done and approval from the competent authority must be obtained. Article 5 (b) states that, if trees are to be transported with soil, the allowable limit is an 8-inch x 10-inch black bag. Article 5 (e) states that, trees larger than what is mentioned in article 8 (a) of this regulation, must be transported with only the soil in their root balls. Article 5 (f) states that, if machinery is to be used for uprooting trees, no damages must be done to any trees besides the trees concerned for uprooting.

- Article 6 states that, if the total number of a particular species of tree is less than 05 on an island, then this species of tree can only be transported with a special permit from the Ministry of Environment, Climate change and Technology. Furthermore, this applies to trees on which birds roost or live in inhabited and uninhabited islands.
- Article 7 states that, the maximum number of trees which could be removed from an island shall be declared by the Ministry of Environment, Climate change and Technology, based on the existing numbers of trees on the Island.
- Article 8 states that, coconut trees taller than 15 feet and other trees taller than 8 feet, their limit for removal is 10 trees, to uproot greater than 10 trees require an approval from Ministry of Environment, Climate change and Technology. Smaller trees could be removed by taking an approval from Island Council and the limit for uprooting is less than 1/3rd of the trees present in the area. For any purpose uprooting and transport of trees must be done under the supervision of the Island Council on inhabited Island; personnel responsible to manage the island in case of uninhabited Island.
- Article 9 states that, after uprooting trees, the holes must be backfilled with soil. It is prohibited to put in any waste into the holes.
- Article 10 states that, any offences against this regulation will be punishable under Act 4/93 accordingly.

3.2.6.1 1st amendment to regulation on uprooting, cutting and transportation of palms and trees (2014/R-7)

The amendment to this regulation has specified a set of categories and any tree falling under these categories is not allowed to be removed unless it is a project of the government, approved by the parliament. Relevant articles under this law pertaining to the proposed project are:-

- Article 3 was amended such that the prohibited trees for removal could be removed for a project approved by the parliament with the condition that the proponent must plant 6 trees for each tree removed instead of 2. Furthermore, a monitoring plan must be made and the proponent must implement it.

- Article 11 was amended to mention that this regulation will be enforced by the EPA on behalf of the Ministry of Environment, Climate change and Technology.

3.2.7 Regulation on management and conservation of water resources (2021/R-22)

This regulation has been formulated under the Article 17,18,19,20 and 23 of the Water and Sewerage Act (08/2020). The main purpose of the regulation is to ensure sustainable use, conservation, protection, improvement, and beneficial use of the water resources. Relevant articles under this regulation pertaining to the proposed project is:

Article 6:

- None shall do any harm or damage to the water resources.
- Groundwater and other naturally occurring water resources on the islands, shall not be utilised for any economic or business use.
- Dewatering for building construction shall be carried out as per the relevant regulation.

Article 10: All activities shall be carried out in a manner that would not contaminate the water resources in accordance to the clause 20 of the water and sewerage act (08/2020)

Article 12: Spillage of any oil and chemical to the ground is prohibited. Oil and chemical shall be store in shaded, appropriately bunded areas and in a manner that even if the total volume of the dedicated storage is leaked, the leaked volume is able to be recovered without contamination of the soil or the groundwater. Transfer of oil and chemical on land must be carried out with appropriate safety measures to prevent spillage. Discarding of waste oil and chemicals must be carried out in a manner that does not contaminate any of the water resource, and at a facility that is approved by the regulator.

Article 17: All responsibilities of rectification of a polluted groundwater resource from spillage of oil and chemicals shall be borne by the polluter. Any incidence of groundwater pollution from oil and chemical spillage should be reported to the regulator within 24 hours. The rectification works shall be carried as per the instruction of the regulator.

3.2.8 Regulation on protection of environmentally sensitive areas (2018/R-78)

This regulation was under article 4 of the Environmental Protection and Preservation Act (4/93) in order to declare standards to declare areas for protection, manage protected areas, establish environmentally sensitive areas, establish a network of protected areas, create public awareness and participation in management of protected areas, protection and preservation of Maldivian biodiversity for future generations. According to this regulation there are 7 types of protected areas; (1) Internationally recognized areas, (2) Strategic Nature Reserve, (3) Wilderness area, (4) National Park, (5) Natural Monument, (6) Habitat / Species Management area, and (7) Protected Area with Sustainable use. Relevant articles under this regulation pertaining to the proposed project are:-

- Article 12 states that a management plan must be made in order to manage the protected areas. This management plan must reflect on the developmental plans for the region.

3.2.9 Regulation on Construction Material Import and Production Control

The purpose of the regulation is to control the quality of imported and produced materials that are used in the construction industry. The regulation specifies the materials which would be controlled under the regulation in its annex 1. Furthermore, the regulation details out the registration requirements, permits, procedures, quality controls and applicable fine of those that breach the regulation.

3.2.10 Regulation on Construction Material and Construction materials testing facilities

Under the regulation all contractors involved in the construction industry are to be registered. The regulation includes the requirements of contractor's registration, grading, implications on participating in international tenders, insurance, project licenses, Joint venture registrations, responsibilities of the registered contractors and applicable fine for breaching the regulation.

3.2.11 Regulation on protection of old trees

This regulation was made under article 4 of the Environmental Protection and Preservation Act (4/93) in order to declare standards to manage protected trees in the Maldives. The regulation states the criteria for trees to be protected; (1) trees older than 50 years, (2) trees that are threatened to extinction locally, (3) ecologically important species, and (4) due to the request of public. Relevant articles under this regulation pertaining to the proposed project are:

- Article 6 and 7 states that a radius of 2 m from the crown of the protected tree shall be protected and while allocating land of purposes special attention must be given to not disturb such trees. Further any activities that may cause damage to the trees shall not be undertaken.

3.2.12 Regulation on Preserving greenery and Vegetation in the Maldivian Islands (2022/R-92)

The purpose of this regulation is to encourage to plant more trees and increase greenery in the islands, protection of old trees, decentralisation of the approval process for removal of vegetation, reduction of environmental impact from vegetation removal and strengthen the reporting process of vegetation removal. According to the regulation, any tree beyond the age of 50 is protected under the regulation. The registry of trees must be maintained by the council. In islands leased for tourism and other economic ventures, the proponent must report the vegetation details annually to EPA. Furthermore, coastal vegetation belt of 20 meters must be ensured in each island. For any activity that involves removal 50-200 trees, approval of the agency must be acquired and for any activity that involves removal of more than 200 trees, an EIA must be carried out.

3.2.13 Regulation on Use, Handling, and Storage of Oil

The purpose of the regulation is to reduce fire hazards caused by the mishandling of oil, to raise awareness on the proper handling methods of oil and to standardize the infrastructure of oil handling and storage facilities.

- Article 2 of the regulation details out all the aspects of vehicles that handle and transport oil on land.
- Article 3 deals with all the aspects of petrol handling in storage areas and service centres.
- Article 4 highlights the aspects of fuel handling in diesel and kerosene service centres.

Article 5 highlights the aspects of fuel pipeline from storage to meters

3.2.14 Heritage Preservation Regulation (2020/R-37)

This regulation is brought forth under article 11 of Heritage Act (12/2019) to determine, protect, and preserve the heritage of Maldives.

- Article 4 states that cultural heritage can be portable artefacts, historical buildings, historical sites, and cultural skills or talents such as "kasabu viyun".
- Article 5 states that the value of a heritage item or site will be determined depending on its historical importance, age, category, preservation of authentic condition, and amount of damage.
- Article 6 states that National Center for Cultural Heritage must be informed within 48 hours via the respective island (if from an inhabited island) or atoll council (if from an an inhabited island) if any historical items or sites that could be a heritage item or site is found. Portable artefacts must immediately be handed over to the island or atoll council without any damage.
- Article 6 also states that if the landowner refuses NCCH from assessing the site or items found or refuses to adhere to NCCH's advice on how to deal with items or site, NCCH can acquire a court order under the Heritage Act (12/2019).

- Article 8 states that a 50 feet distance surrounding a heritage site will be protected. And if this distance cannot be acquired, then an adequate distance will be determined by NCCH and council after assessing the importance of the site. No developmental plans aside from those decided by NCCH can be carried out in this area without approval from NCCH.
- Article 9 states that if anybody wishes to excavate or search for heritage artefacts from a predicted historical site, necessary permits must be taken from NCCH.
- Article 12 states no heritage artefacts can only be moved within the country or abroad by its legal owner or guardian with permit from NCCH.
- Article 16 states that:
    - Damaging historical artefacts or sites will be fined an amount between MVR200,000 and MVR1000,000, and trying to damage one will be fined an amount between MVR10,000 and MVR 500,000.
    - Changing the authentic form of any heritage artefacts or sites will be fined an amount between MVR100,000 and MVR800,000, and trying to change one will be fined an amount between MVR10,000 and MVR 300,000.
    - Illegally importing or exporting heritage artefacts of Maldives or any other country will be fined an amount between MVR100,000 and MVR500,000, and trying to import or export will be fined an amount between MVR10,000 and MVR 100,000.
    - Excavating sites to acquire valuable artefacts without the permission of NCCH will be fined an amount between MVR10,000 and MVR100,000, and trying to excavate without permission will be fined with MVR10,000.
    - Not informing NCCH or the local council when an artefact or site is found while excavating any area in Maldives will be fined with an amount between MVR10,000 and MVR100,000.
    - Spreading false rumors or information regarding heritage artefacts will be fined an amount between MVR10,000 and MVR50,000.

3.2.15 Built environment regulations

This regulation underlines the general guidelines for inhabited islands, uninhabited islands and islands used for other purposes to plan the development accordingly based on population, size, the type of works done on the island and other factors that should be taken into account. All islands are categorized according to the above-mentioned factors to regulate the development activities. Relevant articles under this regulation pertaining to the proposed project are:-

- Article 1.2 states that the Ministry of Housing and Urban Development shall be responsible for monitoring and implementation of Land Use Planning under this regulation with the directions from other relevant government Authorities.
- Article 12 states that if there are any environmentally sensitives sites on any island it shall be protected. However, this does not mean that these areas should be left untouched without any use, rather these areas shall be made use for recreational purposes or some other beneficial purpose without damaging these sites.
- Article 12.2 states that a 20 m buffer zone must be set around all Islands from the coast. However, at harbor area or other commercial areas, if adequate land is unavailable this buffer zone could be reduced.

Annex 1 of the regulation;

- Article 5.4 states that a minimum of 200 feet buffer zone must be set from an STP to residential areas, recreational areas, parks, social spaces, or any places that produce food or drink (fish drying, water storage tank).
- 5.5.1 states that maximum area that can be allocated for a powerhouse is 45m x 45m.
- 5.5.2 states that a distance of at least 200ft shall be kept between the residential area and the powerhouse.
- 5.5.3 states that if the criteria mentioned above is not met for the island, the Ministry of Housing and Urban Development shall be consulted.
- Article 5.6 states that land for Desalination plants shall be allocated by the Ministry of Housing and Urban Development as advised by Ministry of Environment, Energy and Water.

3.2.16 Maldives National Building Code (2019/R-1020)

The Maldives National Building Code R-1020 has been published in the year 2019 and consists of the following chapters.

Part I: building code for type 1 buildings.

- Clause A1 (Classified users): For the purposes of this building code, Type 1 Buildings are classified according to type, under seven categories. A building with a given classified use may have one or more intended uses. The seven categories are:
    - Housing
    - Communal residential
    - Communal non-residential
    - Commercial
    - Industrial
    - Outbuildings
    - Ancillary
- Clause A2 (Interpretation): In PART II of building code unless the context otherwise requires, words shall have the meanings given under this Clause
- Clause B1 (Structure): The objective of this provision is to:
    - Safeguard people from injury caused by structural failure,
    - Safeguard people from loss of amenity caused by structural behaviour, and
    - Protect other property from physical damage caused by structural failure
- Clause B2 (Durability): The objective of this provision is to ensure that a Type 1 Building will, throughout its life, continue to satisfy the other objectives of this code
- Clause C1(means of escape): The objective of this provision is to:
    - Safeguard people from injury or illness from a fire while escaping to a safe place
    - Facilitate fire rescue operation
- Clause C2 (spread of fire): The objective of this provision is to:
    - Safeguard people from injury or illness when evacuating a Type 1 Building during fire.

  - Provide protection to fire service personnel during firefighting operations.
  - Protect adjacent household units and other property from the effects of fire.
  - Safeguard the environment from adverse effects of fire
- Clause C3 (structural stability during a fire): The objective of this provision is to:
  - Safeguard people from injury due to loss of structural stability during fire, and
  - Protect household units and other properties from damage due to structural instability caused by fire.
- Clause C4 (access & facilities for the fire services): The objective of this provision is to:
  - Provide reasonable facilities to assist fire fighters in the protection of life
  - Enable fire appliances to gain access to the building.
- Clause D1(access routes): The objective of this provision is to:
  - Safeguard people from injury during movement into, within and out of Type 1 buildings,
  - Safeguard people from injury resulting from the movement of vehicles into, within and out of Type 1 buildings, and
  - Ensure that people with disabilities are able to enter and carry out normal activities and functions within Type 1 buildings.
- Clause D2 (mechanical installations for access): The objective of this provision is to:
  - Safeguard people from injury and loss of amenity while using mechanical installations for movement into, within and out of Type 1 buildings,
  - Safeguard maintenance personnel from injury while servicing mechanical installations for access, and
  - Ensure that people with disabilities are able to carry out normal activities and processes within Type 1 buildings
- Clause E1(surface water): The objective of this provision is to:
  - Safeguard people from injury or illness, and other property from damage, caused by surface water
  - Protect the outfalls of drainage systems.

- Clause E2 (external moisture): The objective of this provision is to safeguard people from illness or injury which could result from external moisture entering the Type 1 building
- Clause E3 (internal moisture): The objective of this provision is to:
    - Safeguard people against illness or injury which could result from accumulation of internal moisture
    - Protect household units and other properties from damage caused by free water from occupancy in the same building.
- Clause F1(hazardous agents on site): The objective of this provision is to safeguard people from injury or illness caused by hazardous agents or contaminants on a site
- Clause F2 (hazardous building materials): The objective of this provision is to safeguard people from injury and illness caused by exposure to hazardous building materials.
- Clause F3 (hazardous substances and processes): The objective of this provision is to safeguard people from injury or illness, and other property from damage, caused by hazardous substances or processes in buildings
- Clause F4 (Safety from Falling): The objective of this provision is to safeguard people from injury caused by falling
- Clause F5 (Construction and Demolition hazards): The objective of this provision is to safeguard people from injury, and other property from damage, caused by construction or demolition site hazards.
- Clause F6 (lighting for emergency) : The objective of this provision is to safeguard people from injury due to inadequate lighting being available during an emergency
- Clause F7 (warning systems) : The objective of this provision is to safeguard people from injury or illness due to lack of awareness of an emergency
- Clause F8 (signs) : The objective of this provision is to:
    - Safeguard people from injury or illness resulting from inadequate
    - identification of escape routes, or of hazards within or about the Type 1 building,
    - Safeguard people from loss of amenity due to inadequate direction, and

  - Ensure that people with disabilities are able to carry out normal activities and processes within buildings
- Clause G1(personal hygiene) : The objective of this provision is to:
  - Safeguard people from illness caused by infection or contamination,
  - Safeguard people from loss of amenity arising from the absence of appropriate personal hygiene facilities, and
  - Ensure people with disabilities are able to carry out normal activities and processes within Type 1 buildings.
- Clause G2 (laundering) : The objective of this provision is to ensure:
  - Adequate amenities for people to do laundering, and
  - That people with disabilities are able to carry out normal activities and processes within Type 1 buildings
- Clause G3 (food preparation and prevention of contamination) : The objective of this provision is to:
  - Safeguard people from illness due to contamination,
  - Enable hygienic food preparation without loss of amenity, and
  - Ensure that people with disabilities are able to carry out normal activities and processes within Type 1 buildings
- Clause G4 (ventilation) : The objective of this provision is to safeguard people from illness or loss of amenity due to lack of fresh air.
- Clause G5 (interior environment) : The objective of this provision is to:
  - Safeguard people from illness caused by excessive air temperature,
  - Safeguard people from injury or loss of amenity caused by inadequate activity space,
  - Ensure that people with disabilities are able to carry out normal activities and processes within Type 1 buildings
- Clause G6 (airborne and impact sound) : The objective of this provision is to safeguard people from illness or loss of amenity as a result of undue noise being transmitted between abutting occupancies

- Clause G7 (Natural Light): The objective of this provision is to safeguard people from illness or loss of amenity due to isolation from natural light and the outside environment.
- Clause G8 (Artificial light): The objective of this provision is to safeguard people from injury due to lack of adequate lighting.
- Clause G9 (Electricity): The objective of this provision is to ensure that: In Type 1 buildings supplied with electricity, the electrical installation has safeguards against outbreak of fire and personal injury
- Clause G10 (Piped service) : The objective of this provision is to safeguard people from injury or illness caused by extreme temperatures or hazardous substances associated with building services.
- Clause G11(gas as an energy source): The objective of this provision is to:
    - Safeguard people from injury arising from the use of gas as an energy source,
    - Safeguard people and other property from the risk of fire or explosion, and
    - Safeguard people from loss of amenity due to the gas supply being inadequate for the intended use.
- Clause G12 (water supplies): The objective of this provision is to:
    - Safeguard people from illness caused by infection from contaminated water or food,
    - Safeguard people from injury due to the explosion of a pressure vessel or from contact with excessively hot water,
    - Ensure that people with disabilities are able to carry out normal activities and functions within Type 1 buildings
- Clause G13(Foul water) : The objective of this provision is to:
    - Safeguard people from illness due to infection or contamination resulting from personal hygiene activities, and
    - Safeguard people from loss of amenity due to the presence of unpleasant odours or the accumulation of offensive matter resulting from foul water disposal

- Clause G14 (industrial liquid waste) : The objective of this provision is to safeguard people from injury or illness caused by infection or contamination resulting from industrial liquid waste
- Clause G15 (solid waste) : The objective of this provision is to safeguard people from injury or illness caused by infection or contamination from solid waste
- Clause H1 (energy efficiency) : The objective of this provision is to facilitate efficient use of energy.

3.3 Guidelines and Technical Specifications

This section describes the applicable guidelines and technical specifications pertaining to this proposed project.

3.3.1 Guideline for Uprooting, Cutting and Transportation of Palms and Trees (published on 06th June 2017)

This guideline was made under Article 5(a) of the regulation on uprooting, cutting and transportation of palms and trees, to specify the guideline for giving approval to uprooting, cutting and transportation of trees. Relevant articles under this guideline pertaining to the proposed project are:-

- Article 3 states that while giving approval for uprooting, cutting and transportation of trees for any project, the following must be fulfilled;
    - The project strictly requires land clearance
    - The budget for the project has been approved
    - Approval from the relevant government body for the project
- Article 4 states that, in order to obtain approval for uprooting, cutting and transportation of trees under this guideline, the proponent must apply for approval from EPA through the application form on Schedule 1.
- Article 5 states the procedure for giving approval for uprooting, cutting and transportation of trees. The first step is for the proponent to submit information on the

type, size, numbers and location of trees to EPA. If there are no prohibited trees to be removed in the area and if the total number of trees to be removed is less than 200 or the land clearance area is less than 8250 m^2, then approval shall be given under this guideline with a set of mitigation measures to be followed by the proponent.

3.3.2 Requirement for Fire Prevention Equipment in the building

This is a guideline enforced by the Ministry of Defense and National Security of the Maldives which sets out a list of requirements and standards that need to be met in fire prevention equipment provided in buildings prone to fire hazards. As the whole guideline pertains to any power generating facility, hence to this project, the main points have been highlighted as follows:-

- **Hose reel**: Should comply with the specified standards under the guideline. The overall width of the reel should be no more than 850mm. The overall height of the Reel should be less than 850mm including Hose and integral Flexi guide for hose withdrawal guide. The overall depth of the hose reel should be no more than 150mm. The colour of the Reel should be Red, fitted with an operating instruction plate. The Hose Reels nozzle retainer or hose guide and the inlet valve should be fitted at a height of about 900mm above floor level;
- **Hose reel cabinets**: The hose reel cabinet should be Recess mounting type with or without glass-paneled door for use with the above-mentioned sized Hose Reels. Hose Reel Cabinet dimension should be no more than 900mm in width, 900mm in height, 160mm in depth (including door). The colour of the cabinet should be Red. Special permission should be taken for other Colour. Recessed Latch Type handle should be installed. Hose reel signage should be in accordance with BS 5499 or any other equable International Standard. Fixing hole should be provided;
- **Water supply for hose reel system**: Should be such that when the two topmost reels in the building are used simultaneously, each should provide a jet of about 6 m in length and will deliver less than 0.5 L. Minimum storage required for the hose reel is 2275 L and 1137.5 L up to a maximum of 9100 L for each additional reel. Tanks supplying water for domestic purposes should not be used as a suction tank for hose reel

installation. The pipings for the supply of water for hose reel should be in and out galvanized schedule 40. Diameter of the piping should not be less than 50 mm;

- **Hose reel booster pump system**: Hose reel booster pump set, complete with in and out galvanized steel pipework with or without expansion vessels;
- **Fire extinguishers**: 2kg CO_2 stored pressure Extinguisher approved to BS EN 3. Aluminium Alloy Body approved to BS5045 Part 3 or any other equable International Standard. Red body with black band or Black colored head cap, swivel Horn, English screen. Fully charged. 6 Kg DCP Extinguisher (Gas Cartridge Type) approved to BS EN 3 or any other equable International Standard. Blue Body Headcap, English Screen, Fully charged. 9 Liter Water Extinguisher (Gas Cartridge Type) approved to BS EN 3 or any other equable International Standard. Red Body Headcap, English Screen, Fully charged. Fire Extinguishers should be located in conspicuous positions on brackets or stands where they will be readily seen by person. The carrying handle of larger heavier extinguishers should be about 01m from the floor level. But smaller extinguishers should be mounted so as to position the handle 1.5m from the floor level;
- **Cabinets for fire extinguishers**: Cabinets for fire extinguishers should be of stainless steel with or without glass-fronted doors. The colour of the cabinet should be Red or to suit the requirements of architectural surroundings. Recessed Latch Type handle should be installed. Fire Extinguisher Single Cabinets dimension should be no more than 190mm in width, 640mm in height, 180mm in depth (including door). Fire Extinguisher Double Cabinets dimension should be no more than 440mm in width, 640mm in height, 180mm in depth (including door);
- **Fire Blankets**: Fire Blankets should be certified to BS EN 1869: 1997 or any other equable International Standard. Fire Blankets should be extremely flexible and drape easily the slim pack of fire blanket should be Red or White;
- **Dry riser gate valve**: Dry riser gate valve to BS 5041/2, or any other equable International Standard, Gunmetal c/w Padlock strap, blank cap and chain. Inlet 2 ½" ASA 150 F/F. Outlet 2 ½" Inst. Female couplings to BS 336. Colour red;

- **Dry riser outlet box**: Dry riser outlet box for Dry Riser gate valve. Construction should be similar to BS 5041. Standard finish colour Red. Dry Riser outlet cabinet dimension should be as specified in the guideline;
- **Pumping in breeching**: Twin pumping in breeching, approved to BS 5041, or any other equable International Standard, Gunmetal inlets 2 x 2 ½" BS Instantaneous Male Coupling c/w non-return valves. Outlet 4" ANSI 150 F/F flange;
- **Dry riser inlet box**: Dry Riser inlet box for horizontal/vertical pattern. Double inlet to BS 5041 or any other equable International Standard finish color Red. Dry riser inlet cabinet dimension for flush mounting should be as specified in the guideline.
- **Air release valve**: Air release valve, Gunmetal, Inlet 1" BSP Male;
- **Piping for dry riser system**: The Piping for Dry Riser System should be In and Out Galvanized schedule 40. The diameter of the Piping should be not less than 100mm.
- **Fire doors**: All fire doors should be opened to the direction of the flow of people while on emergency. These doors should be installed with a self-closing device including the Panic Latch. These Panic Latch devices should conform to BS 5725 Pt 1 or any other equable International Standard. Fire doors conforming to the method of construction as stipulated in the guideline;
- **Fire exit signs**: Photoluminescent Fire exit signs should sign each Fire Exit Door. The Symbol height should be no more than 100mm;
- **Fire detection and alarm system**: Fire Detection and Alarm System should conform to BS 5839 or any other equable International Standard. Fire Detection and Alarm System should be Analogue Addressable System with mimic diagram. A system in which signals from each detector and/or call point are individually identified at the control panel. Fire Detection and Alarm System should consist of Automatic Detectors, Manual Call Points, Control and Indicating equipment, etc. It should also cover System capable of providing signals to initiate, in the event of fire, the operation of ancillary services such as fixed fire extinguishing systems and other precautions and actions. Main Fire Control Panel should be located at the reception and the Repeater Panel should be located in the guardroom;

- **Installation and testing of wet riser system**: Wet rising systems shall be provided in every building in which the topmost floor is more than 30.5 meters above the fire appliance access level. A hose connection shall be provided in each firefighting access lobby. Wet risers shall be of minimum 152.4 millimeters diameter and shall be hydrostatically tested at a pressure 50% above the working pressure required and not less than 14 bars for at least twenty-four hours. Each wet riser outlet shall comprise standard 63.5 millimeters instantaneous coupling fitted with a hose of not less than 38.1 millimeters diameter equipped with an approved typed cradle and a variable fog nozzle. A wet riser shall be provided in every staircase which extends from the ground floor level to the roof and shall be equipped with a three-way 63.5 millimeters outlet above the roofline. Each stage of the wet riser shall not exceed 61 metres unless expressly permitted by D.G.F.S but in no case exceeding 70.15 meters;
- **Wet or dry rising systems for buildings under construction**: Where either wet or dry riser system is required, at least one rise shall be installed when the building under construction has reached a height of above the level of the fire brigade pumping inlet with connections thereto located adjacent to a useable staircase. Such riser shall be extended as construction progress to within two floors of the topmost floor under construction and where the designed height of the building requires the installation of wet riser system fire pumps, water storage tanks, and water main connections shall be provided to serve the riser;
- **Wet riser booster pump system**: Wet riser booster pump set, complete with In and Out galvanized steel pipework with or without expansion vessel and specified in the guideline;
- Symbols, as well as installation of firefighting systems on the basis of building usage, are outlined on the table in the guideline; and
- All equipment mentioned above should be approved by the Maldives National Defense Force (MNDF) fire and rescue services before installation. Special permission should be taken if different from the guideline specifications.

3.4 International Conventions, Plans and Programs

This section describes international conventions, plans and programs that are relevant to the proposed development.

3.4.1 United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol

UNFCCC is the first binding international legal instrument that deals directly with the threat of climate change. It was enacted at the 1992 Earth Summit in Rio de Janeiro and came into force on the 21st of March 1994.

Signatory countries have agreed to take action to achieve the goal outlined in Article 2 of the Convention which addresses the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system," Thus all Parties to the Convention are committed under Article 4 to adopt national programs for mitigating climate change, promote sustainable management and conservation of greenhouse gas (GHG) sinks such as coral reefs, to develop adaptation strategies, to address climate change in relevant social, economic and environmental policies, to cooperate in technical, scientific and educational matters and to promote scientific research and exchange of information.

The Kyoto Protocol entered into force on the 16th of February 2005 and is an international and legally binding agreement to reduce GHG emissions globally. It strengthens the Convention by committing Annex I Parties to individual, legally-binding targets to achieve limitations or reductions in their GHG emissions. Maldives has signed and ratified both the Convention and the Protocol.

3.4.2 Paris Agreement

The Paris Agreement is also an agreement within the framework of the UNFCCC dealing with GHG emission mitigation, adaptation and finance proposed to start in the year 2020. Upon opening for signatories on 22 April 2016, 180 UNFCCC members have signed the treaty (including

Maldives), however, only 22 of which ratified it so far which is not enough for the treaty to enter into force yet. The aim of the convention as described in Article 2 of the treaty is “enhancing the implementation” of the UNFCCC through:-

i. Holding the increase in global average temperature to well below 2° C above pre-industrial level and to pursue efforts to limit the temperature increase to 1.5° C above pre-industrial levels, recognising that this would significantly reduce the risk and impacts of climate change;
ii. Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and lower GHG emissions development in a manner that does not threaten food production; and
iii. Making finance flows consistent with a pathway towards low GHG emissions and climate resilient development.

3.4.3 The Vienna Convention for the Protection of the Ozone Layer

The Vienna Convention for the Protection of the Ozone Layer is a multilateral environmental agreement which entered into force in 1988. It acts as a framework for the international efforts to protect the ozone layer. In 2009, the Vienna Convention became the first convention of any kind to achieve universal ratification. The objective of the Convention were for the Parties to promote corporation by means of systematic observations, research and information exchange on the effects of human activities on the ozone layer and to adopt legislative or administrative measures against activities likely to have adverse effects on the ozone layer. Maldives has signed and ratified this convention and adheres to it.

3.4.4 The Montreal Protocol on Substances that Deplete the Ozone Layer

The Montreal Protocol on Substances that Deplete the Ozone Layer (a protocol to the Vienna Convention for the Protection of the Ozone Layer) is an international treaty designed to reduce production and consumption of ozone depleting substances in order to phase out the production and abundance of substances that are responsible for depletion of the ozone layer. This protocol entered into force on 1 January 1989. Since its adoption, it has undergone 8 revisions and the Maldives abide by 4 of those addendums mentioned below:-

- The London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (1990);
- The Copenhagen Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (1992);
- The Montreal Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (1997); and
- The Beijing Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (1999).

3.4.5 Agenda 21

Agenda 21 is a non-binding voluntary implemented action plan of the United Nations (UN) with regards to sustainable development. It is a comprehensive plan of actions taken globally, nationally and locally by organizations of the United Nations System, Governments and Major Groups in every area in which humans impact on the environment. It is also an outcome of the Earth Summit (UN Conference of Environment and Development) held in Rio De Jeneiro, Brazil in 1992. Maldives is among the 178 countries which adopted this action plan. Out of the 4 sections it is grouped into, the proposed development pertains to:-

i. Section I: *Social and Economic Dimensions* which is directed towards combating poverty, especially in developing countries, changing consumption patterns, promoting health, achieving a more sustainable population and sustainable settlement in decision making; and

ii. Section II: *Conservation and Management of Resources for Development* which includes atmospheric protection, combating deforestation, protecting fragile environments, conservation of biodiversity, control of pollution and the management of biotechnology and radioactive wastes.

3.4.6 Sustainable Development Goals

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.

The Sustainable Development Goals are:

- No Poverty
- Zero Hunger
- Good Health and Well-being
- Quality Education
- Gender Equality
- Clean Water and Sanitation
- Affordable and Clean Energy
- Decent Work and Economic Growth
- Industry, Innovation, and Infrastructure
- Reducing Inequality
- Sustainable Cities and Communities
- Responsible Consumption and Production
- Climate Action
- Life Below Water
- Life On Land
- Peace, Justice, and Strong Institutions
- Partnerships for the Goals

3.4.7 Convention on Biological Diversity (CBD)

The Convention on Biological Diversity (CBD), formally known as the Biodiversity Convention, is a multilateral treaty which entered into force on 29 December 1993. The convention has 3 main goals:-

i. Conservation of biodiversity;
ii. Sustainable use of its components; and
iii. Fair and equitable sharing of benefits arising from genetic resources.

The objectives of the convention is to develop national strategies for the conservation and sustainable use of biodiversity.

3.4.8 Washington Declaration on Protection of the Marine Environment from Land-based Activities

Maldives is a signatory to the Washington Declaration on Protection of the Marine Environment from Land-based Activities which intends at setting a common goal sustained and effective action to deal with all land-based impacts upon the marine environment, specifically those resulting from sewage, persistent organic pollutants, radioactive substance, heavy metals, oils (hydrocarbons), nutrients, sediment mobilization, litter and physical alteration and destruction of habitat.

3.4.9 Regional plans and programs

In addition to the international treaties and conventions, Maldives is also a key player in the formulating and adopting of various regional plans and programs to protect the environment by actively participating in activities organised by several regional bodies. As such, Maldives is committed to the following which pertains to the proposed project: -

- South Asian Association for Regional Corporation (SAARC) Environment Action Plan adopted in Male' in 1997;

- SAARC Study on Greenhouse Effect and its Impacts on the Region;
- South Asian Regional Seas Action Plan and Resolutions concerning its implementation (1994); SAARC Study on Causes and Consequences of Natural Disasters;
- South Asian Seas Program; and
- Male' Declaration on Control and Prevention of Air Pollution and its likely Transboundary Effects for South Asia (1998).

3.5 Required Permits and Approvals

The following permits and approvals shall be obtained from the relevant authority prior to commencement of construction phase of the project:-

Table 3. Permits and Approvals required for the proposed development

Permits/Approvals	Approving Agency/Authority	Status
Approval of Architectural Drawings	MCI / HDC	Approved
Structural Drawing	MCI / HDC	Approved
EIA Decision Statement	EPA	Ongoing through the current EIA

3.6 Compliance of the Proposed Proposal to Statutory Requirements

All statutory requirements pertaining to this project shall be adhered to by the proponent during detail design phase, construction and operational phase. Furthermore, any changes to the legislative framework shall be considered and required changes shall be brought to project components as necessary.

4. PROJECT DESCRIPTION

This chapter describes the specific components of the proposed project in detail as per the approved ToR which is given the appendix section Appendix C of this EIA report.

4.1 Project overview

It is proposed to build a 10-storey commercial building (office complex). The total area of the site is 577.49 sqm. The proposed built-up area is 407.25 sqm. Furthermore, the building includes a 1basement floor. The proposed basement is 7237mm from the natural ground level and the foundation is at 1200mm from the basement floor.

4.2 Project Justification

Hulhumale is one of the most, if not the most developing part of the Greater Male Region and it continues to be a hub of real estate economic activities from both government and private investors. Therefore, it is understood that the demand for housing and economic ventures in Hulhumale is exponentially increasing.

The hawks Pvt Ltd (proponent) has acquired the LOT 11769 in Hulhumale' The proponent wishes to construct 10-storey office building on the land which will be used to run the office operations of the proponent and for commercial purposes in the form of lease agreements.

4.3 Location, study area and surrounding

The study area for the project is Hulhumale Lot 11769 and its surroundings. As such the environmental studies such as water quality and structural environment were restricted to the lot and surrounding area itself. Socio-economic impacts, on the other hand, were undertaken for the whole island population as the whole island will be affected. The road blockage area anticipated for the project is the "orchid maa hingun goalhi no.1" and "annaaru maa hingun" to the extent of the block. The overview of the lot location is presented in the figures below.

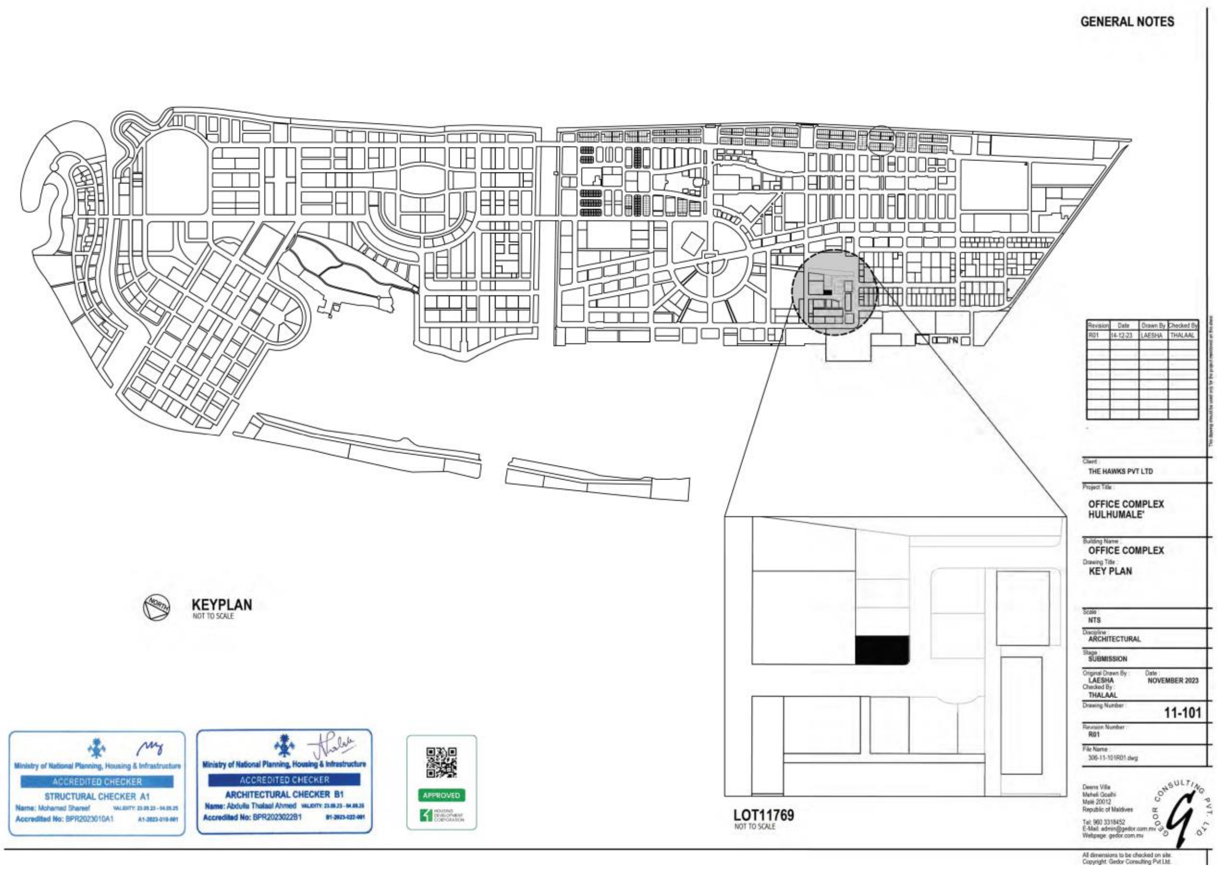


Figure 4: Partial print of the location of proposed lot

4.4 Project components

This section describes in detail the project activities that are likely to cause significant impacts to the environment.

4.4.1 Proposed Design

The proposed structural drawings of the building have already been approved by the Ministry of Housing (now the Ministry of Construction and Infrastructure). The approved structural drawings are attached in Appendix F of this report. Descriptions of the proposed facilities under this project include.

4.4.1.1 Basement floor

The basement floor consists of a 45.5m4 water tank, car parking allocations, building utility space and lifts. The proposed car parking at three levels and it is proposed to establish the combiparker 560 system.

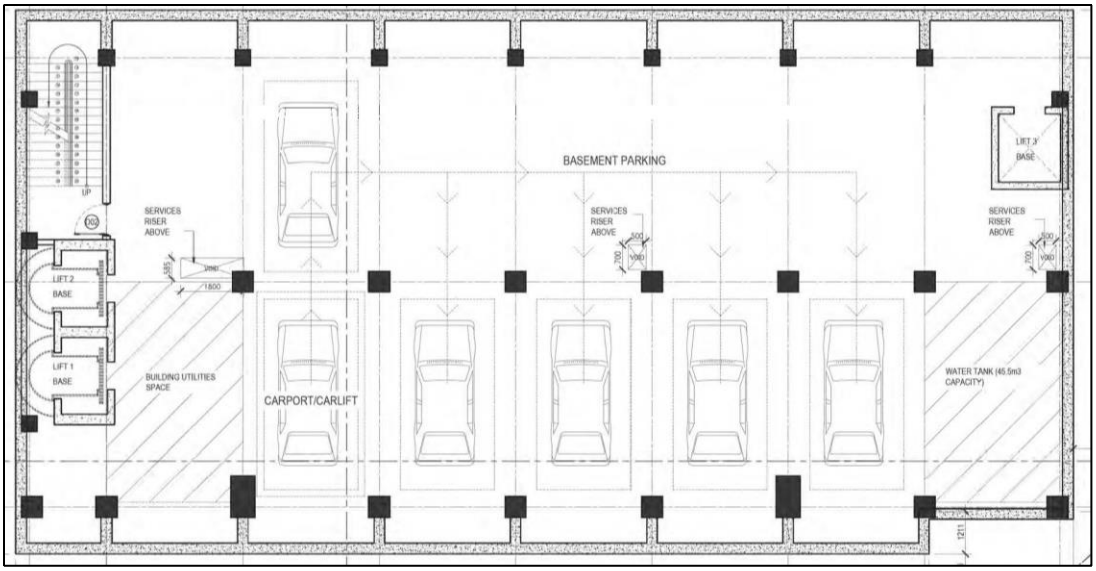


Figure 5: Partial print of basement floor layout

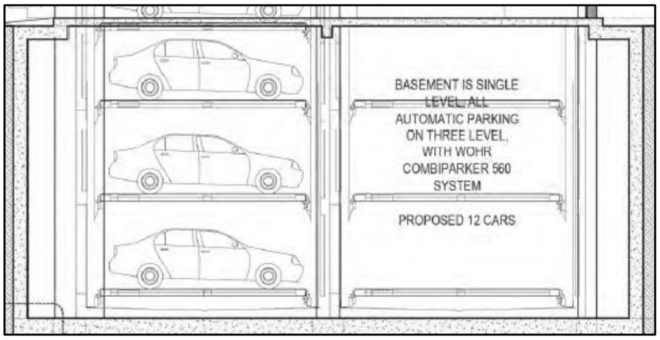


Figure 6: Partial print of car parking concept

4.4.1.2 Ground floor

The ground floor consists of parking space , access ramp, car and motor cycle lifts, designated fire lift, passenger lifts and lift lobby, waste management unit, two toilets with disability access and allocated space for other building utilities.

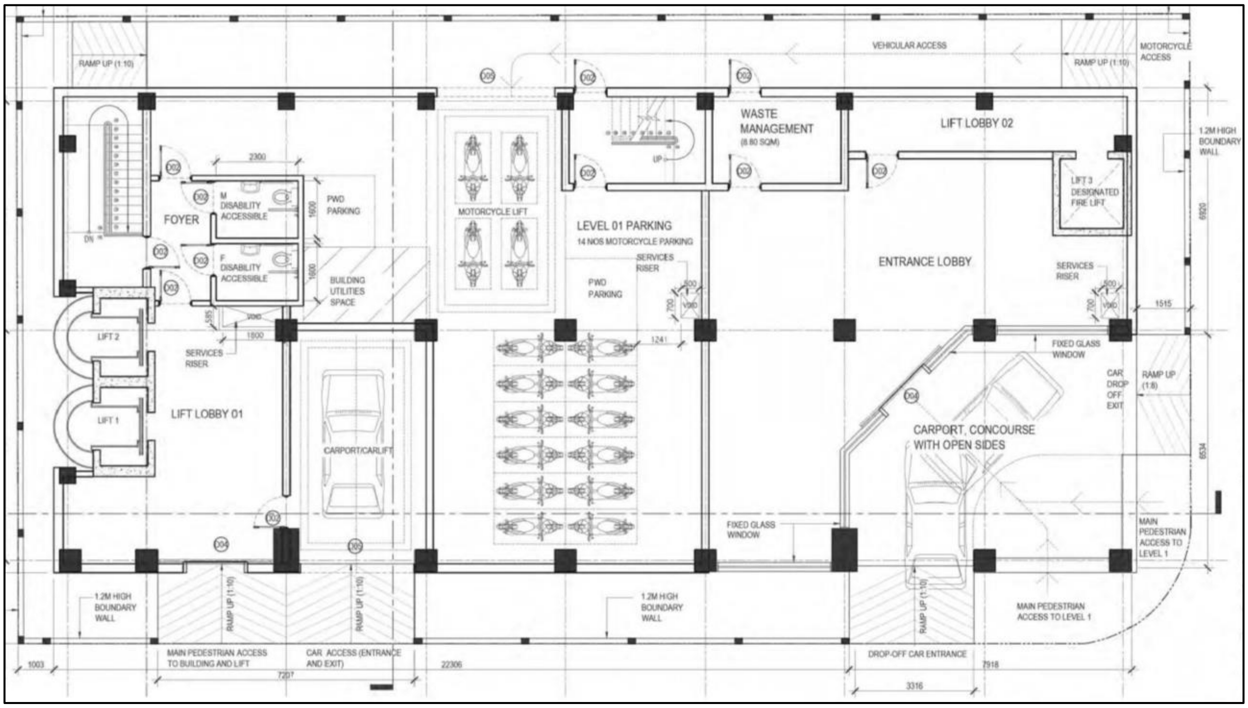


Figure 7: Partial print of proposed layout at ground floor

4.4.1.3 1st Floor

The first floor contains; allocated motor cycle parking spaces, two toilets with disability access, passenger lifts, designated fire lift, team room, baby care room and storage.

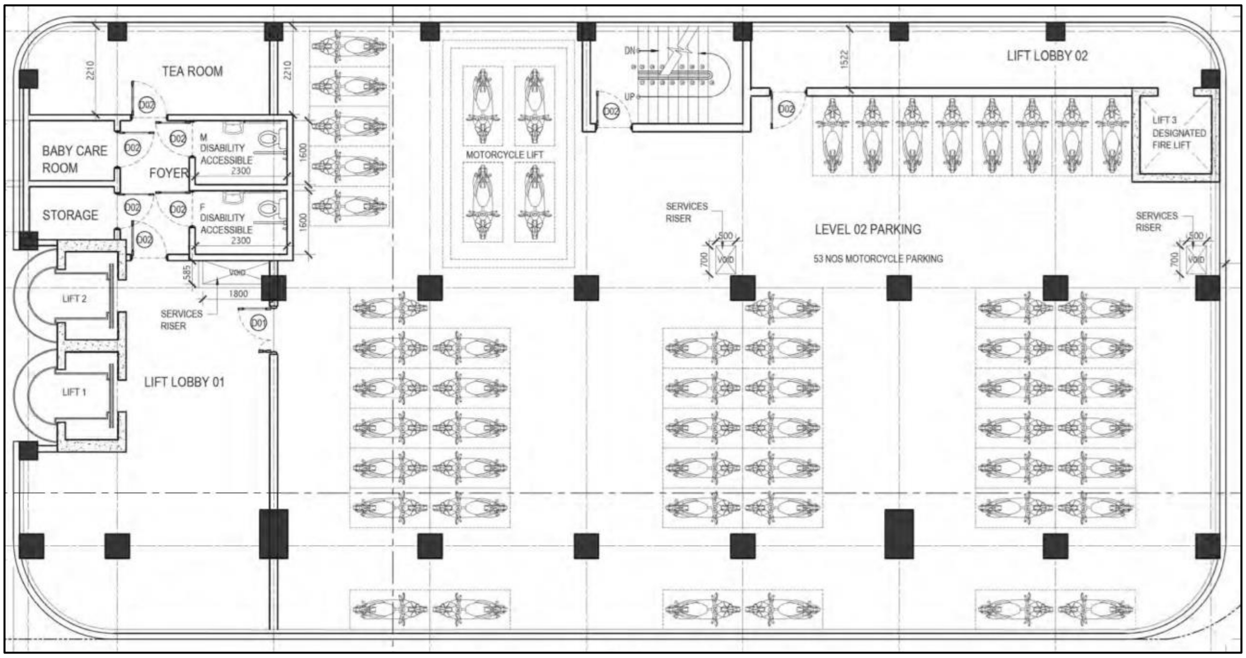


Figure 8: Partial print of proposed layout at first floor

4.4.1.4 2nd Floor

The second floor contains; convention hall, designated fire lift, lift lobby, two toilets with accessibility access, team room, baby care room, storage and passenger lifts.

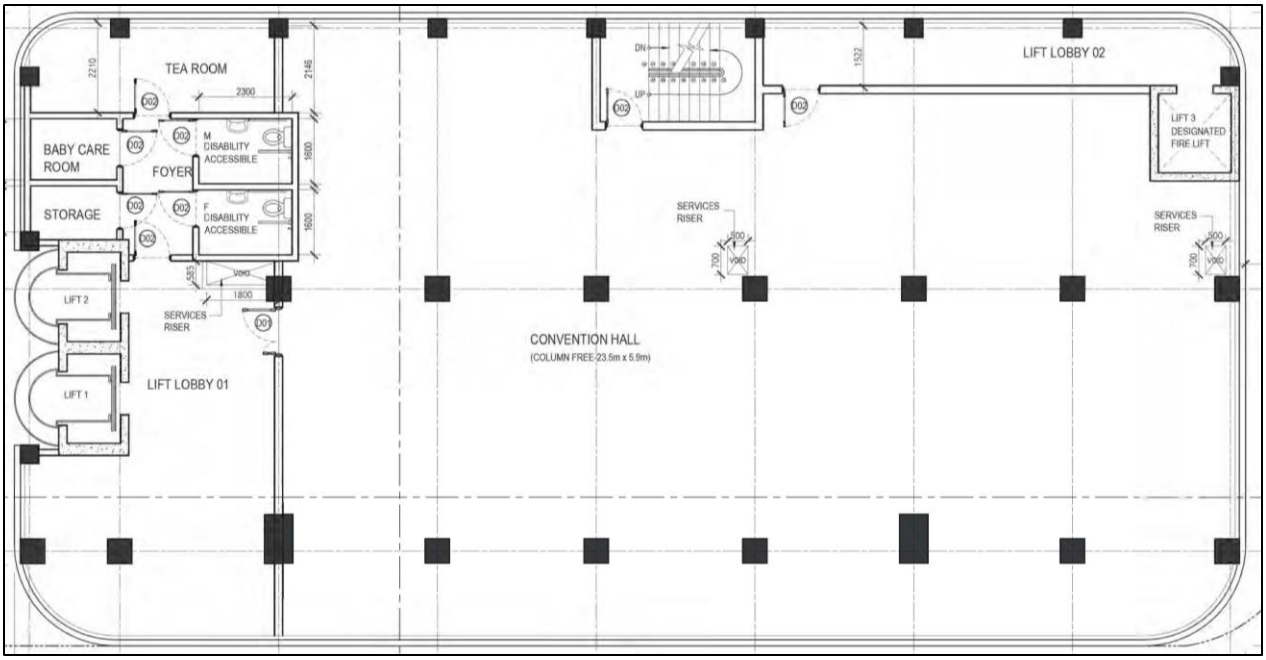


Figure 9: Partial print of proposed layout at second floor

4.4.1.5 3rd to 9th Floor

The third to nineth floor contains; dedicated office zones, terrace area, designated fire lift, lift lobby, two toilets with accessibility access, team room, baby care room, storage and passenger lifts. The layouts for the floors are provided below.

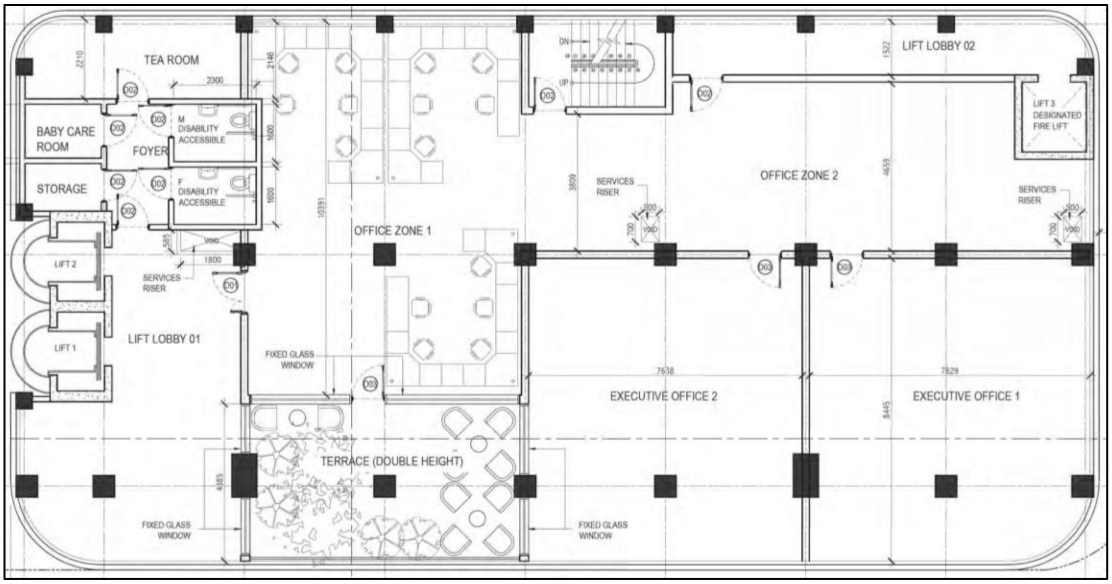


Figure 10: Partial print of proposed layout at third floor

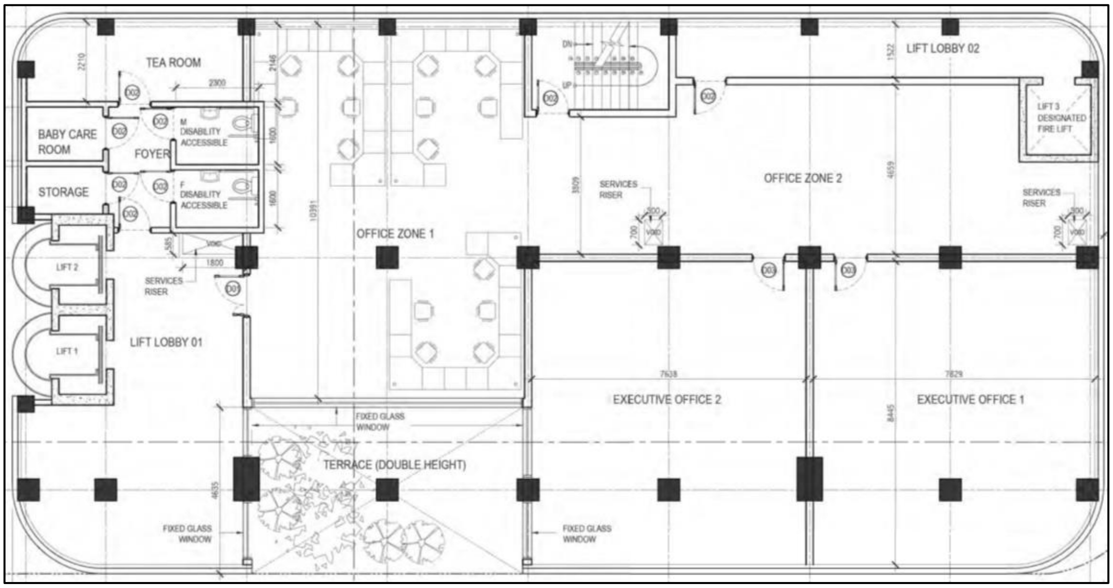


Figure 11: Partial print of proposed layout at fourth floor

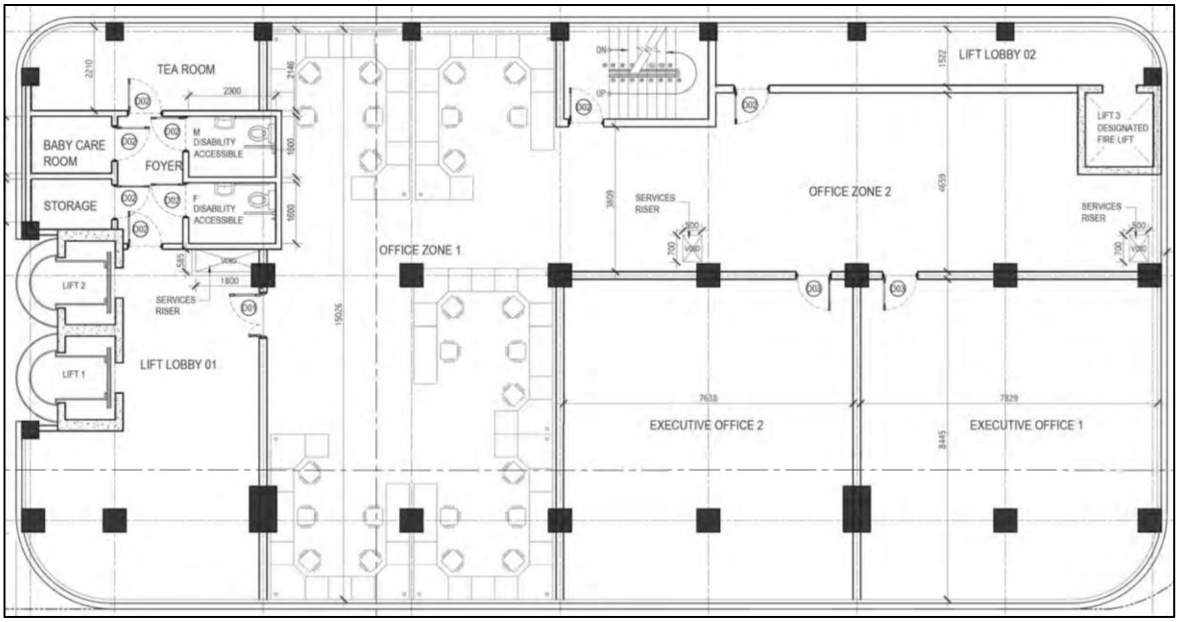


Figure 12: Partial print of proposed layout at fifth floor

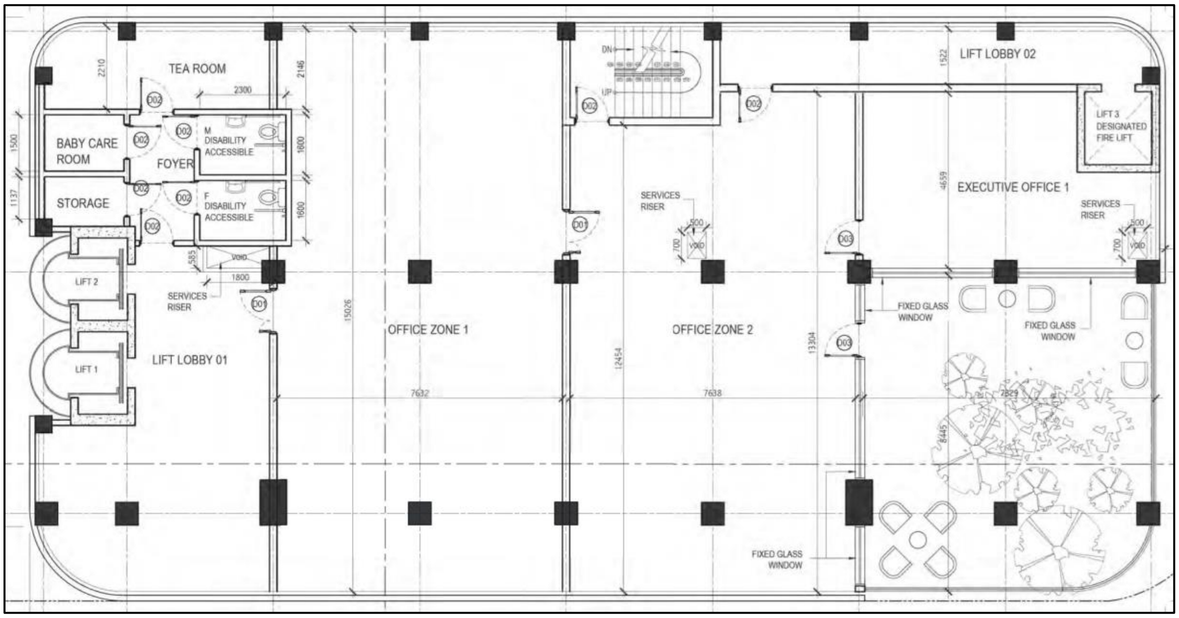


Figure 13: Partial print of proposed layout at sixth floor

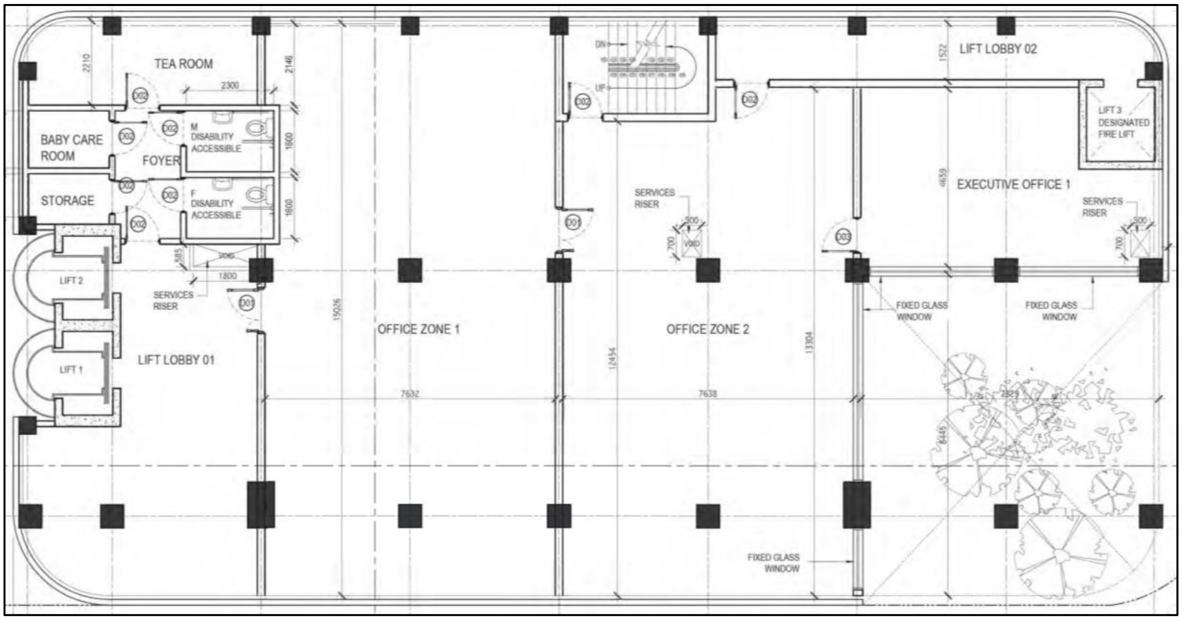


Figure 14: Partial print of proposed layout at seventh floor

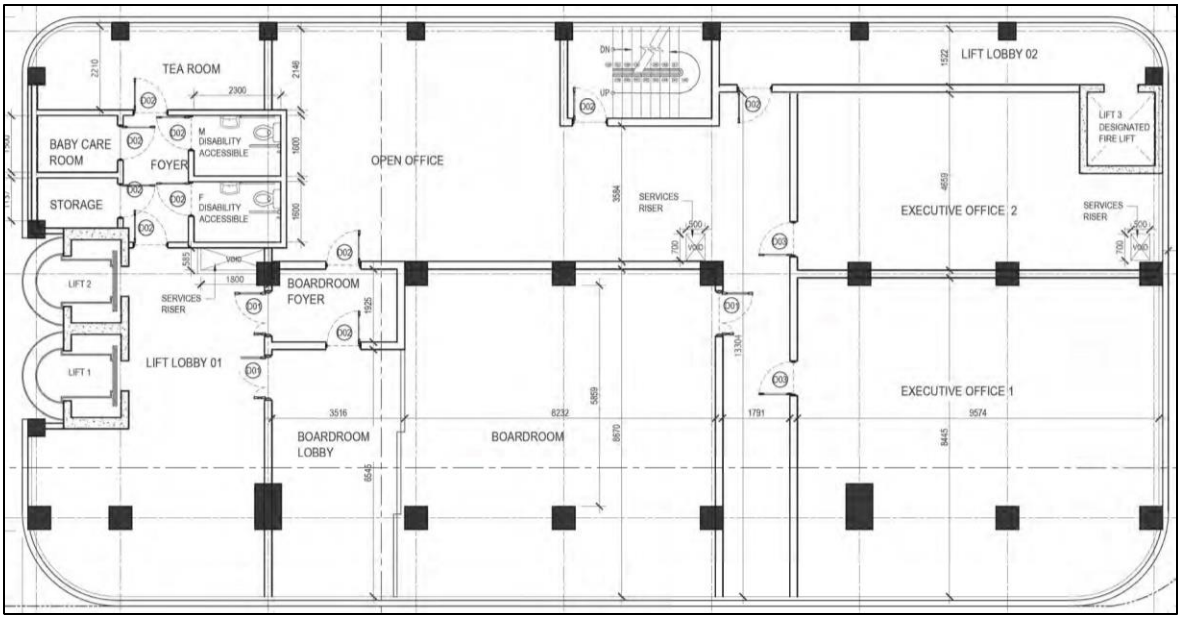


Figure 15: Partial print of proposed layout at eighth floor

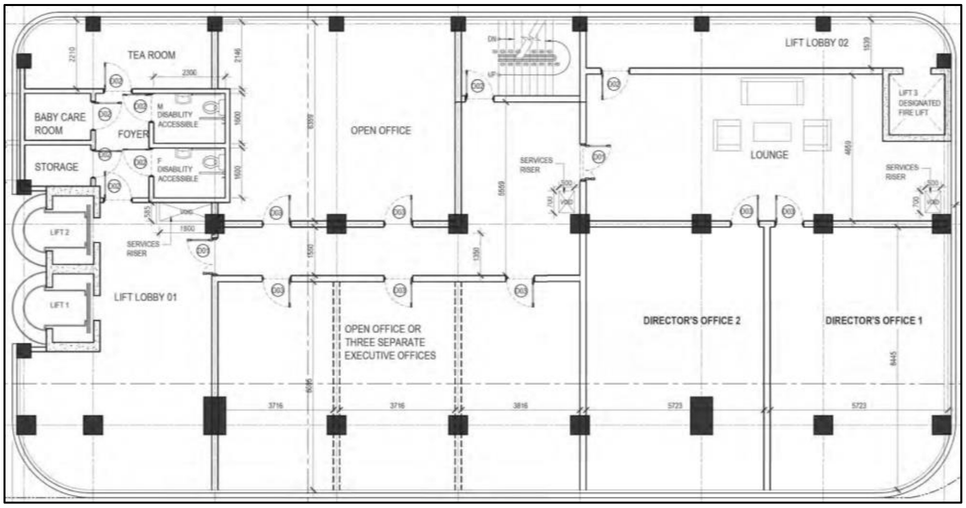


Figure 16: Partial print of proposed layout at ninth floor

4.4.1.6 Terrace floor

The third to nineth floor contains; lounge and an open air lounge, swimming pool, designated fire lift, lift lobby, two toilets with accessibility access, team room, baby care room, storage and passenger lifts.

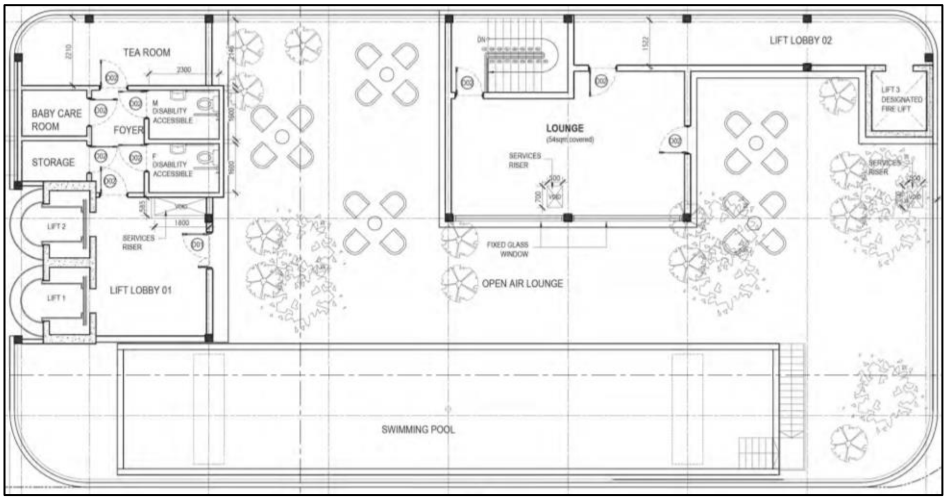


Figure 17: Partial print of terrace floor layout

4.4.2 Project Construction

4.4.2.1 Mobilisation

The materials and equipment required for the project including heavy machinery will be brought to the project site on a need basis. That is adequate materials for foundation will be brought just prior to commencement and materials will be again brought to project site for the construction of each floor separately. The materials shall be temporarily stock-pilled on the project site. Major materials, equipment and machinery required for the project is provided in Appendix P.

4.4.2.2 Decommissioning

Once the project has been completed, contractor leaves the site after performing the required site clearance. Any temporary project facilities will be demolished and the waste will be transported to Thilafushi for disposal.

All heavy machinery brought in by the contractor will be demobilized

4.4.2.3 Project Management

During the construction phase, the following work profile will be utilized.

Table 4: Work profile required for implementation of the proposed project

Designation	**responsibility**
Project manager	Overall responsibility for the implementation of the project
Project engineer	Ensure that works are in accordance to drawings and specifications
Surveyors	Provide layout and levels
Site manager	In charge of site work implementation and coordination
Implementation Supervisors	Ensures that works are carried out according to project managers instructions
Safety supervisors	Assess risk and ensure that everyone follows the safety rules and regulations.
Laborers	Carries out all the tasks

Necessary permits shall be taken from the relevant authority for road blocks during the foundation and flooring works.

4.4.2.4 Construction work regime

All the civil structures will be built using normal construction materials with least possible alterations to the natural environment. The construction waste shall be properly managed and shipped routinely to Thilafushi for disposal. Proper construction sign boards shall be placed for the safety of the workers and general public who use the road.

4.4.2.5 Temporary facilities

Temporary project site setup: a small area within the project site itself will be dedicated for the temporary site setup prior to foundation laying works. Once the first two floors are constructed the ground floor shall be used for this purpose.

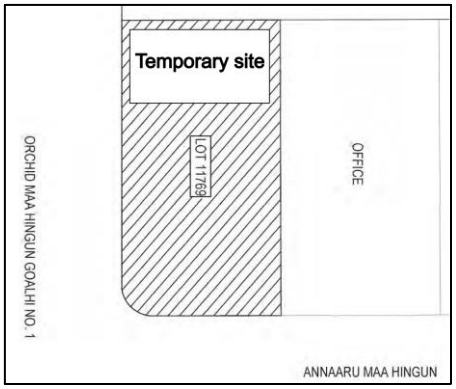


Figure 18: Partial print of temporary site location at project area

Staff accommodation: will be accommodated in the existing housing facilities in Male' City.

Temporary Power: power will be taken from the local utility after getting the approval from them.

Water for construction; water will be taken from the local utility after getting the approval from them.

4.4.2.6 Site preparation and vegetation clearance

Table 5 shows the approximate number of vegetation that needs to be removed for this project.

Table 5: Approximate vegetation that needs to be removed

Species	Number	Storey	Building
Panicum maximum	Few	0-2	Project site
Leucaena leucocephala	12	0-2m	Project site
Leucaena leucocephala	10	2-4m	Project site

4.4.2.7 Construction of building

Area, depth and volume required for excavation; Excavation area for dewatering is the total building footprint area which is 407.25 m2. The depth is -8437mm from ground level. Estimated excavation volume is 3,420m³.

Excavated earth disposal method and location; Excavation work by excavator. Size of excavator is middle and small. The sand will be routinely shipped to Thilafushi for disposal.

Estimated number of days required for dewatering; the dewater period is 90 days.

Dewatered water disposal method and location; Dewatering by water pump (Big water pump for dewatering while small water pump for controlling the level of water). The water will be pumped via temporary pipeline into the sea, through the dewatering route designated by HDC. The dewatering pump specifications are given in Appendix N of this EIA report. Furthermore, the filtration method proposed for the dewatering is provided in Appendix O.

Compensation plan for construction and dewatering related damages; condition of adjacent buildings will be inspected by engineer prior to commencement of construction every day. If any damages are caused due to this project, the damages would be rectified by the contractor.

Shoring method; Shoring is a widely used technique in construction projects to temporary reinforcement belowground excavations. Shoring helps to ensure that lateral walls remain intact and serves as a foundation protection method to prevent collapsing and other dangerous circumstances during excavation. Shoring can be accomplished with a few different ways. Given that this project's extensive excavated area of 701.87 square meters and 9.037 meter deep, sheet piling is recommended.

The "U" section hot rolled sheet pile (AU20) should be driven into the ground until reaching the hard strata. The sheets need to be properly braced by using Steel section C channels of 300x100x46 from all the directions as shown from the drawing. These bracings should be constructed 2 meters above from the foundation bottom level, high enough to be able to work on the foundation. This helps the sheets to be held and prevents from bulging and other effects of soil movements. For additional stability along the longer end to end span of the excavation, two truss bracing are constructed from the middle. The members of the trusses are made of steel pipe of 90 mm diameter and 6 mm thick as shown on the drawing. These truss members should be installed 1 meter below the neutral ground level.

Type of foundation and foundation depth; Raft foundation slab as type of foundation. First formwork will be laid with reinforcing bar. Then concrete will be poured into the formwork.

Concrete batching process and transportation method; Ready mix concrete will be used for the project and will be outsourced to ready mix concrete providers and transportation method will be mixer trucks with pump and boom truck.

Finishing; once the concrete works are finished: workers will use general construction tools for the blocks and masonry works. Electricians will then install all the electrical wires and equipment's. Finally, the interior designers will do the finishing works.

4.4.2.8 Installation of Utilities

Water, sewer and electricity for the building will be installed in accordance with the regulations and guidelines set forth by the relevant utility company which is MWSC and STELCO. The proposed service line drawings for water, sewer and electricity is provided in Appendix Q of this EIA report.

4.4.2.9 Construction and operational phase waste management

Any construction waste shall be properly managed and shipped routinely to Thilafushi for disposal. Proper construction sign boards shall be placed for the safety of the workers and general public who use the road.

Fuel and chemical management are to be handle with utmost care as spillage and contamination of the groundwater is prohibited under the new Water and Sewerage Act (08/2020). Spillage control mechanisms will be in place prior to execution of works and labour force will be trained prior to commencement of the work. A dedicated environmental and social safeguards officer will be employed by the proponent to ensure the safety checks are in place to ensure the implementation of the mitigation and monitoring measures specified in the current report.

If a spill does occur, following actions shall be followed;

- Spill clean-up kits are to be readily available at site
- Works are to be halted immediately and alert all the staff in the vicinity of the spill
- Staff are to take relevant personal protective measures to be ready for spill clean up
- Find the root cause of spill and mend effectively
- Clean up the spill
- Report the incident

4.4.2.10 Project Operation

Once the building is completed the building will be handed over to the proponent operations department which will be in-charge of operationalising the building as and when required.

4.4.2.11 Project duration and schedule of implementation

The construction will commence once the EIA process have been completed. Estimated date is April 2024. Construction works is expected to be completed by February 2027. Refer to Appendix G for a detailed work plan of the proposed project.

4.4.2.12 Tasks already completed

No tasks in relation to project construction have been completed as of yet. However, all the detail drawings for the building has been completed and approved by the respective Government Authorities.

4.5 Project inputs and outputs

The following two tables details the estimated project inputs and outputs for the works to be undertaken in the proposed project. The detailed material list is provided in Appendix P of this EIA report.

Table 6: Major project inputs

Input resource(s)	**Source/ type**	**Qty/Volume**	**Source of resource**
Construction Phase			
Man power	expatriate	Large numbers	Contractor
Construction material	**Temporary site setup**: Galvanized pipes, roofing sheets, toilet units, toilet fittings, cement, sand, timber, spun piles	Small quantities	Local purchase or import
	Concrete works: reinforcement steel bars, river sand, cement, aggregates	Large quantities	Local purchase or import
	Roofing: Timber; Thatch, prefabricated materials.	Large quantities	Local purchase or import
	Electrical: electrical cables and wires, DBs, MMCBs and MCBs, PVC pipes, light weight, telephone cable CAT 5, PVC conduits, 4 core armored cables, PP-R pipe, Multi pump, UPVC (T1000, T600) for sewerage grid	Large quantities	Local purchase or import
	Water and Sewer: HDPE pipes, pumps, control panels, inspection chambers	Large quantities	Local purchase or import
	Finishing: floor and wall tiles, gypsum boards, calcium silicate boards, zinc coated corrugated metal roof, paint, varnish, lacquer, thinner, dry walls, carpet etc.	Large quantities	Local purchase or import
Machinery and equipment	Excavator, Truck, Concrete mixer, General construction tools, Small lorry, forklift, Barge, Dewatering pump, total station, level gage, Crane	Large quantities	Contractor
Operational Phase			

Water	Desalinated water	Est. to be not more 120 liters per person per day for employees	MWSC
Power	Electricity	Large quantities	STELCO

Table 7: Major project outputs

Project outputs	Method of generation/Qty	Method of control
Construction Phase		
Waste water	From workers	Discharged to sea via the existing sewer network in the island
Construction wastes	Waste oils Packaging waste	Waste oil stored in closed labeled containers and transferred to Thilafushi for disposal Packaging waste stored in an area and routinely transferred to Thilafushi for disposal
Noise	Localized to the project site	Unavoidable, but could be minimized by limiting working hours to daytime only and completing the project within the earliest possible duration.
Operational Phase		
Sewerage	By workers, visitors and operations at the building	Managed via the mwsc sewerage services
Waste	Daily waste generation from day to day operations at the building	Managed through wamco services

4.6 Health and Safety, and Emergency Provisions

All the relevant health and safety measurements and emergency provisions such as fire extinguishers, fire proof blankets, fire alarms, gas leakage detectors etc. are to be provided in each floor with respect to the use of the floor space.

4.6.1 Fire emergency evacuation plan

The following is the fire emergency evacuation plan for the building.

Sound of the Alarm

The sound of the Alarm will be:

A continuously ringing bell or a continuous warning siren. If the alarm system fails, the sign will be a shouted warning.

Raising the alarm

If the event of a fire:

If the fire is discovered by one of the staff or guest, they shall notify the building maintenance staff and the alarm will be raised by: activation of the nearest call point or commencing manual warning (Whistle, shout etc.)

If fire is detected by automatic detectors, this will trigger the fire alarm

Actions staff should take on hearing the alarm

The following actions will be taken upon the fire alarm being sounded/raised:

- The designated staff on duty of building maintenance will take charge and lead in the fire evacuation.
- The aforementioned staffs shall be adequately trained to undertake such a task and drills shall be carried out annually. This information shall be informed and sensitized to staff members.

- Dial 118 and request attendance by the MNDF Fire and Rescue Service. Staff member gives their name, name of building, building address, contact number and details of fire.
- Staff will commence evacuation of the building– ensuring this is done in a calm and orderly manner, providing assistance to those needing additional help in evacuating.
- Passenger Lifts are not to be used for evacuation
- Staff to sweep building to ensure all areas are clear, if safe to do so and ensure all doors are closed on the way out
- If safe to do, electrical mains should be switched off before leaving the building. The location of these shall be made annexed to this plan after the detailed electrical drawings of the building is finalized.
- The staff shall ensure nobody re-enters the building until confirmed safe to do so by the Fire Service
- Meet at assembly point and check all personnal are accounted for.
- The staff to liaise with Fire Service upon their arrival

Escape routes

- From each floor to the nearest stairwell and out of the building
- The exit signs shall be properly place with adequate visibility to be located even in case of low visibility due to smoke, absence of light,etc.
- In case the stair case is blocked due to the fire, the staff and occupants are to proceed in accordance to the instructions of the fire and rescue service experts on site

Fighting fires – extinguisher use

Fire extinguishers will only be used where:

- Staff have received training and feel confident in their use
- Where it is deemed safe to do so i.e. there is a clear means of escape, fire is small

Personal safety always takes priority, and if any doubt, staff or occupants should not attempt to extinguish a fire

The locations of the following key safety hazard or other fire related equipment shall be properly maintained by building staffs

- Main fuse box
- Main water inlet
- Gas cylinders
- Location of fire alarm panel
- Location of extinguishers and other firefighting equipment

Responsibilities of the proponent
Ensuring the plan is up to date
Ensuring adequate staff are on duty to carry out the evacuation plan
Training staff on the evacuation plan and in their roles and responsibilities
Short awareness program run annually for all residents/tenants to keep everyone informed

4.6.2 Grievance redress mechanism

Grievance management is a critical component of overall project management to ensure smooth progress and early conflict resolution. As such a grievance officer shall be selected from the proponen, HDC and Male' city council. As the people's representatives, all the complaints from the community shall be received to the city council focal point whom shall then inform to HDC and the contractor's grievance focal point. As such, one week shall be given to resolve or show a way forward with the respective complaint. Although this duration is to be shortened and lengthened depending on the type of complaint, urgency of the matter and complexity of solution. The contact details of the city council's focal point shall be informed to the community around the project site. Furthermore, the status and way forward of the complaints shall be discussed in a bi weekly meeting with the city council, HDC and the contractor. Additional stakeholders can be invited to the said meeting as and when necessary

4.6.3 Measures to protect human health during construction and operation

The proponent and the contractor are responsible for the safety of the staff, and visitors; health and safety rules must be followed strictly.

- The project site and the work area must be fenced.
- Safety signs and boards must be installed at work site.
- Fire extinguishers must be installed at site.
- The proponent and the contractor will ensure that all the supervisors are trained and qualified to identify, report, response to, and mitigate any health code violation on site.
- The proponent, contractor and other supervisory bodies will ensure all the health and safety procedures are followed while in the project site.
- All the precautions and steps will be taken to ensure the safety of the employees. Safety gear will be worn all the time.
- The proponent must ensure that the contractor provides numerous first aid kits on site. This is of the uttermost importance as the island has a health centre and the closet hospital is at best 40 minutes away in the atoll capital.
- The proponent must ensure that the contractor trains enough staffs in basic first aid drills both terrestrial and marine. Hence making these staff available throughout the project work hours while setting the duty roster.

- The proponent must ensure that the contractor reports all medical emergencies to the hospitals.
- If the use of the equipment requires licenses or special permits, the contractor should ensure the staff are licensed.
- All tools and equipment will be handled by competent staff.
- All staff must be trained to follow the emergency plan
- Health checks and safety checks will be administered before commencement of work.
- All project activities will be carried out in the presence of a qualified supervisor.
- The staff will be trained in fire extinguishing drills and appropriate fire extinguishing equipment will be placed at easily accessible points.
- Flammable material if stored on site, will be stored at site appropriately.
- Any tools stored on site will be stored appropriately.
- Oils, grease and lubricants will be stored as specified above in section.

Furthermore, must ensure that;

Mosquitoes, high temperature and drowning prevention measures are taken on site. Drugs are sprayed and mosquito nets are used in the accommodation area; Appropriate drugs are prepared in case of heatstroke. To prevent drowning, a strict management system is to be formulated and performed under supervision. Additionally, fencing the project site, set up entrance and exit, and arrange safety and civilization management personnel for on-site management.

Basic first aid facilities and safety gears shall be made readily available by the contractor during the construction phase of the project as per the regulation on safety standards for construction work. In case of an emergency, the workers shall be taken to a hospital in the greater Male' region (IGMH / Tree top / ADK / Dharumavantha/ Hulhumale' hospital).

Special consideration will be given to take all possible preventive measures of the pandemic of Covid-19 during the construction and operation phase of the project. As such, the recommendations of the Health Protection Agency will strictly be enforced whilst sensitisation sessions will be undertaken to internal controls of health and safety to all the work force

During the operational phase basic first aid facilities and safety gears shall be made readily available to the working staff at the facilities. Occupation health and safety guidelines shall be strictly followed by all personnel

4.6.4 Potential accident and hazard scenarios and how to manage them

Potential hazard scenarios during this project include oil/chemical spills, injury to workers etc. These potential hazard scenarios and how to manage them are detailed in the emergency preparedness and response plan and the health and safety plan.

4.6.4.1 Emergency plan in case of spills

The proponent must ensure that the contractor has an emergency plan, an emergency coordinator and the alternative emergency coordinator.

4.6.4.1.1 Overall emergency plan

The overall emergency plan must be site specific and drafted upon by the contractor and the proponent considering the features of the island and the available facilities of the island. The emergency plan must be understood and followed by all staff. A typical emergency plan must include the following.

- The emergency plan should be followed and executed without delay in case of an emergency.
- Safety Sign Boards and Safety lights must be installed at the work site.
- Fire Extinguishers must be installed at work site.
- All staff must learn the basis of the emergency plan.
- Assembly points must be decided prior to mobilization
- Points of relief must be equipped with medical kits and fire safety kits
- Spill kits must be installed near the storage sites and in easily accessible areas.
- Alarms must be installed and tested

- Informed drills must be carried out at a schedule.
- All staff must be informed that they could call in an alarm.
- All emergency coordinators should be trained well with the alternative.
- In case of an emergency the point of reference must be the coordinator or the alternative.
- In case of an emergency, the emergency coordinator or the alternative must be informed primarily
- All staff must strictly follow the instructions of the emergency coordinator.
- Authorities must be informed by the coordinator or the alternative
- The contractor is required to take the following measures in order to ensure minimal pollution in case of a spill.
- Use serviced machinery to reduce toxic emissions
- Service the machines in use during the work process.
- Keep spill kits on the island and portable spill kits on the machines
- Bund all necessary lubricants and oils stored on site.

4.6.4.1.2 Emergency plan for spill response at the proposed project location

Spills on construction sites can have drastic consequences to people and the environment. After a thorough analysis of the action in hand, the responsible party is to follow the action plan as specified. However, the best form of action is prevention therefore the following spill prevention measures must be implemented on site.

General Precautions

The following general precautionary measures shall be applied to all construction works areas to minimize the risk of accidental spillage;

- Maintain good site housekeeping practices and ensure all materials, chemicals and wastes are properly stored and placed in appropriate disposal areas onsite at the end of each day.
- Avoid disorder and storage of unnecessary materials in working areas.

- Open flames and smoking shall be prohibited within the construction site; smoking may be permitted only at designated smoking areas.
- Stacked containers should be secured from falling.
- Large / heavy containers should be stored on the floor as far as possible to prevent falling.
- Warning signs, fences and locks where appropriate should be deployed for storage place of hazardous materials, chemicals, fuel and oil, etc.

Chemicals, Oils and Fuels

For chemicals, oils and fuels (if used for the excavators, etc.) required and used onsite, the following measures shall be applied:

For procurement;

- Label all chemical storage containers and tanks in accordance with the EPD 'Code of Practice on the Package, Labelling and Storage of Chemical Wastes'.
- An up to date list of chemicals, chemical waste and fuel oil should be maintained.

For storage;

- Suitable containers should be used which are resistant to the stored oil fuel, chemical / chemical waste to avoid leakage.
- Containers should be checked before use and container lids should be closed tightly to avoid leakage of chemicals and chemical waste.
- Chemical waste storage areas should be located in a designated area that is sheltered on at least 3 sides and the top, and is locked and kept clean and free from obstruction.
- Incompatible chemicals should be separated.
- Chemical, oil and fuel containers should be kept under eye level as far as possible.
- Drip trays or bunds should be used for storage containers of chemicals and oil / fuel tanks and should have a capacity equal to 110 % of the storage capacity of the largest tank.

- Chemical storage area and drip trays should be inspected daily to ensure the containers are in good condition and there are no openings which oil / chemicals can possibly leak out. Any damage / openings to the storage area and drip trays should be repaired or replaced immediately.
- Where chemicals are temporarily taken outside the sheltered chemical storage area, the chemicals including the drip trays / bund should be covered by waterproof tarpaulins and kept free of rainwater.

For transfer / transport;

- Pumps should be used to transfer large quantities of oil, fuel, chemical / chemical wastes instead of pouring.
- Oil, fuel, chemical / chemical wastes should be transferred slowly to prevent spillage or overfilling.
- Suitable trolley should be used to transport chemicals / chemical wastes to other location.

For use;

- Chemical quantities / dosage required during each use shall be carefully calculated / measured to prevent any excess chemicals being generated and released.
- Drilling fluid used in drilling activities should be reconditioned and reused as far as possible.

Spill response

Effective spill response comes down to the reediness of the contractor to a potential event. This in effect enables the contractor to respond to any related unidentified event as well. Spill response simplified can be shown in as below.

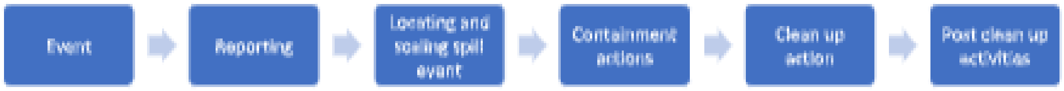


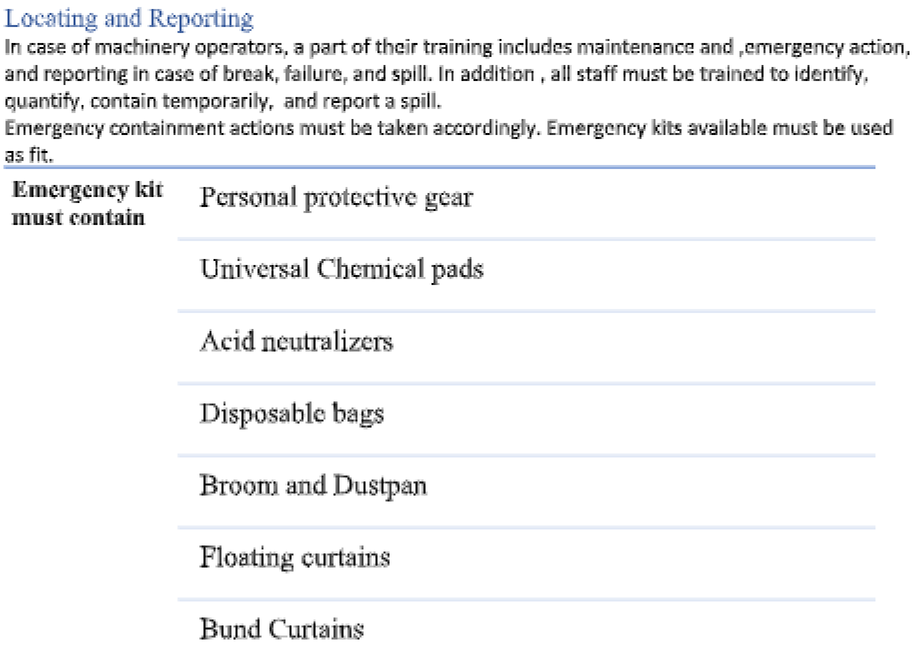
Figure 19: spill response procedure

In this specific project, three major types of spills involved are listed.

Construction Phase		
Spill Types	Land Based Activities	Marine based Activities
Fuel/ Oli	✓	NA
Chemicals	✓	NA
Fill materials	✓	NA

Locating and Reporting

In case of machinery operators, a part of their training includes maintenance and, emergency action, and reporting in case of break, failure, and spill. In addition, all staff must be trained to identify, quantify, contain temporarily, and report a spill. Emergency containment actions must be taken accordingly. Emergency kits available must be used as fit.

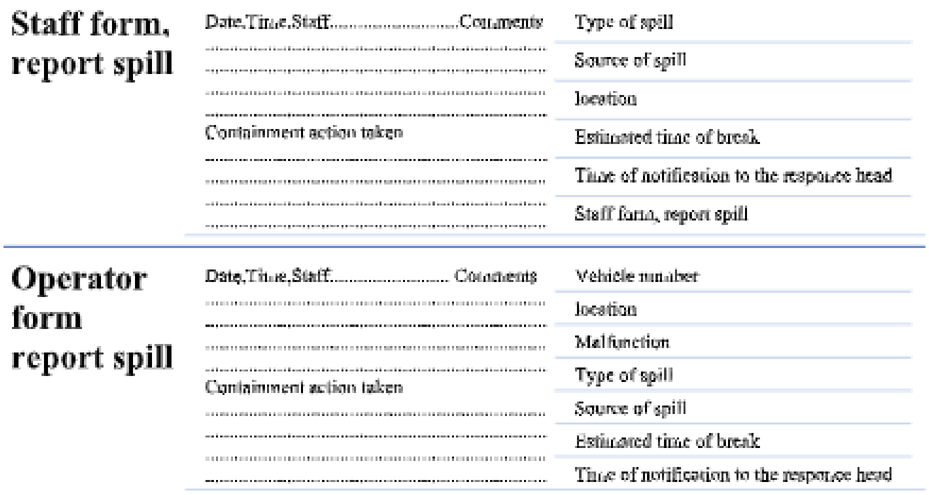


Locating and Reporting

In case of machinery operators, a part of their training includes maintenance and ,emergency action, and reporting in case of break, failure, and spill. In addition , all staff must be trained to identify, quantify, contain temporarily, and report a spill.
Emergency containment actions must be taken accordingly. Emergency kits available must be used as fit.

Emergency kit must contain	Personal protective gear
	Universal Chemical pads
	Acid neutralizers
	Disposable bags
	Broom and Dustpan
	Floating curtains
	Bund Curtains

Reporting must have the following parameters;



Staff form, report spill	Date,Time,Staff..........................Comments	Type of spill
	....	Source of spill
	....	location
	....	Estimated time of break
	Containment action taken	Time of notification to the responce head
	....	Staff form, report spill
	....	
	....	
Operator form report spill	Date,Time,Staff.......................... Comments	Vehicle number
	....	location
	....	Malfunction
	....	Type of spill
	Containment action taken	Source of spill
	....	Estimated time of break
	....	Time of notification to the responce head
	....	

After reporting, the response head must follow directions from the government to the fullest extent

5. EXISTING ENVIRONMENT

This chapter describes the existing environmental conditions of the proposed project site. Sections 5.1 describes the general environmental condition of the Maldives and 5.2 outlines the general climatic conditions by analyzing data from the meteorological center of the Maldives. Sections 5.3 to 5.4 details the specific environmental conditions at the proposed project site.

5.1 The Maldivian Setting

Maldives, officially known as the Republic of Maldives and sometimes referred to as the Maldive Islands, is an island nation (Zahid, 2011) consisting of nearly 1192 islands on a double chain of 26 natural atolls (administratively divided into 20 atolls), 80-120 km wide, in the Laccadive Sea in the Indian Ocean (State of the Environment 2004, 2004). Elevating less than 3 meters above mean sea level, with 80% of land area less than 1 m, Maldives is the flattest country in the world. The total area is about 107,500 km^2 of which roughly 300 km^2 of landmass (Zahid, 2011), with a population of about 338, 434 (as per September 2014 census) (Maldives' Population Dynamics: Policy Prospects for Human Growth and Opportunity, 2016) spread over 194 inhabited islands (Statistical Yearbook of Maldives 2010, 2010). Stretching 860 km from latitude 7°6"35"N, crosses the Equator to 0°42"24"S, and lies between 72°32"19"E and 73°46"13"E longitude (Zahid, 2011). These coral Atolls are located on the 1600 km long Laccadives-Chagos submarine ridge extending into the central Indian Ocean from the SW coast of the Indian sub-continent (State of the Environment 2004, 2004).

The Atolls vary greatly in shape and size as well as the characteristics of the Atolls, reefs and reef islands vary considerably from north to south. The northern atolls are broad banks, discontinuously fringed by reefs with small reef islands and with numerous patch reefs and faros in the Lagoon whereas in the southern atolls, faros and patch reef are rarer in the Lagoon, continuity of the atoll rim is greater and a larger proportion of the perimeter of the Atolls is occupied by islands. The islands also differ depending on location, form and topography. The islands vary in size from 0.5 km^2 to around 5.0 km^2 and in shape from small sandbanks with sparse vegetation to elongated strip islands. Many have storm ridges at the seaward edges and a few are characterized by swampy depressions in the center (State of the Environment 2004, 2004).

Located on the equator, Maldives experiences a warm, humid tropical climate or a monsoonal climate with two distinct seasons known as the northeast monsoon (dry season) from January to March and southwest monsoon (wet season) from May to November (State of the Environment 2004, 2004). The southwest season brings in torrential rain (Zahid, 2011) and rainfall varies from north to south along the atoll chain, with a drier north and wetter south (State of the Environment 2004, 2004). Rainfall varied from 1,407 mm to 2,707 mm interannually over the last 30 years. May, August, September and December are the wettest months and January to April the driest (State of the Environment 2004, 2004).

The annual and seasonal temperatures vary very little with a mean annual temperature of 28°C (State of the Environment 2004, 2004); however, the diurnal temperature fluctuates from 31°C during the day to 23°C at night. This is associated with the small size of the islands and the tempering of the hot days by cooling sea breezes surrounding the islands (Zahid, 2011). The highest and lowest temperatures on record are 36.8°C on May 1991 and 17.2°C on April 1978 respectively (State of the Environment 2004, 2004).

Ocean currents are driven by the monsoon winds with the westerly flowing currents dominating the northeast monsoon and easterly currents dominating the southwest monsoon. Changes in current flow patterns occur in April and December corresponding to the transition periods of the southwest and northeast monsoons respectively. Currents near the shoreline slightly differ from oceanic currents depending on the location, orientation and morphology of the reefs and underwater topography (Zahid, 2011).

Sea surface temperature (SST) is reasonably constant throughout the year and ranges between 28 to 29 °C. Mean monthly SST rises from December/January to April/May. However, May 1998 experienced a mean monthly SST of 30.3 °C which is expected to occur every 20 years. Furthermore, temperature drops rapidly to below 20 °C at a depth of 90-100 m (State of the Environment 2004, 2004).

5.1.1 Geology and Geomorphology

Earth's crust, called the lithosphere, consists of 15 to 20 moving tectonic plates. The plates can be considered as cracked shell that rest on the hot and molten rock of Earth's mantle and fit closely against one another. The heat from radioactive processes within the planet's interior causes the plates to move toward and away from each other which is known as tectonic shifts (NOAA, 2021).

Maldives in located on the Indo-Australian plate which is among the 7 major plate tectonic boundaries found on Earth. The Indo-Australia plate which is a combination Australian and Indian Plates covering a total area of about 58,900,000km2. However, they are generally considered to be two separate plates (Earthhow, 2021).

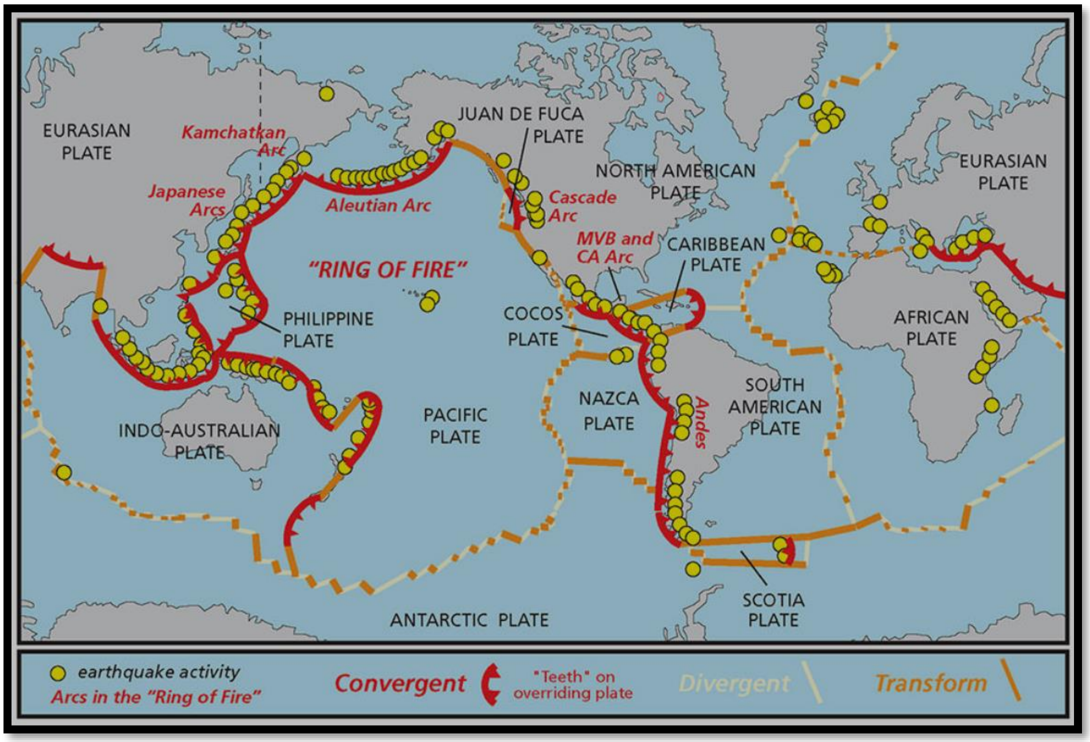


Figure 20 : Shows all the major tectonic plates and their general movements

Maldives is an archipelago of islands. Maldives is made up of 26 natural chain of atolls covering over 90000 square kilometer in the sea. The islands stretch for 822 km from north to south, with the greatest width from west to east being 130km. The land area of all the islands amounts to 298km2 (Belopsky & Droxler, 2004).

The inner sea of the atolls mostly have shallow depths compared to the rest of the outer sea with depths ranging from 300 to 500m (Purdy & Bertram, 1993). The following figure shows a general bathymetric map highlighting the changes in depth within and outside waters in and around Maldives.

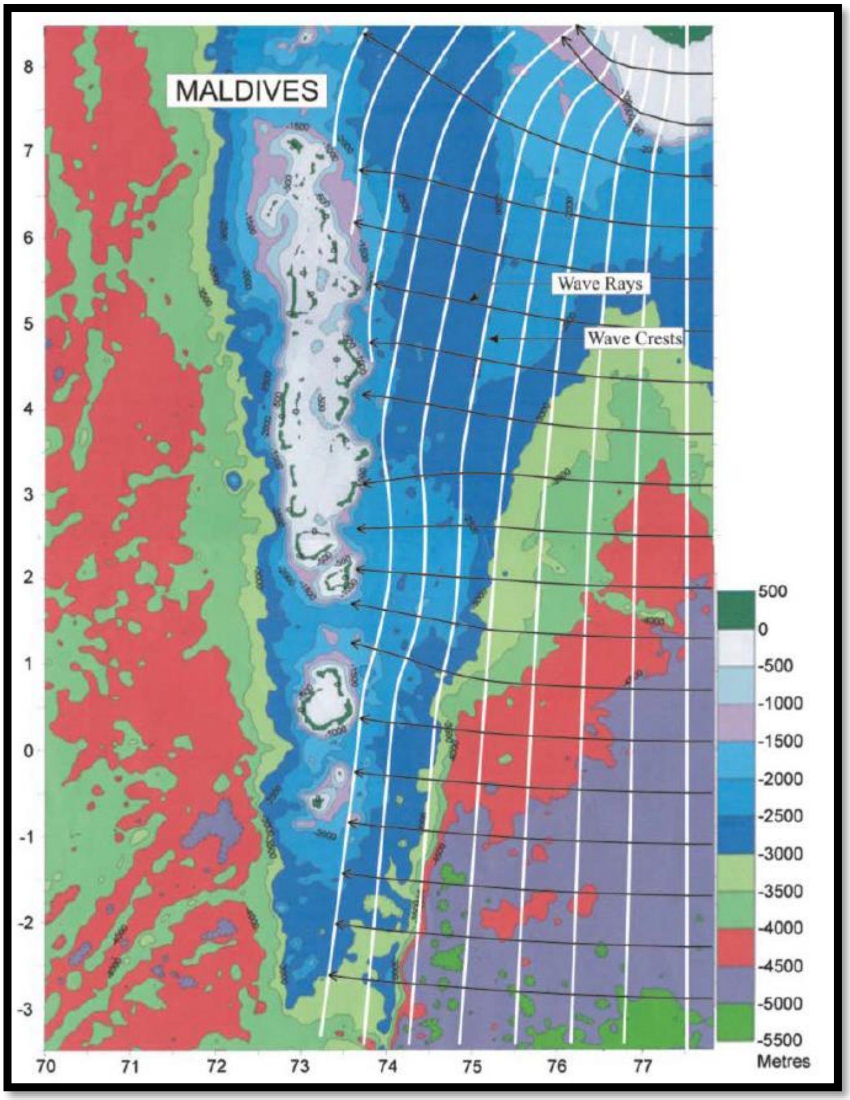


Figure 21: Shows the general bathymetry of Maldives (riyan Pte.Ltd, 2013)

Most of the islands have high peripheral storm berms formed due to overwash with maximum elevations of 2.2m above mean sea level (MSL). The present-day beach is deposited against the vegetation line of the island. The seaward boundary is defined by a distinct break in slope associated with the transition from unconsolidated beach sediment to the fixed reef flat substrate in which beach and shoreline move freely. Beach width varies considerably for each individual island (Kench, P S; Brander, R W, 2006).

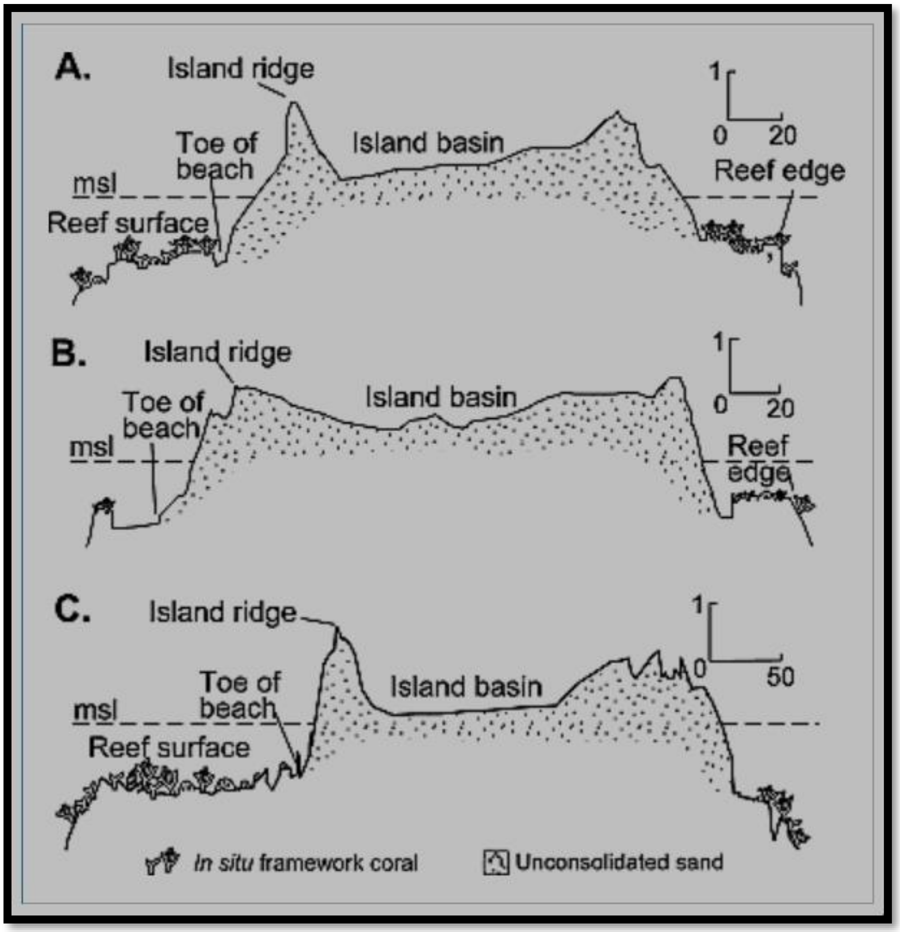


Figure 22: Shows some morphological features in an island system (Kench, P S; Brander, R W, 2006).

5.2 Climatic Conditions

The Bureau of Meteorology of Maldives has compiled a range of climate variables since 1975 from five different meteorological stations located across the Maldives. Climate variables including temperature, rainfall, and wind were analyzed for the nearest meteorological station to

K. Hulhumale’, which is Hulhule’ meteorological center at geographic coordinates of 336864.00 m E, 463615.00 m N, about 2.34 Km from K. Hulhumale’. Location of Hulhule’ meteorological center with respect to K. Hulhumale’ is shown on Figure 23 below.

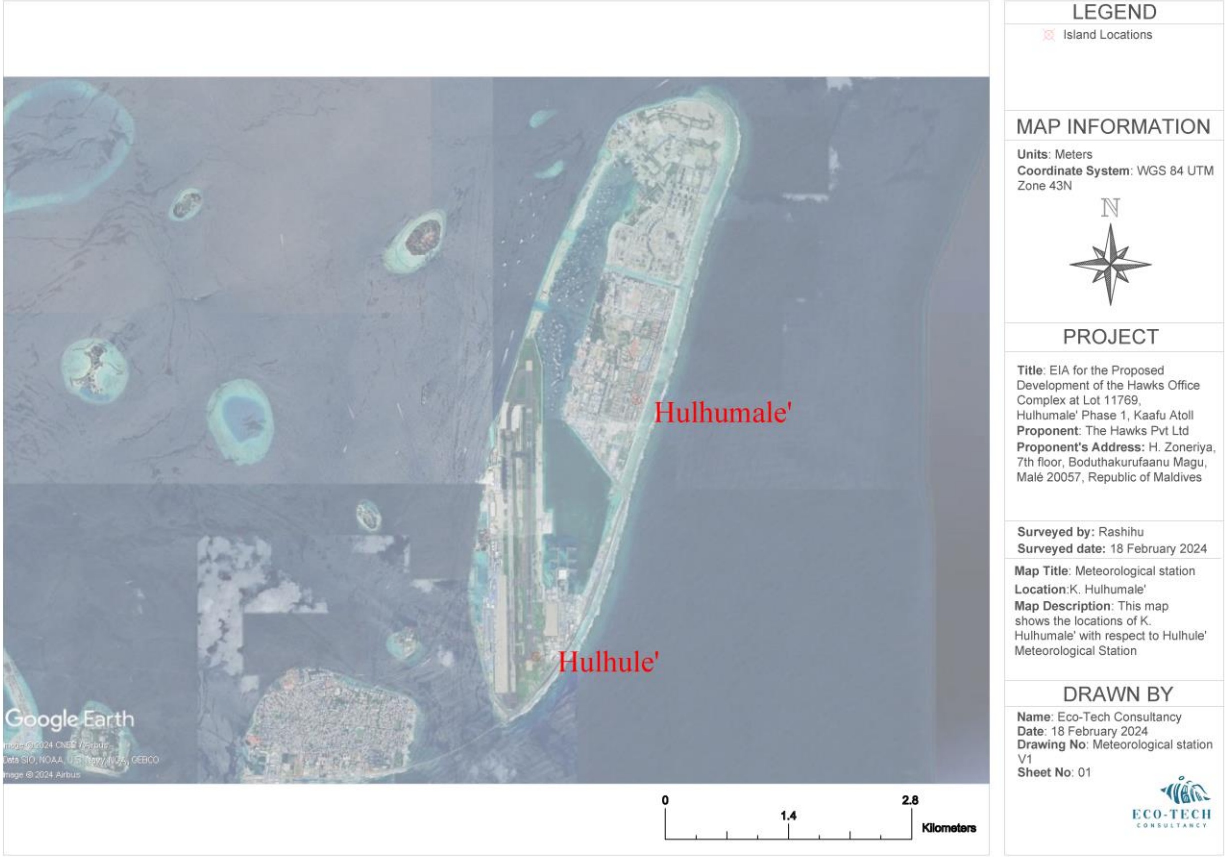


Figure 23: Location of K. Hulhumale’ with respect to Hulhule' meteorological center

5.2.1 Temperature

Analysis of temperature data shows that the variation in temperature throughout the year is generally very minimal, however, daily temperature ranges from 34.9°C during the day to 19°C at night. Looking at the monthly variation in temperature, the highest temperature was recorded for the month of April from the meteorological station in Hulhule’ reading 31.8°C over the past

49 years. With regards to the minimum temperature, the lowest temperature at Hulhule', 25.4°C was recorded for November.

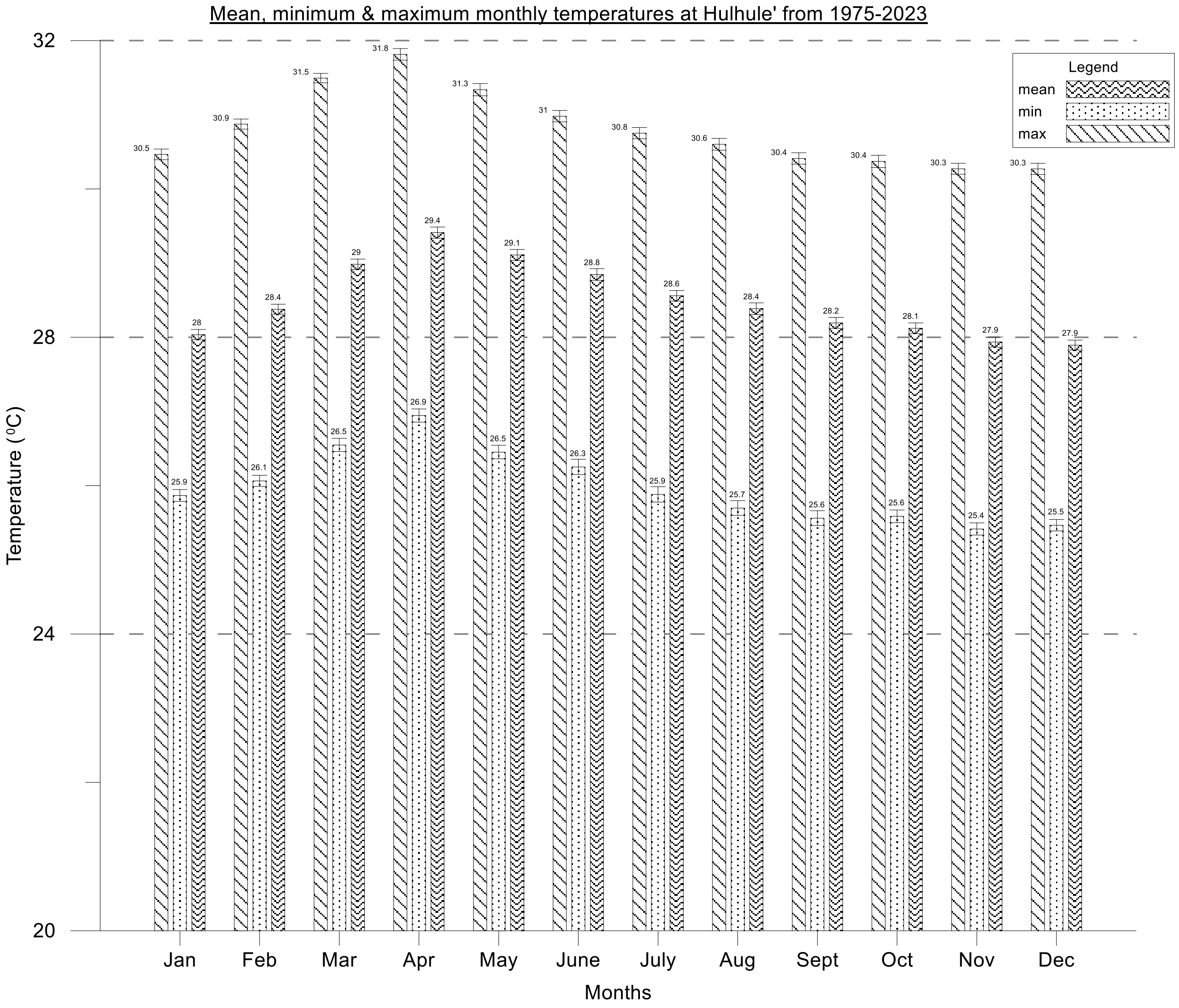


Figure 24: Mean, minimum, and maximum monthly temperatures for Hulhule' from 1975 to 2023 (Data obtained from the Maldives Meteorological Service)

5.2.2 Rainfall

Maldives experiences a monsoonal climate due to it being located on the equator. The wet season (Northeast monsoon) marked from mid-May to November and the dry season (Southwest monsoon) from January to March used to see distinct rainfall patterns. Climate change has made the monsoons and rainfall patterns slightly unpredictable the past few years, but the trends have stayed fairly similar. Analysis of rainfall data from 1975 to 2023 at Hulhule' meteorological station shows that the mean monthly rainfall follows the traditionally defined seasons with most rain occurring from May to December and little rain falling outside these months. The highest amount of rain was observed during the month of October with approximately 238 mm of rain on average and the lowest rain was experienced in February, averaging only about 39.5 mm of rain over the past 49 years.

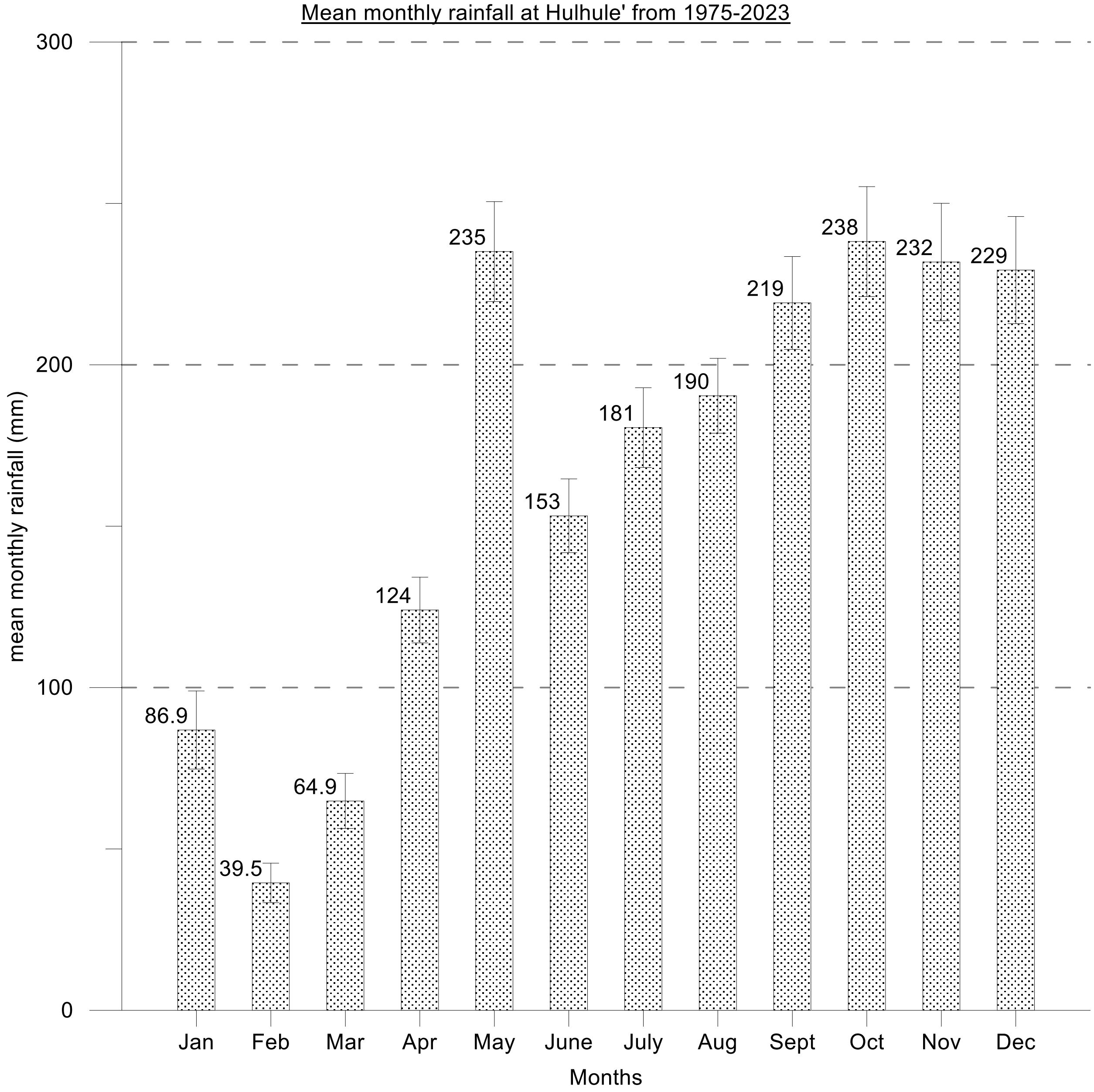


Figure 25. Mean monthly rainfall (mm) for Hulhule' from 1975 to 2023 (Data obtained from the Maldives Meteorological Service)

5.2.3 Wind

Climate in the Maldives is dominated by the Indian monsoon climate South West (SW) monsoon and North East (NE) monsoon. The Indian monsoon system is one of the major climate systems of the world, impacting large portions of both Africa and Asia.

The period of the year during which prevailing winds are from south to westerly direction is known as the SW monsoon (Kench, P.S., Parnell, K.E. & Brander, R.W., 2009). The period during which prevailing winds are from north-easterly directions is known as NE monsoon. Transitions from NE to SW monsoon and vice versa are distinctly different from SW or NE monsoon. During these transition periods the wind becomes more variable.

The SW monsoon lasts between May and September while the NE monsoon lasts between December and February. The period between March and April is the transition period from the NE monsoon to SW monsoon known locally as the *Hulhangu Halha*, while the transition period from SW monsoon to NE monsoon is known as *Iruvai Halha*. *Iruvai Halha* is from October to November (Table 8). SW monsoon is generally rough and wetter than the NE monsoon. Storms and gales are infrequent in this part of the globe and cyclones do not reach as far south as the Maldivian archipelago.

Table 8: The four seasons in the Maldives. Source DHI (1999).

Season	Month
NE-Monsoon	December
	January
	February
Transition Period 1	March
	April
SW-Monsoon	May

	June
	July
	August
	September
Transition Period 2	October
	November

By analyzing the available wind data from the meteorological station, a windrose was drawn (Figure 26 and Figure 27). The wind speed classes have been categorized according to the beaufort wind scale (Trujillo & Thurman, 2016). According to this scale wind speeds of 4-6 knots are light breeze, 28-47 knots are gales and wind speeds greater than 48 knots are considered as storm. The following table shows the beaufort wind scale.

Table 9: Beaufort wind scale

Beaufort number	Descriptive term	Wind Speed (knots)
0	Calm	0-1
1	Light air	1-3
2	Light breeze	4-6
3	Gentle breeze	7-10
4	Moderate breeze	11-16
5	Fresh breeze	17-21
6	Strong breeze	22-27
7	Near gale	28-33

8	Gale	34-40
9	Strone gale	41-47
10	Storm	48-55
11	Voilent storm	56-63
12	Hurricane	64 +

Looking at the mean wind speeds and direction for Hulhule', it was observed that the strongest winds occur from W and WNW directions (in the SW monsoon) and NE, ENE, and E direction (in the NE monsoon). Winds from the South and SE were less prevalent and with comparatively low speeds. Majority of the times, winds occur at a speed of 7 to 16 kn which is generally known as gentle to moderate breeze. Mean wind speeds above 22 kn occurred from the Western quadrant (W and WNW) to a very low occurrence.

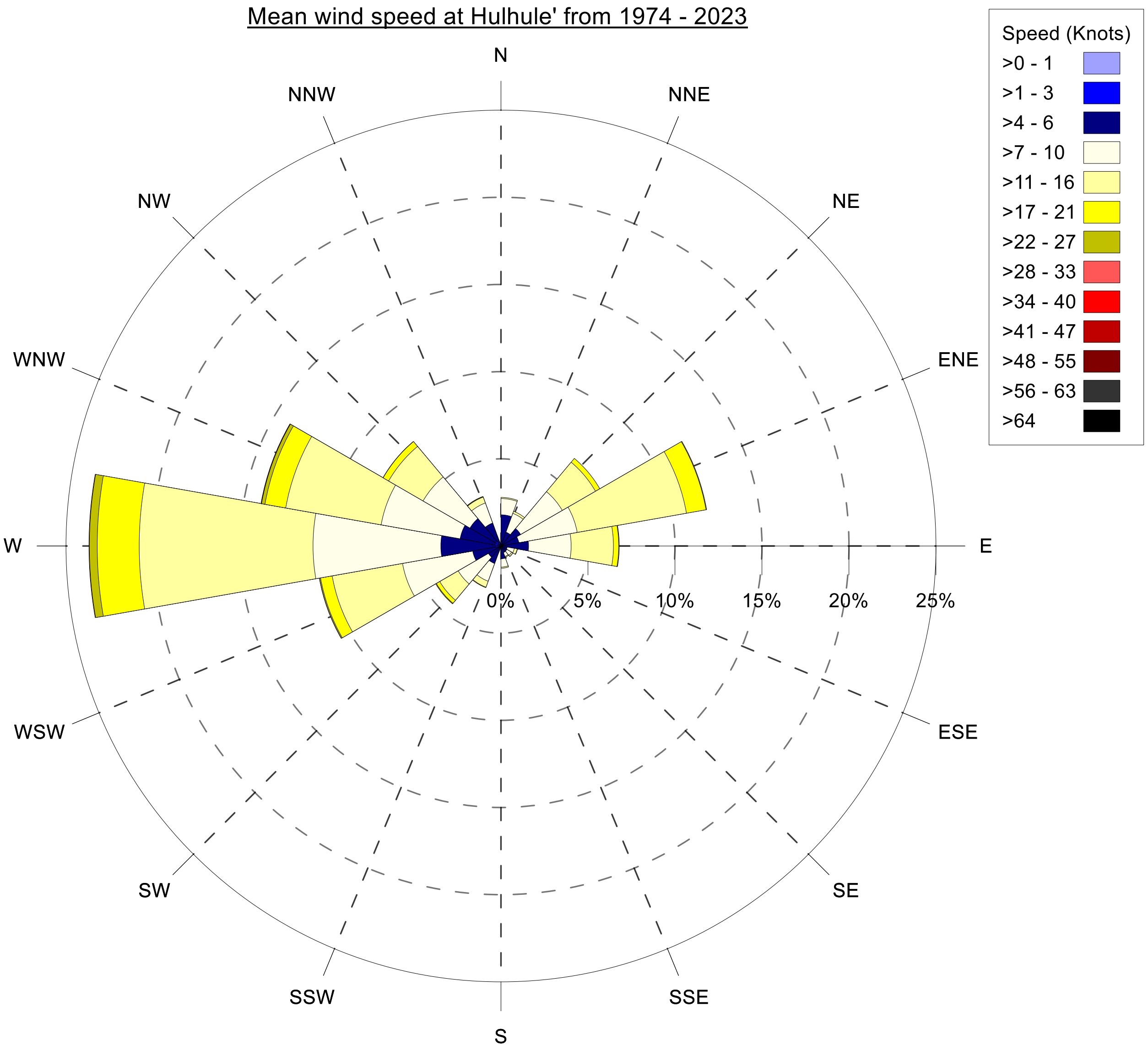


Figure 26:Mean wind speeds for Hulhule’ from 1975 to 2023 (Data obtained from the Maldives Meteorological Service)

With respect to maximum wind speeds, visual inspection of the wind rose plot coincides with that of the mean wind speeds. Approximately 2% of the times, wind speeds had gone as high as > 40 kn at this region. The highest recorded maximum wind speed for the region was 62 kn on

03rd November 1978 during the data collection period. The most common maximum wind speed is between 7-27 kn.

Wind rose plots for both maximum and mean wind speeds show that winds from the West are dominant (24 % and 22% of the times respectively).

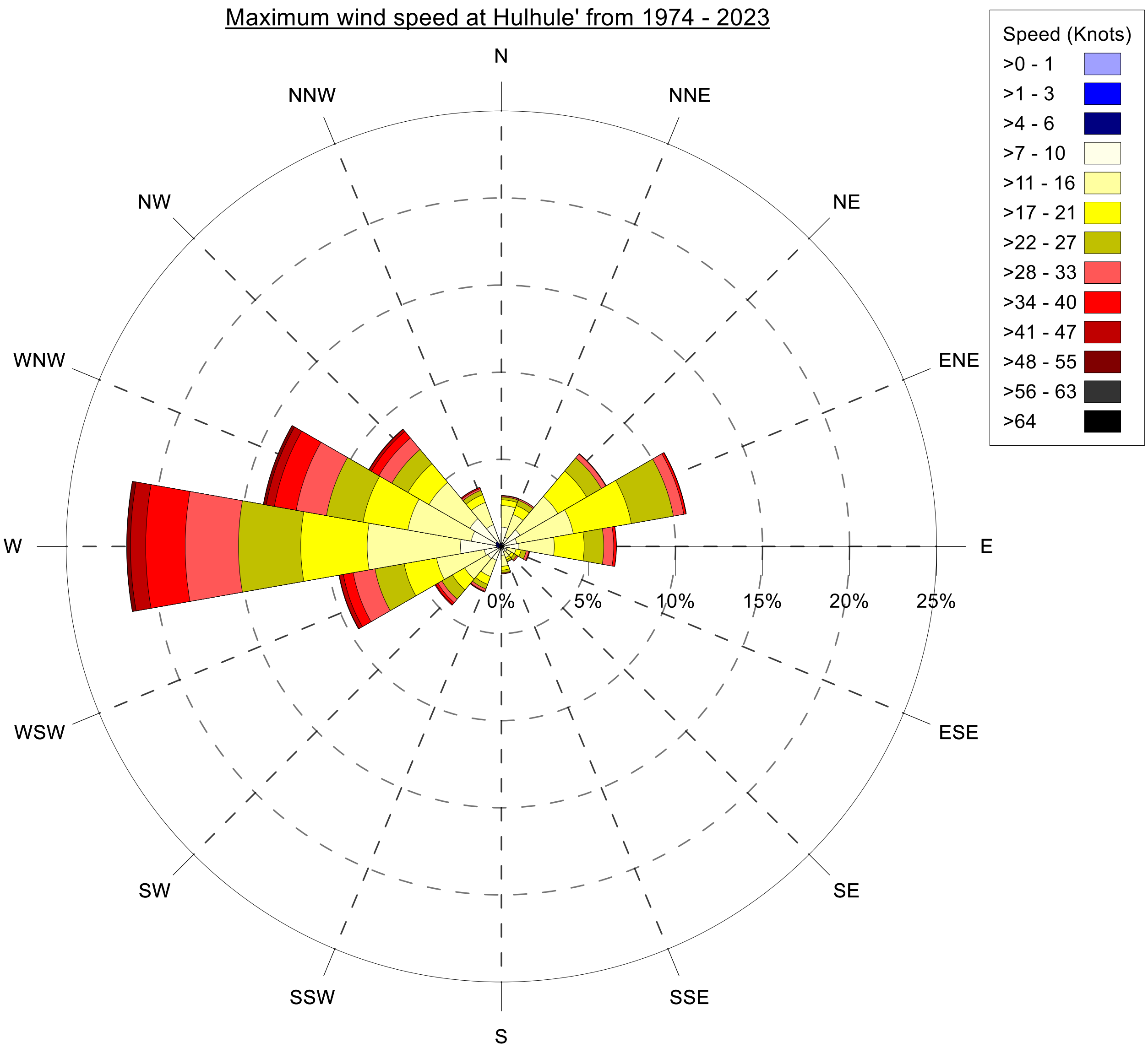


Figure 27: Maximum wind speeds for Hulhule' from 1975 to 2023 (Data obtained from the Maldives Meteorological Service)

5.3 General Setting of Hulhumale'

Hulhumalé, located in the southern part of the North Male' Atoll at geographic coordinates of 338033.00 m E and 465710.00 m N. The reef system hosts Hulhule' apart from Hulhumale'. The land area of K. Hulhumale' is about 400 Ha.

Hulhumalé is a reclaimed island. This artificial island is constructed through the process of dredging and depositing sand from the ocean floor. Its development serves to address the present and future demands for housing, industrial, and commercial spaces in the Malé area, while also acting as a response to the escalating threat of rising sea levels. On May 12, 2004, President Maumoon Abdul Gayoom officially inaugurated the settlement.

The responsibility for the development and administration of Hulhumalé rests with a government-owned entity known as the Housing Development Corporation. This corporation, initially established as the Hulhumalé Development Unit and later rebranded firstly, as the Housing Development Corporation, which was formally incorporated on March 23, 2005. On the occasion of its 22nd anniversary, Housing Development Corporation (HDC) rebranded once more as Urbanco.

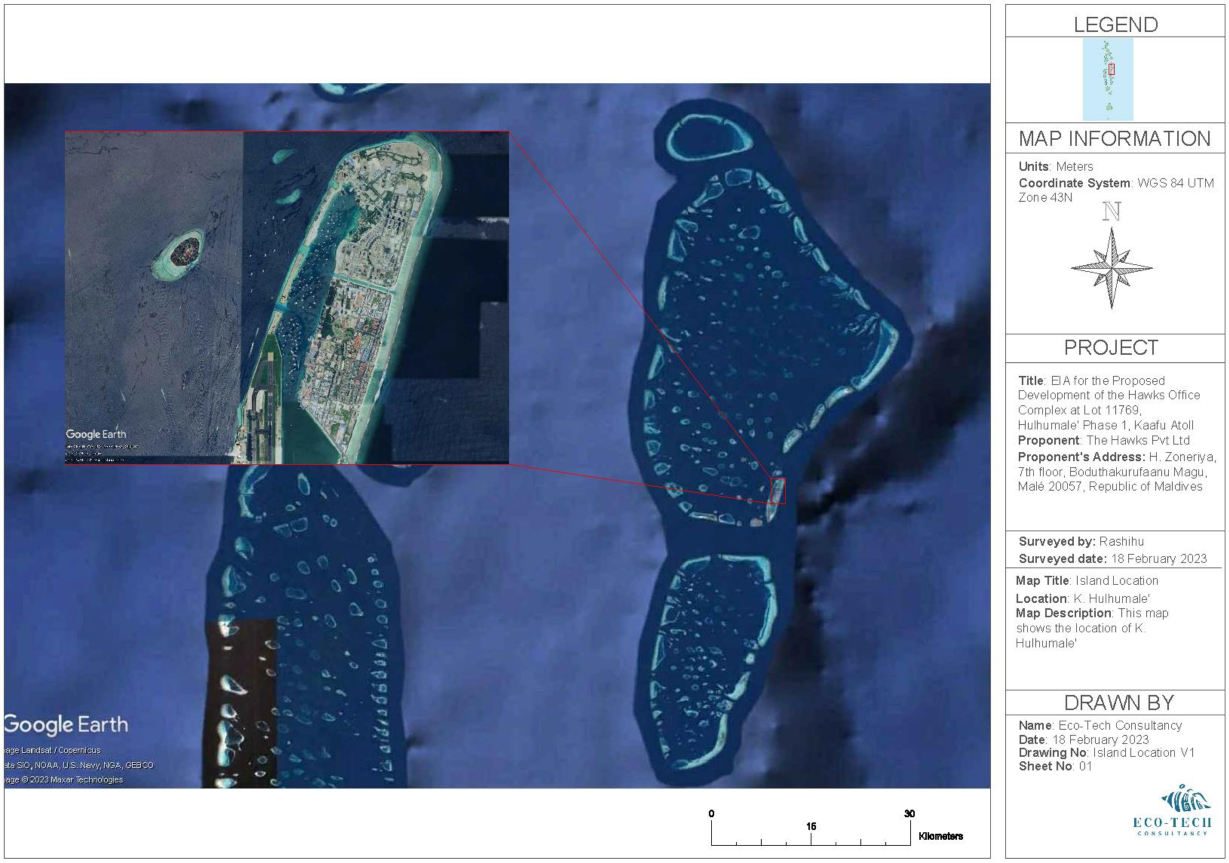


Figure 28. Location of Hulhumale' in Kaafu atoll

5.4 Terrestrial Environment of Hulhumale'

This section describes the site-specific terrestrial environmental conditions of the proposed project site. The structural environment, ground condition, noise levels, air quality, vegetation and ground water quality results are presented.

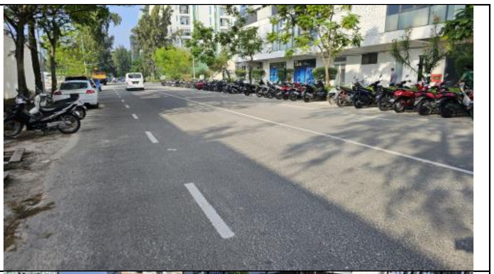
5.4.1 Structural Environment at Project Site

The condition and use of the project area is summarized on the Table 10

Table 10: Condition and use of buildings near and on project site

Building or Road Name	Location	Condition	Use	Pictures
Asters Godown	(Near project site) South of project site	Satisfactory condition Building still under construction	Storage warehouse	
Umar Zahir Building	North of Project site	Good condition No cracks or damages were observed	Government office building	
AG Office Building	West of project site	Plot boundary is closed off with tin sheets. On going construction	Upcoming Office building	

Marina View Apartments	West of project site	Good condition No damages were observed	Local residence	
Masjid Al-Asdiqa	SW of project site	Good condition No damages were observed	Mosque	
Football Pitch	South of project site	Good condition	Recreational activities	
Treetop Hospital	SE of project site	Good condition	Hospital	
Fithroanu Magu	Main road west of project site	In good condition Cable or pipeline laying works were in progress, asphalt from roadside was removed	For Transportation	

				
Orchid Maa Hingun	(Near project site) North of project site	In good condition No damages were noticed	For Transportation	

5.4.2 Ground Condition

Ideally, soil has 5 different master horizons or layers which is O, A, E, B, and C, where O is the organic horizon (Soil Management, n.d.), A-horizon which contains significant organic matter, E-horizon which is the eluviation zone where organic matter accumulation has not occurred, B-horizon which is the zone of maximum clay accumulation, C-horizon which is a subsurface layer of soil forming parent materials which could be weathered rock, unconsolidated sediments or loose sands, and R-horizon which is not soil and is the hard bedrock (Figure 29)

- O = The layer of organic matter on the surface of a mineral soil
- A = Topsoil. The mineral soil horizon on the surface with organic matter and low clay
- E = The horizon of maximum leaching. Not in all soils, but if present, is located just below the "A" horizon
- B = Subsoil. Horizon most often located below A horizon. The zone of maximum clay accumulation
- C = Weathered rock. Lies below the "A" and/or "B" horizons and has NOT been acted upon by the soil forming processes
- R = The hard, consolidated rock beneath the soil

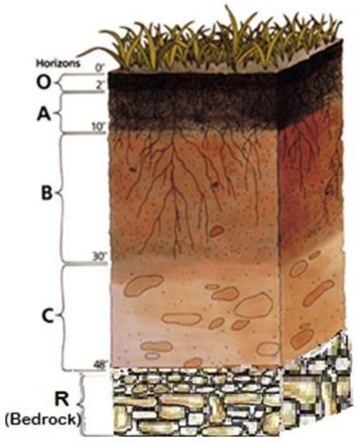


Figure 29: Typical soil profile

Soil profile was taken from the well that was dug to obtain the groundwater samples at site G1. At G1 1 distinct horizon was visible, which was C horizon. Ground water level was at 152.4 cm.

Figure 30: soil profile at site G1

5.4.3 Ground Water Quality

Ground water quality was compared with the EPA supply water quality standard guideline value as follows:-

Table 11: ground water quality optimal ranges

Parameter	Optimal Range	Reference
Temperature(^{0}C)	NA	URA
pH	6.5-8.5	URA
Electrical Conductivity (max allowable range)	<1000 µs/cm	URA
Electrical Conductivity (recommended range)	300 - 700 µs/cm	URA
Salinity	NA	URA
Total Dissolved Solids (max allowable range)	<500 mg/L	URA
Total Dissolved Solids (recommended range)	150 - 350 mg/L	URA
Total Petroleum Hydrocarbon	0 mg/L	URA
Dissolved Oxygen	NA	URA
Total Coliform (MPN/100ml)	0/100ml CFU	URA
Faecal Coliform (MPN/100ml)	0/100ml CFU	URA

All the tested samples were within optimal ranges except for pH and coliforms. Both faecal and total coliforms were above 2420 MPN/100ml at both tested locations, indicating that the groundwater at this area is highly contaminated. pH was above optimal range at site GC (8.9), while at the project site G1 it was within the optimal range at 7.9.

Table 12: Groundwater quality test results (parameters exceeding EPA standards are highlighted in red)

Location	**G1**	**GC**
Temperature(^{0}C)	23.6	23.7
pH	7.9	8.9
Conductivity (µS/cm)	688	245
Salinity (%)	3.4	1.2
Total Dissolved Solids (mg/L)	344	122.7

Dissolved Oxygen (mg/L)	7.58	5.36
Total Coliform (MPN/100ml)	>2420	>2420
Faecal Coliform (MPN/100ml)	>2420	>2420

**Ex-situ temperature readings*

5.4.4 Vegetation

2 different types of vegetation species were found at the project sites, the scientific name and Dhivehi names of these are listed in Table 13. At the site there were 10 *Leucaena leucocephala* reaching heights of 2-4 m. Furthermore small patches of *Leucaena leucocephala* and *Panicum maximum* were found at ground level.

Table 13: Scientific names and Dhivehi name for vegetation species encountered on Hulhumale' plot 10318

Dhivehi name	Scientific name
Ipil-ipil	Leucaena leucocephala
Onuhui	Panicum maximum

5.4.5 Air Quality

Air pollution can become an environmental problem in the future, primarily as a byproduct of increasing number of vehicles, increase in construction sites and increase in population. Furthermore, with gradual increase in population density, the impact on air quality due to pollution of the island would gradually increase. Hence, it is very important to monitor air quality on an island level when tourism is a major contributor to the island's economy. Eight major air pollutants are highlighted in this study to monitor the air quality. These are Methyl aldehyde or Formaldehyde (HCHO), Total Volatile Organic Compounds (TVOC), PM2.5, PM10, Carbon Monoxide (CO), Carbon dioxide (CO2), Sulfur Dioxide (SO2), and Nitrogen Dioxide (NO2).

5.4.5.1 HCHO

Formaldehyde is an organic compound with the chemical formula HCHO. This compound is widely used in cosmetics, clothing, construction materials, disinfectants and preservatives

(Friedman, 2022). This gas can also be generated by smoking indoors. The expected health effects due to prolonged exposure to formaldehyde and the recommendation optimal ranges are provided in Table 10.

5.4.5.2 TVOC

TVOC is the measure of total amount of volatile organic compounds in the air. A volatile organic compound (VOC) is a substance that has high vapor pressure but low water solubility (Chen, 2022), which means that VOC is a solid or liquid compound that can emit gases due to its volatile nature. Anthropogenic sources of VOCs are paint, lacquers, pesticides, cleaning supplies, building materials and furnishings, printers, adhesives, varnishes, nail polish, wax, organic solvents, disinfectants, air fresheners etc. VOCs are also naturally emitted from biological activity in the marine environment.

5.4.5.3 PM2.5 and PM10

Particulate matter or PM gives an indication of the level of pollution in the air. PM is a mixture of solid particles and liquid droplets found in the air; aerosols. Particles which are large or dark enough particles such as dust, dirt, soot or smoke can be seen via naked eye. Others, however, are so small they can only be detected using an electron microscope. Aerosols or PM originate from both natural and anthropic sources.

Primary natural sources are emitted directly and are usually large (>1 µm), these include volcanic eruptions, forest fires, mineral dust, sea salt, pollen and biological debris (Millero, 2013). Primary anthropogenic sources are also emitted directly and are also usually large (>1 µm), these include powerhouses, automobiles, agricultural lands, construction sites, unpaved roads, fields, smoke stacks or fires (United States Environmental Protection Agency, n.d.). Whether the particles were anthropogenic or natural in origin, they sometimes undergo gas reactions and gas to particles conversion in the atmosphere to form fine (<100 nm) particles also known as photochemical smog, which is a secondary source of particles in the atmosphere. Additional secondary sources of particles come from biological activity in the marine environment such as Sulfates from Dimethyl sulphide and Organic aerosol from biogenic Volatile Organic Compounds (VOC). Among all the sources sea salt by far contributes to the atmospheric PM the most. This should be especially prevalent in the Maldivian setting as the sea would be always less than 500 m from any given location.

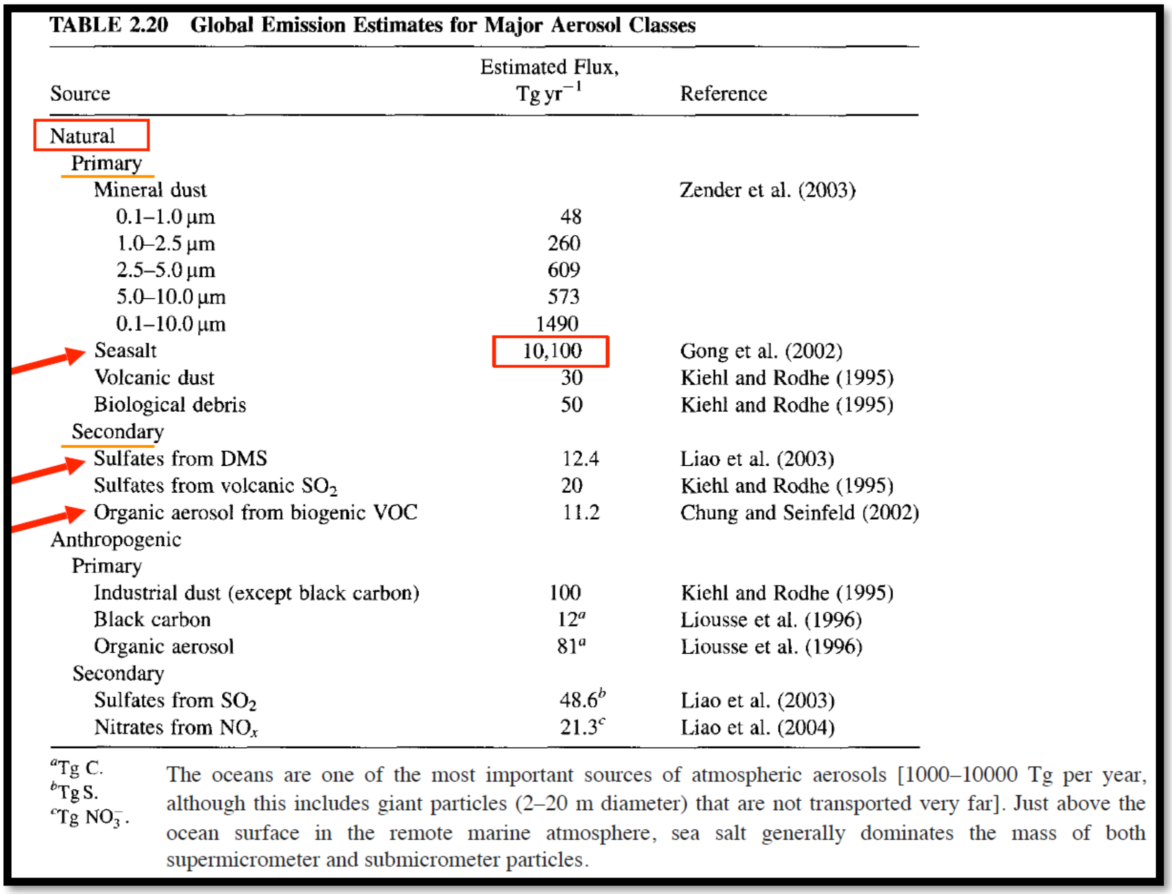


TABLE 2.20 Global Emission Estimates for Major Aerosol Classes

Source	Estimated Flux, Tg yr^{-1}	Reference
Natural		
Primary		
Mineral dust		Zender et al. (2003)
0.1–1.0 μm	48	
1.0–2.5 μm	260	
2.5–5.0 μm	609	
5.0–10.0 μm	573	
0.1–10.0 μm	1490	
Seasalt	10,100	Gong et al. (2002)
Volcanic dust	30	Kiehl and Rodhe (1995)
Biological debris	50	Kiehl and Rodhe (1995)
Secondary		
Sulfates from DMS	12.4	Liao et al. (2003)
Sulfates from volcanic SO_2	20	Kiehl and Rodhe (1995)
Organic aerosol from biogenic VOC	11.2	Chung and Seinfeld (2002)
Anthropogenic		
Primary		
Industrial dust (except black carbon)	100	Kiehl and Rodhe (1995)
Black carbon	12[a]	Liousse et al. (1996)
Organic aerosol	81[a]	Liousse et al. (1996)
Secondary		
Sulfates from SO_2	48.6[b]	Liao et al. (2003)
Nitrates from NO_x	21.3[c]	Liao et al. (2004)

[a] Tg C.
[b] Tg S.
[c] Tg NO_3^-.

The oceans are one of the most important sources of atmospheric aerosols [1000–10000 Tg per year, although this includes giant particles (2–20 m diameter) that are not transported very far]. Just above the ocean surface in the remote marine atmosphere, sea salt generally dominates the mass of both supermicrometer and submicrometer particles.

Figure 31: global estimated of major aerosol classes, figure adopted from (Ferrero, 2018)

Therefore, when we measure PM, it would always show the natural and anthropogenic sources together. Furthermore, (Budhavant, et al., 2015) have shown that transboundary pollution is much more prevalent than local pollution in the Maldives. However, this is not to say that there are no local sources of pollution as one study conducted by (Colombo, et al., 2014) showed that

Persistent Organic Pollutants (POPs) were present in Maldivian soil exceeding international guidelines which originated from waste combustion. Hence it is very important to monitor the changes during construction and operational stage of the projects to determine whether there is an influx of anthropogenic PM.

The potential for health problems caused by PM is directly related to the size of the PM. Small particles which are less than 10µm in diameter pose the greatest problem as they can penetrate deep into the lungs and even enter the blood stream. Numerous scientific studies have linked exposure to PM to variety of health problems to lungs and heart. They include:-

- Premature death in people with respiratory or heart diseases;
- Myocardial infarction;
- Arrhythmias;
- Decreased lung function;
- Aggravated asthma; and
- Increased respiratory symptoms, such as irritation of the airways, coughing or difficulty in breathing (United States Environmental Protection Agency, n.d.)

Particles can be carried over long distances by wind and then settle on ground or water surfaces. Depending on their chemical composition, this settling can lead to:-

- Making open water sources acidic;
- Changing nutrient balance in coastal waters;
- Depleting nutrients in soil;
- Damaging sensitive forests and farm crops;
- Affecting the diversity of ecosystems; and
- Contributing to acid rain effects.

Measure of particle pollution includes:-

- PM_{10}: inhalable particles, with diameters that are generally 10µm or smaller; and
- $PM_{2.5}$: fine inhalable particles with diameters that are generally 2.5µm and smaller (United States Environmental Protection Agency, n.d.).

5.4.5.4 CO

Carbon monoxide is an odorless gas that is deadly if inhaled. The most common source of CO is combustion either from fires or appliances that burn gas, wood or oil. Symptoms of CO poisoning include headache, dizziness, confusion, shortness of breath, chest and muscle pain (Carbon monoxide poisoning, 2022) etc.

5.4.5.5 CO2

Carbon dioxide is a colorless, odorless gas. The gas is naturally produced by all living things via respiration. Anthropogenic main source is via combustion. The outdoor concentration of CO2 is dependent on the traffic and industrial activity levels. While indoor concentration depends on the number of people and ventilation of the building. Hence this is a good indicator to determine the indoor air quality of buildings (MNDOLI, 2022).

5.4.5.6 SO2

Sulphur dioxide is the indicator gas from the group of sulfur oxides (SO_x) and is of the greatest concern as this is the component that is found in the highest concentration in the atmosphere and control measures that reduce SO2 also reduce all other gaseous sulfur oxides (EPA, Sulfur Dioxide Basics, 2022). The largest anthropogenic source of the gas is from combustion at power plants. Smaller sources are from vehicles that burn fuel with high sulfur content. Natural sources are from volcanoes. Short-term expose to the gas can damage the respiratory system and the effect can be more prevalent in asthma patients and children. Higher emissions of the gas can lead to the formation of photochemical smog forming small particulate matter that can contribute to PM pollution. Higher concentration of SO2 in the atmosphere can also cause acid rain.

5.4.5.7 NO2

Nitrogen dioxide is belong to a group of highly reactive gases known as nitrogen oxides (NO_x) where NO_2 gas is used as the indicator. Compounds in this group include nitrous acid and nitric acid. Primary anthropogenic source for this gas is combustion from vehicles and power plants (Nitrogen Dioxide (NO2) Pollution, 2022). Short exposure to the gas can induce respiratory symptoms such as coughing, wheezing or difficulty breathing, and asthma. Long exposure can lead to development of asthma and respiratory infections. NO_2 with other NO_x can react with other chemicals in the atmosphere to form ozone, particulate matter and cause acid rain.

5.4.5.8 Air quality optimal ranges

Currently there are no air quality standards established in the Maldives, therefore the standards set by the US EPA has been used to compare the data collected from the surveyed locations as given below.

Table 14: air quality optimal ranges

Pollutant	Optimal Range	Reference
Carbon Monoxide (CO)	<9 ppm	US EPA (EPA, NAAQS Table, 2022)
Carbon dioxide (CO_2)	<10,000 ppm indoors and Roughly 400 ppm outdoors	US (Minnesota) (MNDOLI, 2022)
TVOC	<0.5 mg/m^3 (500 µg/m^3) given only for indoors	US Green Building Council (Chen, 2022)
Nitrogen Dioxide (NO_2)	<0.053 ppm	US EPA (EPA, NAAQS Table, 2022)
HCHO	<0.1 ppm (120 µg/m^3) given only for indoors	USA (California) (Friedman, 2022)
$PM_{2.5}$	<12.0 µg/m^3	US EPA (EPA, NAAQS Table, 2022)
PM_{10}	<150 µg/m^3	US EPA (EPA, NAAQS Table, 2022)
Sulfur Dioxide (SO_2)	<0.5 ppm	US EPA (EPA, NAAQS Table, 2022)

The above table is a simplified version of the detailed reference ranges (of US EPA given below) in order for ease of comparison due to the limited quality of the data collected because of the lack of data collection time and equipment employed for this survey.

The US EPA has identified two types of national ambient air quality standards; primary standards that relate to public health protection for example sensitive groups of asthmatics, children and elderly and secondary standards that relate to protection of physical environment for example buildings, vegetation, crops, animals, and decreased visibility.

Periodically these standards are reviewed and revised. The most recently established standards are listed below (accessed on December 2022).

The units of measure for the standards are parts per million (ppm), parts per billion (ppb), micrograms per cubic meter of air ($\mu g/m^3$)

Table 15: detailed air quality reference ranges

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Carbon Dioxide (CO2)	Indoor	8 hour	10,000 ppm	Average concentration should not exceed 10,000 ppm and average concentration over 15minute period should not exceed 30,000 ppm. >5000 ppm exposure for prolonged periods can cause headache, dizziness, nausea. >40,000 ppm is immediately dangerous to life as it can cause asphyxiation.
	Outdoor	Not given	About 400 ppm	Depends on traffic and industrial activity Concentration at Mauna Loa on 28th November 2022 was at 417.31 ppm (NOAA, 2022)
TVOC (Total amount of Volatile organic compounds)	Indoor	Not given	$<0.5\ mg/m^3$ ($500\ \mu g/m^3$)	$<0.3\ mg/m^3$ = low concern $0.3-0.5\ mg/m^3$ = Acceptable $0.5-1.0\ mg/m^3$ = Marginal $1-3\ mg/m^3$ = High, could cause Eye, nose and throat irritation, headaches, damage to liver, kidney and central nervous system etc..
HCHO (Formaldehyde gas)	Indoor	Not given	<0.1 ppm	0.1-3.68 ppm detected indoors >0.01 ppm = mid irritation or allergic sensitization in some people >0.5 ppm = irritation to eyes & mucous membranes > 1.0 ppm = possible nasopharyngeal cancer 3.0 ppm = respiratory impairment and damage Approx. 0.0001 mg/m3 = Cancer risk level of 1 in 1-million 0.004 mg/m3 = ATSDR chronic MRL 203 mg/m3 = LC-50: Lethal concentration for

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
					rats 400 mg/m3 = LC-50: Lethal concentration for mice
		Outdoor	Not given	Not given	11-20 ppb detected outdoors in urban areas
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 µg/m³	Not to be exceeded
Nitrogen Dioxide (NO_2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb (0.053 ppm)	Annual Mean
Ozone (O_3)		primary and secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	12.0 µg/m³	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m³	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m³	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 µg/m³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

5.4.5.9 Air quality at surveyed locations

Among the tested indicator pollutants, PM2.5, HCHO, TVOC, CO and SO_2 were above the optimal range at various locations. The optimal range for PM2.5 is below 12 µg/m³ while all measured locations (including indoors) exhibited concentration of 21 µg/m³ and above.

SO_2 concentration at locations AQ1, AQ2, AQ3 and AQ5 have exceeded the recommended levels. It can be due to the exhaust fumes of automobiles.

Inside the Umar Zahir Building, exceeding amounts of HCHO, TVOC, SO_2 and CO were recorded. The high HCHO and TVOC concentration maybe due to the use of products like preservatives, air fresheners or cleaning agents used within the building. The high CO concentration (141 ppm) inside the building is an indication of improper ventilation.

The concentration of CO at AQ5-I (Indoors) was also above the recommended range at 26 ppm, indicating the ventilation maybe a major issue in many of the buildings within Male' City.

Table 16: ambient air quality at surveyed locations (exceeded parameters from optimal range are in red)

Code	Location	Parameters										Remarks
		Temp. (°C)	Humidity (%(RH)	HCHO (mg/m3)	TVOC (mg/m3)	PM2.5 (ug/m3)	PM10 (ug/m3)	CO (ppm)	CO2 (ppm)	SO2 (ppm)	NO2 (ppm)	
AQ 1	(Project Construction site) Within project site	32	88	0.002	0.005	24	3	2	420	0.8	0	
AQ 2	(Near project site) Umar Zahir Building	35	66	0.001	0.005	21	27	1	403	1	0	
AQ 2-I	(Near project site) Umar Zahir Building	38	44	0.320	2.319	21	27	141	412	0.5	0	Indoors
AAQ 3	(Near project site) Marina View Apartments	35	71	0.001	0.005	30	39	1	411	0.5	0	
AQ 4	(Near project site) Masjid Al-Asdiqa	31	82	0.002	0.007	27	35	3	404	0.3	0	
AQ 4-I	(Near project site) Masjid Al-Asdiqa	29	73	0.001	0.003	28	36	1	406	0.3	0	Indoors

AQ5	(Near project site) Tree Top Hospital	35	66	0.003	0.061	27	35	2	405	0.5	0	
AQ5-I	(Near project site) Tree Top Hospital	33	61	0.095	0.620	27	35	26	1671	0.4	0	Indoors
AQ6	(Control) Aster shop	32	77	0.001	0.002	27	35	1	400	0.4	0	
AQ6-I	(Control) Aster shop	31	57	0.003	0.005	28	36	2	405	0.3	0	Indoors

5.4.6 Noise

Noise, defined as unwanted sound, is perceived as an environmental stressor and nuisance and is associated with physical, mental and psychological stresses in humans. Exposure to continuous noise over 85-90 dB over a lifetime can lead to progressive hearing loss with an increased threshold of hearing sensitivity. Indirect effects of noise pollution include inducing non-auditory effects such as sleep disturbance and annoyance which eventually lead to stress responses, then symptoms and possibly illness. Noise exposure during sleep may increase blood pressure, heart rate and finger pulse amplitude as well as body movements. Physiological symptoms associated with noise exposure include nausea, headache, argumentativeness, mood changes and anxiety (Stansfeld & Matheson, 2003).

Noise levels requisite to protect public welfare and health against hearing loss, annoyance and activity interference as identified by the EPA of the United States specified noise levels of 70 dB as the level of environmental noise which will prevent any measurable hearing loss over a lifetime. Likewise, levels of 55 dB outdoors and 45 dB indoors are identified as preventing activity interference and annoyance. The latter are considered those which will permit spoken conversation and other activities such as sleeping, working and recreation which are part of the daily human activities (EPA Identifies Noise Levels Affecting Health and Welfare, 2016).

Children in particular are extremely vulnerable to both auditory and non-auditory health effects of noise. Studies of children exposed to environmental noise have consistently found effects on cognitive performance, decreased motivation, cardiovascular effects, endocrine disturbances as well as noise annoyance (Stansfeld & Matheson, 2003).

Table 17 shows the ambient noise level near the proposed project area, noise sensitive locations and control location. The geographic coordinates for the locations are given in Figure 3 and Table 2. The maximum noise recorded was at site N3 with 75.4 dB due the noise from traffic at the time. Noise from traffic or construction were relatively consistent in most locations during the survey period.

Table 17: ambient noise levels in K.Hulhumale' Phase I

Code	Time	Location	Noise level (dB)			Observations
			Min	Max	Avg	
N 1	14.33	(Project Construction site) Within project site	56.1	59.6		Construction Gentle breeze
N2	1445	(Near project site) Umar Zahir Building	67.6	70.5		Construction Traffic Moderate breeze
N3	1553	(Near project site) Marina View Apartments	63.2	75.4		Traffic Asr prayer call
N 4	1630	(Near project site) Masjid Al-Asdiqa	63.5	67.3		Traffic
N 5	1602	(Near project site) Tree Top Hospital	60.8	71.1		Traffic Conversation
N6	1611	(Control) Aster shop	66.3	71.2		Traffic

5.4.7 Traffic flow

In general, there are 3 periods where traffic flow would be at its peak in Hulhumale’. First, between 06:30 and 08:00 hours when the schools and offices start. Second, at the afternoon when school session changes. Lastly, during late afternoon and evening where school and offices usually ends. The traffic count survey was carried out during one of the peak hours of the day which is between late afternoon and evening time period.

There are 2 roads around the project site. Both of these roads are 2 way roads. This area of Hulhumale’ has slightly moderate traffic. For the duration of the survey, Fithroanu Magu had the most traffic (383 vehicles), where cycles dominated the traphic flow (221). The traffic count recorded in Orchid Maa Hingun had a total of 217 vehicles. The results of the traffic count for the respective roads are provided below.

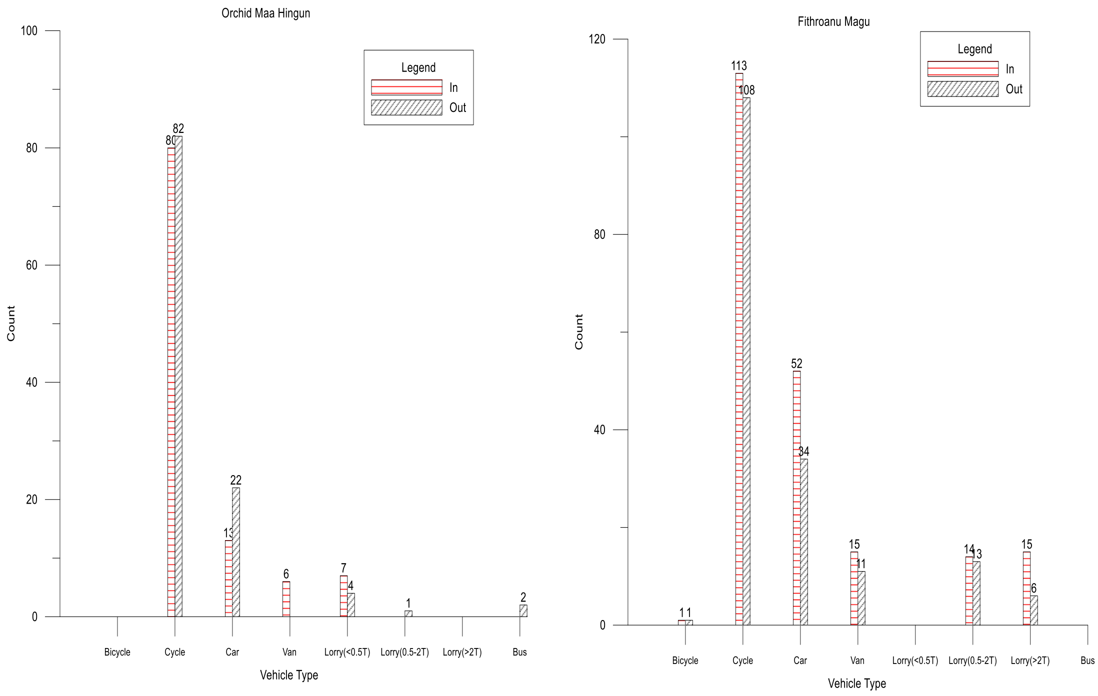


Figure 32: Traffic count from the 2 adjacent roads to project site.

5.5 Socioeconomic Environment

This section describes the socioeconomic environment of K. Hulhumale' Phase I. Information on socioeconomic status was obtained from Maldives Population and Housing Census 2022 and 2014 and Isles website.

5.5.1 Demography

From 2014 to 2022 the population of Hulhumale' Phase I has increased gradually at an intercensal population growth rate of 9.2%. The population from year 2014 to 2022 increased from 17,149 to 35,859. Among the 35,859 people, 14,715 are females and 21,144 are males.

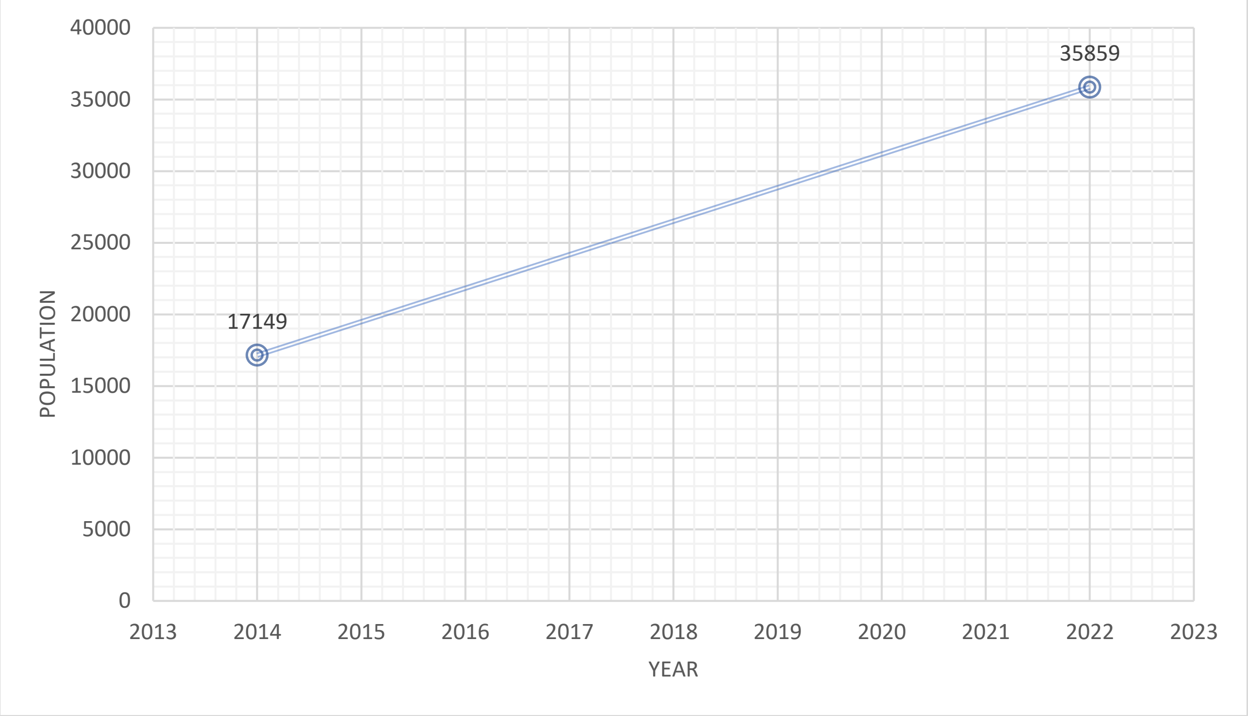


Figure 33: population of K. Hulhumale' Phase I from 2014 to 2022

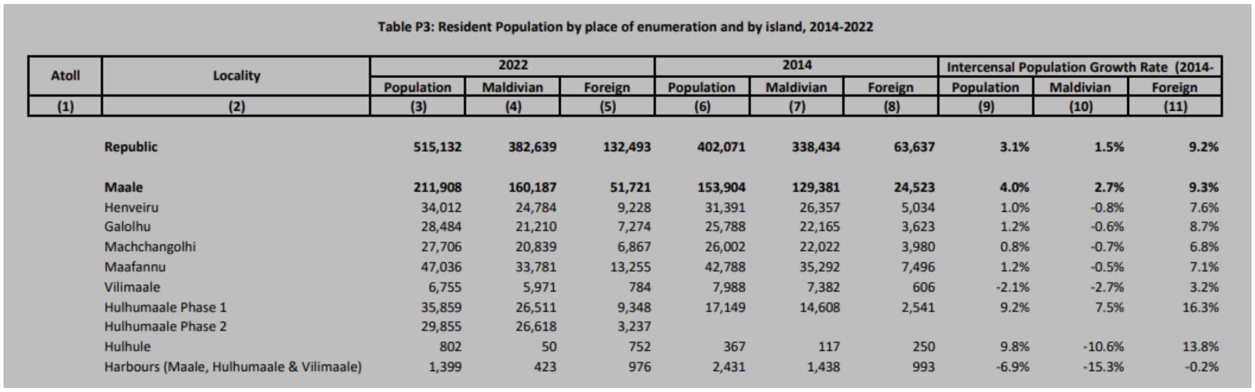


Table P3: Resident Population by place of enumeration and by island, 2014-2022

Atoll	Locality	2022			2014			Intercensal Population Growth Rate (2014-		
		Population	Maldivian	Foreign	Population	Maldivian	Foreign	Population	Maldivian	Foreign
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Republic	**515,132**	**382,639**	**132,493**	**402,071**	**338,434**	**63,637**	**3.1%**	**1.5%**	**9.2%**
	Maale	**211,908**	**160,187**	**51,721**	**153,904**	**129,381**	**24,523**	**4.0%**	**2.7%**	**9.3%**
	Henveiru	34,012	24,784	9,228	31,391	26,357	5,034	1.0%	-0.8%	7.6%
	Galolhu	28,484	21,210	7,274	25,788	22,165	3,623	1.2%	-0.6%	8.7%
	Machchangolhi	27,706	20,839	6,867	26,002	22,022	3,980	0.8%	-0.7%	6.8%
	Maafannu	47,036	33,781	13,255	42,788	35,292	7,496	1.2%	-0.5%	7.1%
	Vilimaale	6,755	5,971	784	7,988	7,382	606	-2.1%	-2.7%	3.2%
	Hulhumaale Phase 1	35,859	26,511	9,348	17,149	14,608	2,541	9.2%	7.5%	16.3%
	Hulhumaale Phase 2	29,855	26,618	3,237						
	Hulhule	802	50	752	367	117	250	9.8%	-10.6%	13.8%
	Harbours (Maale, Hulhumaale & Vilimaale)	1,399	423	976	2,431	1,438	993	-6.9%	-15.3%	-0.2%

Figure 34:Population details of K. Hulhumale' Phase I (statistics, 2022)

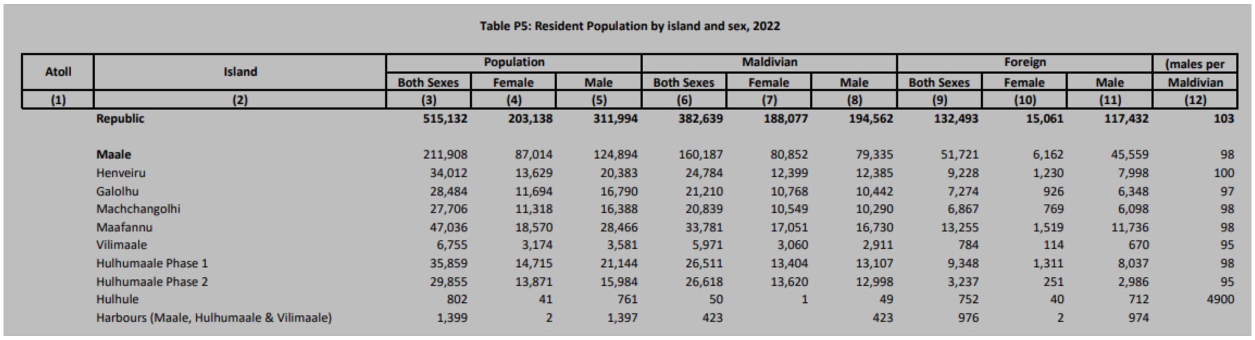


Table P5: Resident Population by island and sex, 2022

Atoll	Island	Population			Maldivian			Foreign			(males per
		Both Sexes	Female	Male	Both Sexes	Female	Male	Both Sexes	Female	Male	Maldivian
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Republic	**515,132**	**203,138**	**311,994**	**382,639**	**188,077**	**194,562**	**132,493**	**15,061**	**117,432**	**103**
	Maale	211,908	87,014	124,894	160,187	80,852	79,335	51,721	6,162	45,559	98
	Henveiru	34,012	13,629	20,383	24,784	12,399	12,385	9,228	1,230	7,998	100
	Galolhu	28,484	11,694	16,790	21,210	10,768	10,442	7,274	926	6,348	97
	Machchangolhi	27,706	11,318	16,388	20,839	10,549	10,290	6,867	769	6,098	98
	Maafannu	47,036	18,570	28,466	33,781	17,051	16,730	13,255	1,519	11,736	98
	Vilimaale	6,755	3,174	3,581	5,971	3,060	2,911	784	114	670	95
	Hulhumaale Phase 1	35,859	14,715	21,144	26,511	13,404	13,107	9,348	1,311	8,037	98
	Hulhumaale Phase 2	29,855	13,871	15,984	26,618	13,620	12,998	3,237	251	2,986	95
	Hulhule	802	41	761	50	1	49	752	40	712	4900
	Harbours (Maale, Hulhumaale & Vilimaale)	1,399	2	1,397	423		423	976	2	974	

Figure 35: Population distribution between sexes at K. Hulhumale' Phase I (statistics, 2022)

5.5.1.1 Population of adjacent buildings

There are no adjacent households near the project site.

5.5.2 Main Economic Activities

Hulhumalé has emerged as a focal point for affordable tourism and the establishment of guesthouses. Presently, it's estimated that the island hosts around 100 guesthouses, with a combined capacity to accommodate approximately 2,000 guests at any given time. Hulhumalé is also a sought-after destination for domestic tourism, attracting many locals for weekend getaways and holidays, primarily from Malé. The water sports facilities along Hulhumalé's beachfront are especially popular among both residents and weekend visitors (Ali, 2023).

In recent years, the number of upscale dining establishments, including international brands, has seen a significant increase in Hulhumalé. These dining options have gained popularity among both local residents and visitors from the Greater Malé region (Ali, 2023).

Hulhumalé offers a diverse range of development opportunities, including a business park, an IT hub, a cruise terminal, a water-themed park, as well as major hotels, shopping centers, and office buildings. The various distinct projects planned for the city are expected to yield favorable returns for investors, developers, and the local populace. With its promise of rapid economic growth, Hulhumalé is anticipated to generate approximately 85,000 job opportunities for the local population (Ali, 2023).

5.5.3 Income Situation and Distribution

With the unavailability of sufficient data regarding the income situation and distribution of the island specifically, Maldives population and Housing Census 2014 and Household Income & Expenditure Survey (HIES) 2016 report published by National Bureau of Statistics were used to reflect on the current income status in terms of atoll locality.

According to Census 2006, manufacturing industry provided the most employment opportunities to the residents of Maldives. However, tourism being the most rapidly expanding industry and being the highest contributing sector to the Maldivian GDP, the results of Census 2014 revealed its vital role in creating employment opportunities for the country. More than a fifth of the employed Maldivians are engaged in the tourism industry and of the total employed, 27,837 or 14 percent work in the resorts (Maldives Population & Housing Census, 2014).

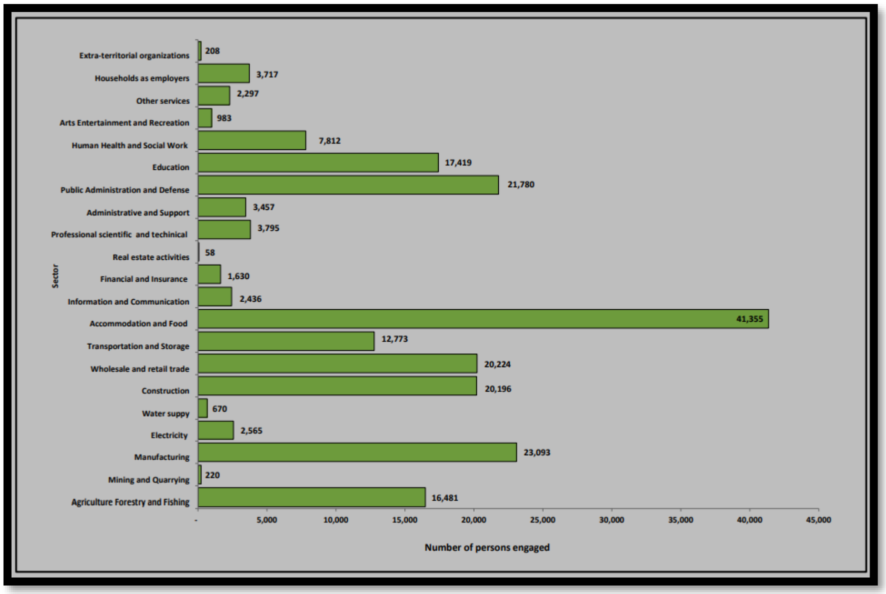
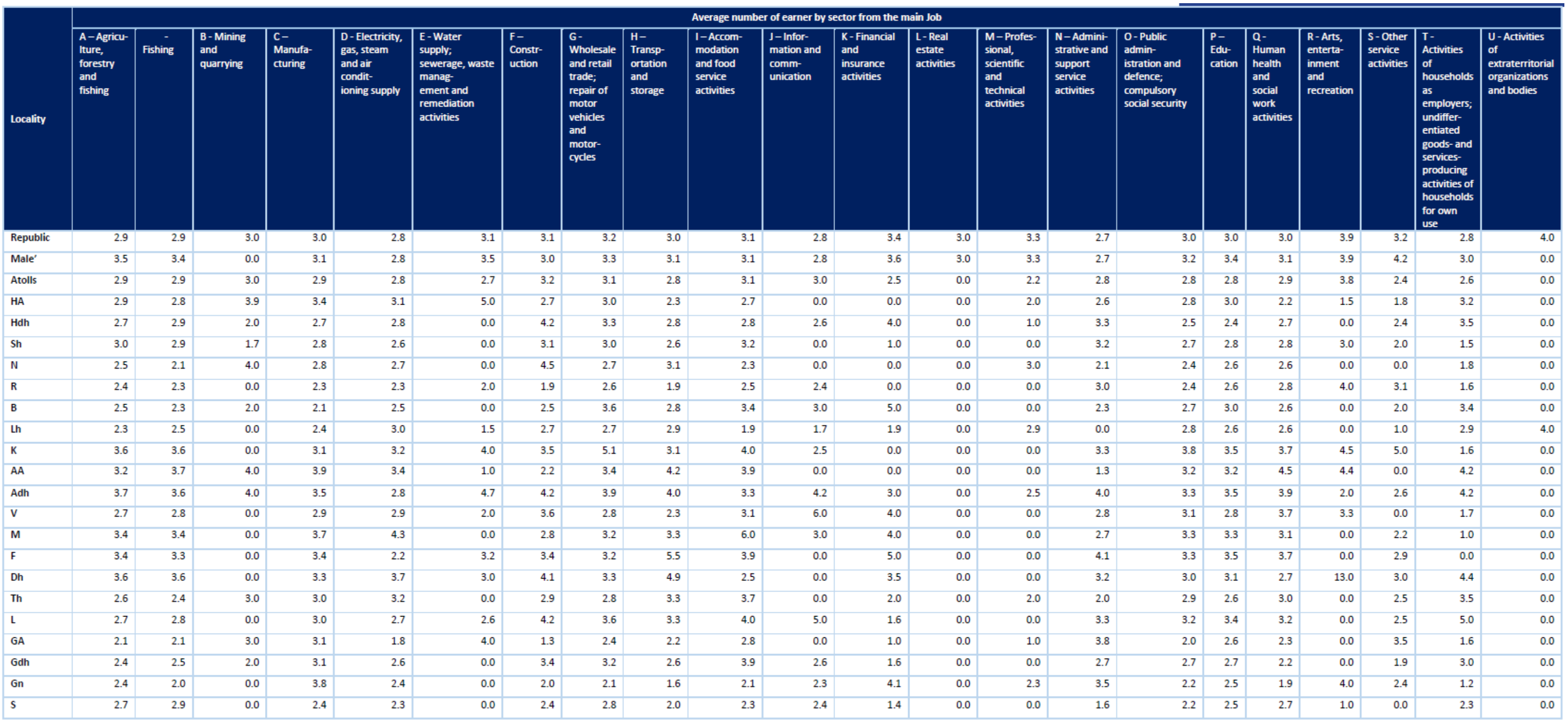


Figure 36: resident employed population by sector (Maldives Population & Housing Census, 2014)

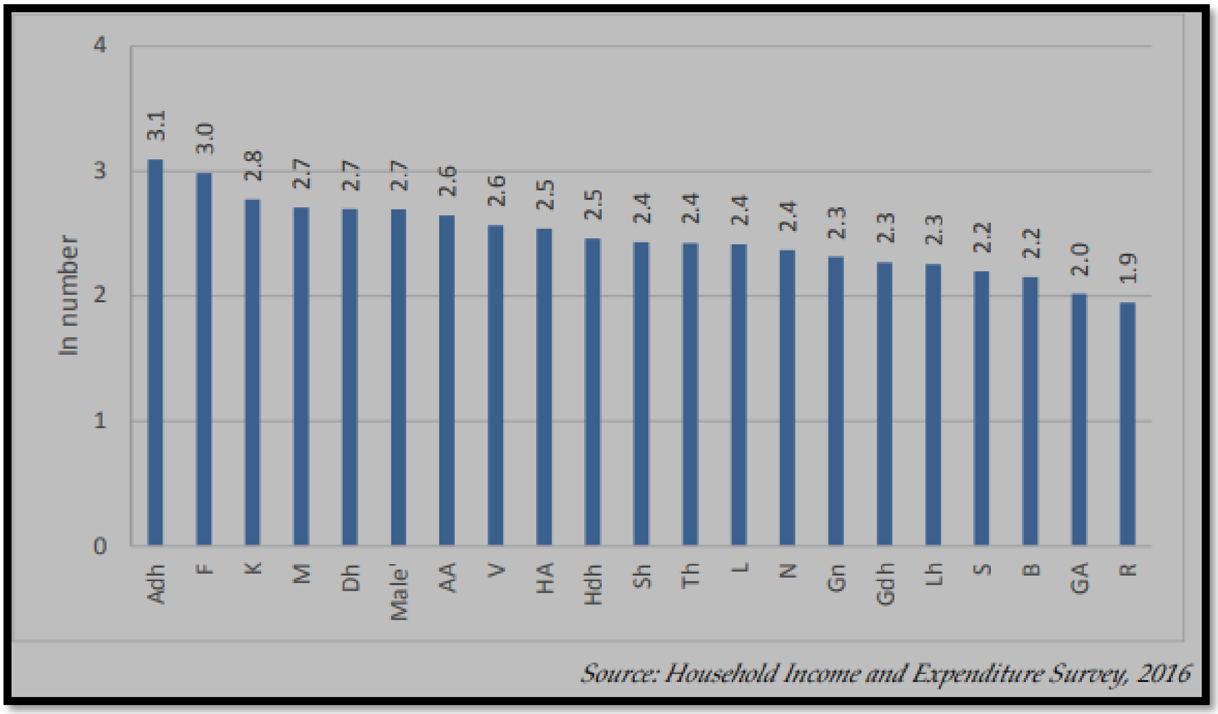
HIES 2016 report states that out of the working age population (15 years and above) of Maldives, 66 percent were income earners. Earners also include those people not in employment but receives transfer incomes (eg: basic pension for the elderly). The report highlighted that on average 5.1 earners of Kaafu Atoll generates income in wholesale and retail trade, repair of motor vehicles and moto cycles and 5.0 from other service activities (Household Income and Expenditure Survey (HIES) Analytical Report: Household Income, 2016). This might not reflect Kaafu atoll income distribution specifically as the atoll is more diverse, but a rough estimate can be determined of how the income generated is distributed in the atoll. The details of earner distribution on an atoll level are provided below.



Locality	Average number of earner by sector from the main Job																				
	A – Agricu-lture, forestry and fishing	- Fishing	B - Mining and quarrying	C – Manufa-cturing	D - Electricity, gas, steam and air condit-ioning supply	E - Water supply; sewerage, waste manag-ement and remediation activities	F – Constr-uction	G - Wholesale and retail trade; repair of motor vehicles and motor-cycles	H – Transp-ortation and storage	I – Accom-modation and food service activities	J – Infor-mation and comm-unication	K - Financial and insurance activities	L - Real estate activities	M – Profes-sional, scientific and technical activities	N – Admini-strative and support service activities	O - Public admin-istration and defence; compulsory social security	P – Edu-cation	Q - Human health and social work activities	R - Arts, enterta-inment and recreation	S - Other service activities	T - Activities of households as employers; undiffer-entiated goods- and services-producing activities of households for own use	U - Activities of extraterritorial organizations and bodies
Republic	2.9	2.9	3.0	3.0	2.8	3.1	3.1	3.2	3.0	3.1	2.8	3.4	3.0	3.3	2.7	3.0	3.0	3.0	3.9	3.2	2.8	4.0
Male'	3.5	3.4	0.0	3.1	2.8	3.5	3.0	3.3	3.1	3.1	2.8	3.6	3.0	3.3	2.7	3.2	3.4	3.1	3.9	4.2	3.0	0.0
Atolls	2.9	2.9	3.0	2.9	2.8	2.7	3.2	3.1	2.8	3.1	3.0	2.5	0.0	2.2	2.8	2.8	2.8	2.9	3.8	2.4	2.6	0.0
HA	2.9	2.8	3.9	3.4	3.1	5.0	2.7	3.0	2.3	2.7	0.0	0.0	0.0	2.0	2.6	2.8	3.0	2.2	1.5	1.8	3.2	0.0
Hdh	2.7	2.9	2.0	2.7	2.8	0.0	4.2	3.3	2.8	2.8	2.6	4.0	0.0	1.0	3.3	2.5	2.4	2.7	0.0	2.4	3.5	0.0
Sh	3.0	2.9	1.7	2.8	2.6	0.0	3.1	3.0	2.6	3.2	0.0	1.0	0.0	0.0	3.2	2.7	2.8	2.8	3.0	2.0	1.5	0.0
N	2.5	2.1	4.0	2.8	2.7	0.0	4.5	2.7	3.1	2.3	0.0	0.0	0.0	3.0	2.1	2.4	2.6	2.6	0.0	0.0	1.8	0.0
R	2.4	2.3	0.0	2.3	2.3	2.0	1.9	2.6	1.9	2.5	2.4	0.0	0.0	0.0	3.0	2.4	2.6	2.8	4.0	3.1	1.6	0.0
B	2.5	2.3	2.0	2.1	2.5	0.0	2.5	3.6	2.8	3.4	3.0	5.0	0.0	0.0	2.3	2.7	3.0	2.6	0.0	2.0	3.4	0.0
Lh	2.3	2.5	0.0	2.4	3.0	1.5	2.7	2.7	2.9	1.9	1.7	1.9	0.0	2.9	0.0	2.8	2.6	2.6	0.0	1.0	2.9	4.0
K	3.6	3.6	0.0	3.1	3.2	4.0	3.5	5.1	3.1	4.0	2.5	0.0	0.0	0.0	3.3	3.8	3.5	3.7	4.5	5.0	1.6	0.0
AA	3.2	3.7	4.0	3.9	3.4	1.0	2.2	3.4	4.2	3.9	0.0	0.0	0.0	0.0	1.3	3.2	3.2	4.5	4.4	0.0	4.2	0.0
Adh	3.7	3.6	4.0	3.5	2.8	4.7	4.2	3.9	4.0	3.3	4.2	3.0	0.0	2.5	4.0	3.3	3.5	3.9	2.0	2.6	4.2	0.0
V	2.7	2.8	0.0	2.9	2.9	2.0	3.6	2.8	2.3	3.1	6.0	4.0	0.0	0.0	2.8	3.1	2.8	3.7	3.3	0.0	1.7	0.0
M	3.4	3.4	0.0	3.7	4.3	0.0	2.8	3.2	3.3	6.0	3.0	4.0	0.0	0.0	2.7	3.3	3.3	3.1	0.0	2.2	1.0	0.0
F	3.4	3.3	0.0	3.4	2.2	3.2	3.4	3.2	5.5	3.9	0.0	5.0	0.0	0.0	4.1	3.3	3.5	3.7	0.0	2.9	0.0	0.0
Dh	3.6	3.6	0.0	3.3	3.7	3.0	4.1	3.3	4.9	2.5	0.0	3.5	0.0	0.0	3.2	3.0	3.1	2.7	13.0	3.0	4.4	0.0
Th	2.6	2.4	3.0	3.0	3.2	0.0	2.9	2.8	3.3	3.7	0.0	2.0	0.0	2.0	2.0	2.9	2.6	3.0	0.0	2.5	3.5	0.0
L	2.7	2.8	0.0	3.0	2.7	2.6	4.2	3.6	3.3	4.0	5.0	1.6	0.0	0.0	3.3	3.2	3.4	3.2	0.0	2.5	5.0	0.0
GA	2.1	2.1	3.0	3.1	1.8	4.0	1.3	2.4	2.2	2.8	0.0	1.0	0.0	1.0	3.8	2.0	2.6	2.3	0.0	3.5	1.6	0.0
Gdh	2.4	2.5	2.0	3.1	2.6	0.0	3.4	3.2	2.6	3.9	2.6	1.6	0.0	0.0	2.7	2.7	2.7	2.2	0.0	1.9	3.0	0.0
Gn	2.4	2.0	0.0	3.8	2.4	0.0	2.0	2.1	1.6	2.1	2.3	4.1	0.0	2.3	3.5	2.2	2.5	1.9	4.0	2.4	1.2	0.0
S	2.7	2.9	0.0	2.4	2.3	0.0	2.4	2.8	2.0	2.3	2.4	1.4	0.0	0.0	1.6	2.2	2.5	2.7	1.0	0.0	2.3	0.0

Figure 37: average number of earner by sector from the main Job (Household Income and Expenditure Survey (HIES) Analytical Report: Household Income, 2016).

HIES 2016 report further highlighted that, Kaafu Atoll has the Third highest number of earners on average with 2.8 person per household, earning approximately 8,390MVR per earner. The following figures provides the atoll level breakdown with respect to average number of earners and their average income (Household Income and Expenditure Survey (HIES) Analytical Report: Household Income, 2016).



Source: Household Income and Expenditure Survey, 2016

Figure 38: average number of earners by Atoll, 2016 (Household Income and Expenditure Survey (HIES) Analytical Report: Household Income, 2016).

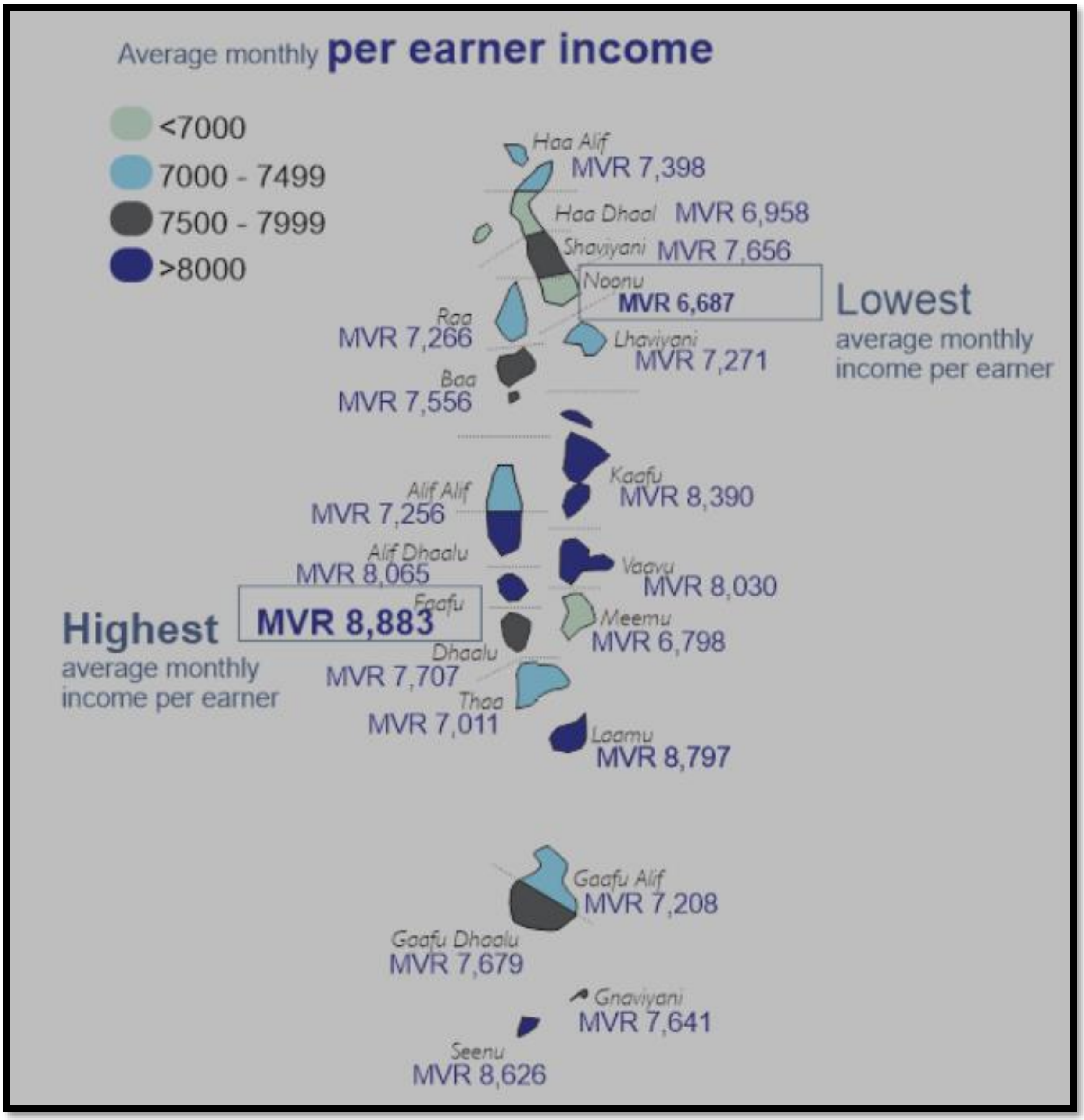
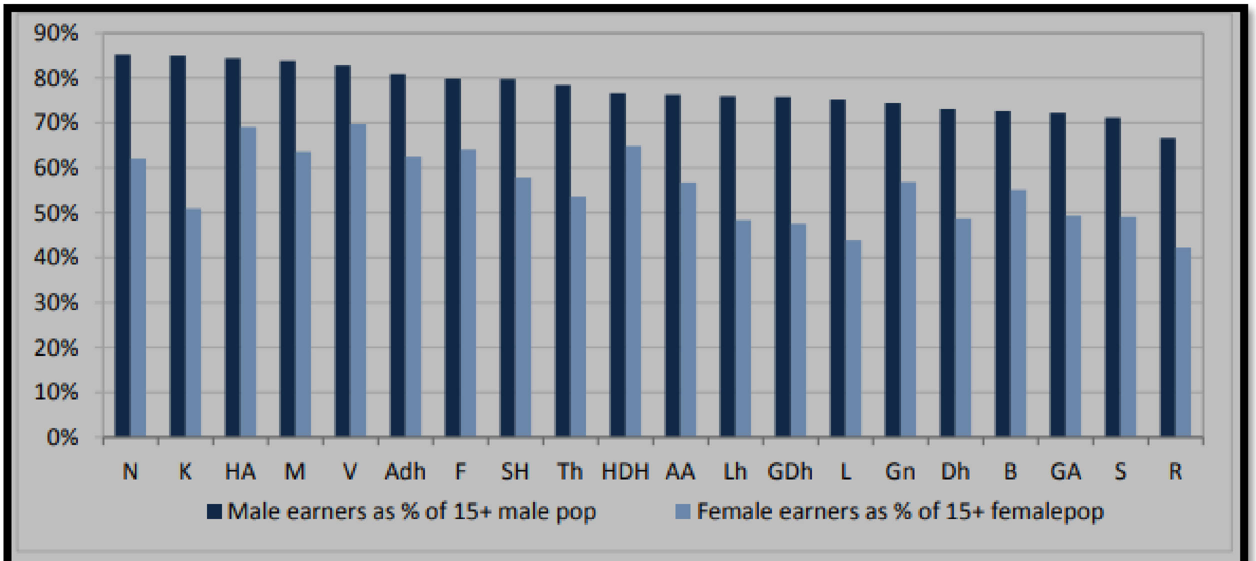


Figure 39: average monthly income per earner (Household Income and Expenditure Survey (HIES) Analytical Report: Household Income, 2016).

Moreover, figure provided below compares the earners by sex as a proportion of 15 years and above population of the respective sex. On average 79% of the 15 years and above male population are earners in Maldives. Kaafu Atoll is one of the atolls which reportedly have approximately 85% of 15 years and above male population as earners. Furthermore, it is reported that around 50% of 15 years and above female population in Kaafu Atoll were recorded as earners (Household Income and Expenditure Survey (HIES) Analytical Report: Household Income, 2016).



Source: Household Income and Expenditure Survey, 2016

Figure 40: earners aged 15 and above population by sex and locality, 2016 (Household Income and Expenditure Survey (HIES) Analytical Report: Household Income, 2016)

When it comes to unemployment rates, all the Atolls with the exception of Addu (S), Gnaviyani (Gn), Male' Atoll (K), Faadhippolhu (Lh) and Male' shows lower unemployment rates in 2014 compared to 2006. Kaafu Atoll reported an unemployment rate of approximately 9.8 % in 2014 according to HIES Analytical Report (Household Income and Expenditure Survey (HIES) Analytical Report: Household Income, 2016).

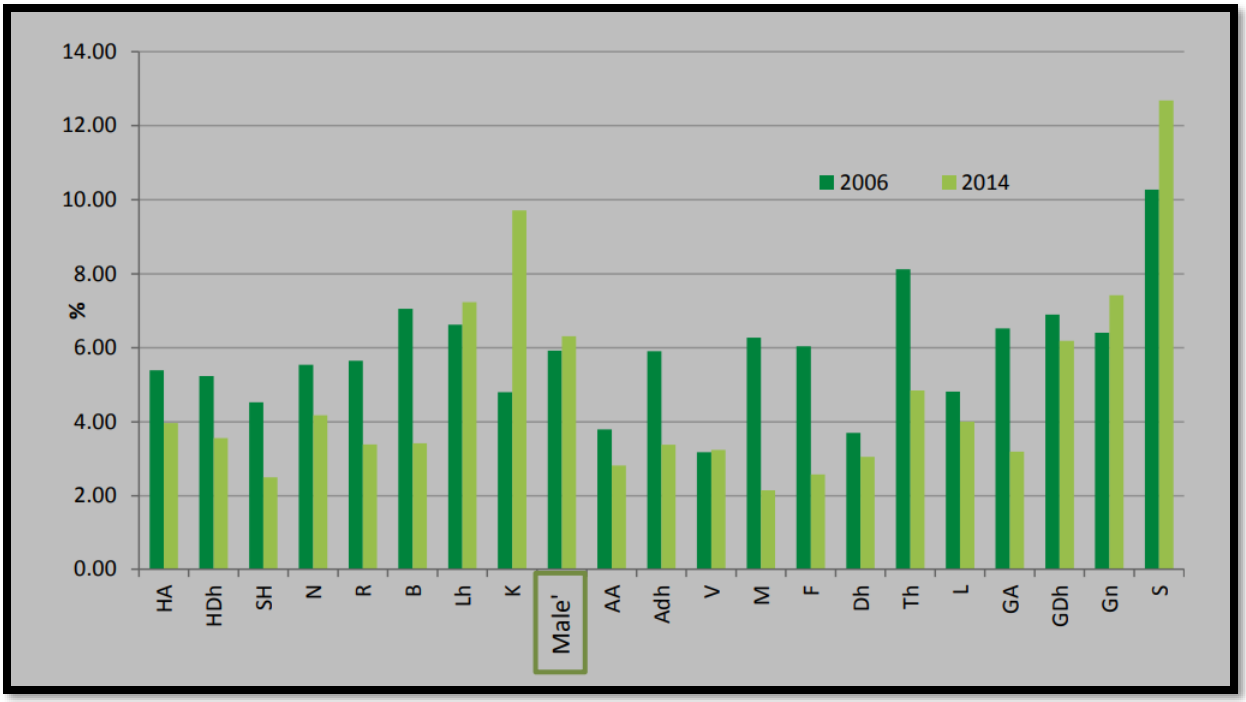


Figure 41: unemployment rate by locality, 2006 & 2014 (Maldives Population & Housing Census, 2014)

5.5.4 Healthcare Facilities

The following figure shows which regional and referral facility is available in each zone. Kaafu Atoll is located in zone 3. Zoning starts from the north.

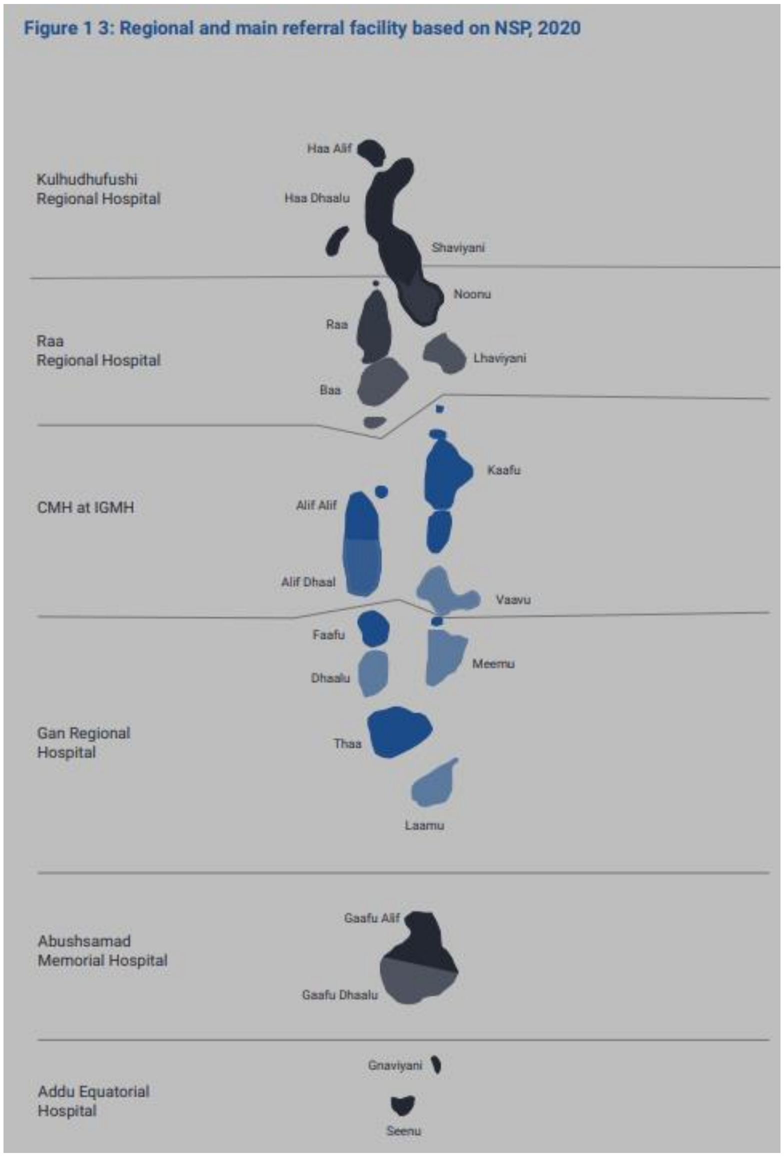


Figure 42: Regional and main referral facility found in each zone (Maldives Health Statistics, 2020).

Zone 3 where Kaafu Atoll is located have 38 public infrastructures with 6 hospitals, 31 healthcare centers and 1 allopathic clinic. In the private sector a total of 158 spread among Hospitals, clinics and service centers. Currently, Hulhumale' has two major hospitals in service. One is Hulhumale' Hospital and the other is Treetop hospital.

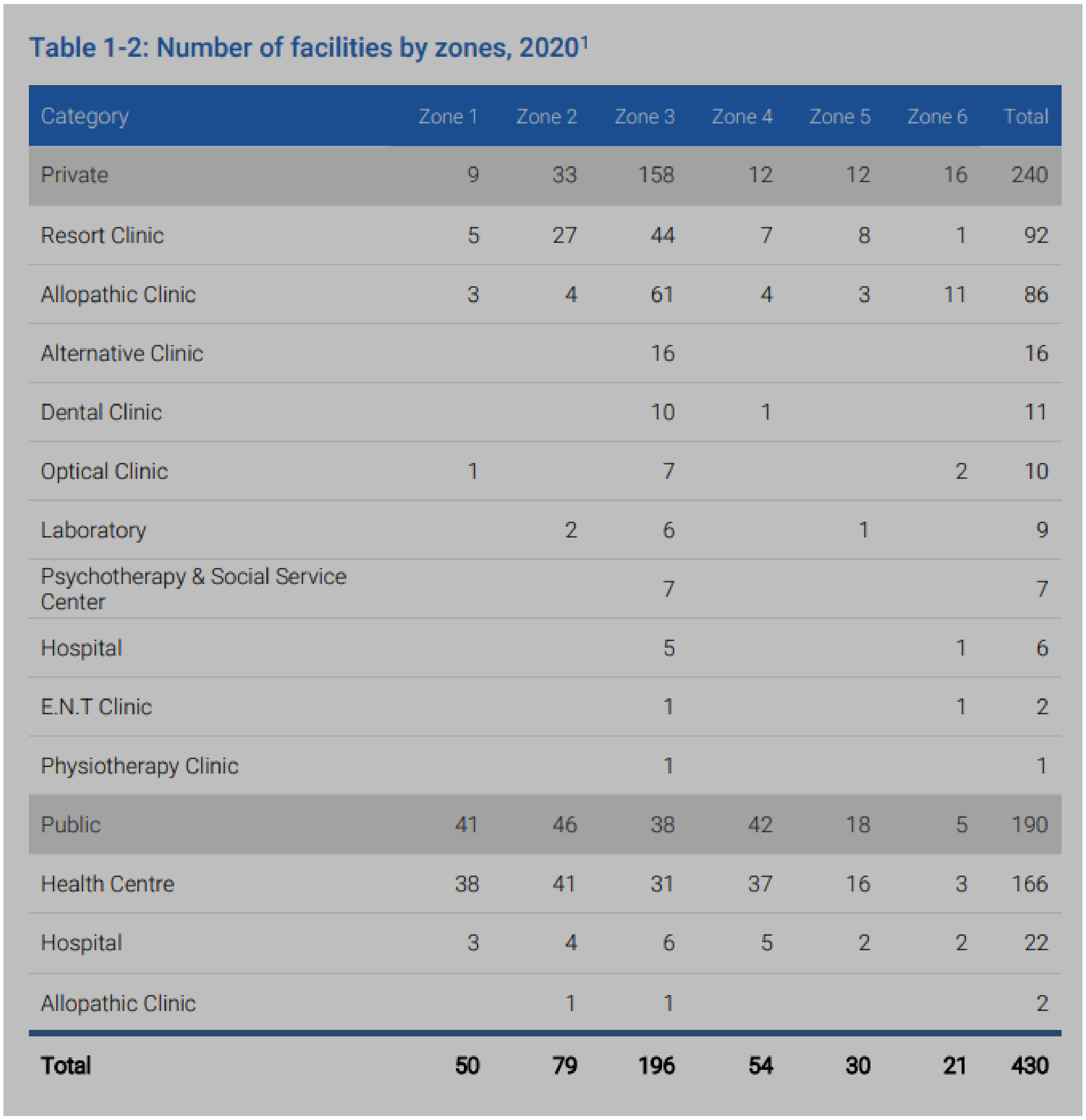


Table 1-2: Number of facilities by zones, 2020[1]

Category	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Total
Private	9	33	158	12	12	16	240
Resort Clinic	5	27	44	7	8	1	92
Allopathic Clinic	3	4	61	4	3	11	86
Alternative Clinic			16				16
Dental Clinic			10	1			11
Optical Clinic	1		7			2	10
Laboratory		2	6		1		9
Psychotherapy & Social Service Center			7				7
Hospital			5			1	6
E.N.T Clinic			1			1	2
Physiotherapy Clinic			1				1
Public	41	46	38	42	18	5	190
Health Centre	38	41	31	37	16	3	166
Hospital	3	4	6	5	2	2	22
Allopathic Clinic		1	1				2
Total	**50**	**79**	**196**	**54**	**30**	**21**	**430**

Figure 43: Healthcare facilities available in each zone (Maldives Health Statistics, 2020).

5.5.5 Accessibility and Public Transport

Hulhumalé offers a range of transportation options for travelers. The nearest airport is Velaanaa International Airport, providing convenient access for both domestic and international visitors. To reach Hulhumalé from Male', the capital of the Maldives, and the airport, visitors can make use of the efficient bus service. Alternatively, taxi and private car hire services are readily available for those seeking more personalized transportation. For a scenic journey, daily ferries operate between Male' and Hulhumalé, offering travelers a chance to enjoy the picturesque Maldivian waters. For those in a hurry, speedboat services are also available for the Male' to Hulhumalé route. Additionally, travelers looking to explore other islands can take advantage of speedboat hire services, creating opportunities for swift travel to other local islands.

5.5.6 Power, Water and Waste Management Utilities

Electricity generation on Hulhumalé is currently facilitated by both diesel generator sets and solar panel systems managed by STELCO. However, HDC (Housing Development Corporation) will soon take over the responsibility of supplying continuous electricity for phase 2. Water supply relies on a combination of reverse osmosis and ultrafiltration systems, which purify rainwater collected on the island. Sewerage services are managed through a conventional gravity-based system operated by MWSC (Malé Water and Sewerage Company).

The responsibility of waste collection and handling fall on to Waste Management Cooperative known as WAMCO. Adjacent to STO Hotel on the western side of Hulhumalé Phase I, there exists a waste transfer facility managed by WAMCO. On a daily basis, waste is transported from this location to Thilafushi via Landing Crafts (Ali, 2023).

5.6 Hazard Vulnerability

The United Nations Development Program (UNDP) has compiled a very thorough study to develop a risk profile for the Maldives in order to determine the probability of hazards across different regions of Maldives based on geological evidence, historical data and projections derived from theoretical analysis (Developing a Disaster Risk Profile for Maldives, Volume 1: Main report, 2006). Likelihood of storm hazards for the island under concern are analyzed using this disaster risk management study done by the UNDP and likelihood of flooding is analyzed using rainfall data from the nearest meteorological center to each island. Some project site specific data are also obtained from consultation with the relevant stakeholders.

5.6.1 Storm Surge

According to the bathymetric surveys of the entire Maldives, the ocean slope towards the eastern side is steeper than the west coast which indicates that the eastern islands of the Maldives are more vulnerable to higher surge hazard compared to the western islands. Accordingly, the country has been divided into 5 broad storm surge hazard zones from 1-5, with 5 being the highest risk category. According to this zoning, K. Hulhumale' is in moderate risk zone (Developing a Disaster Risk Profile for Maldives, Volume 1: Main report, 2006).

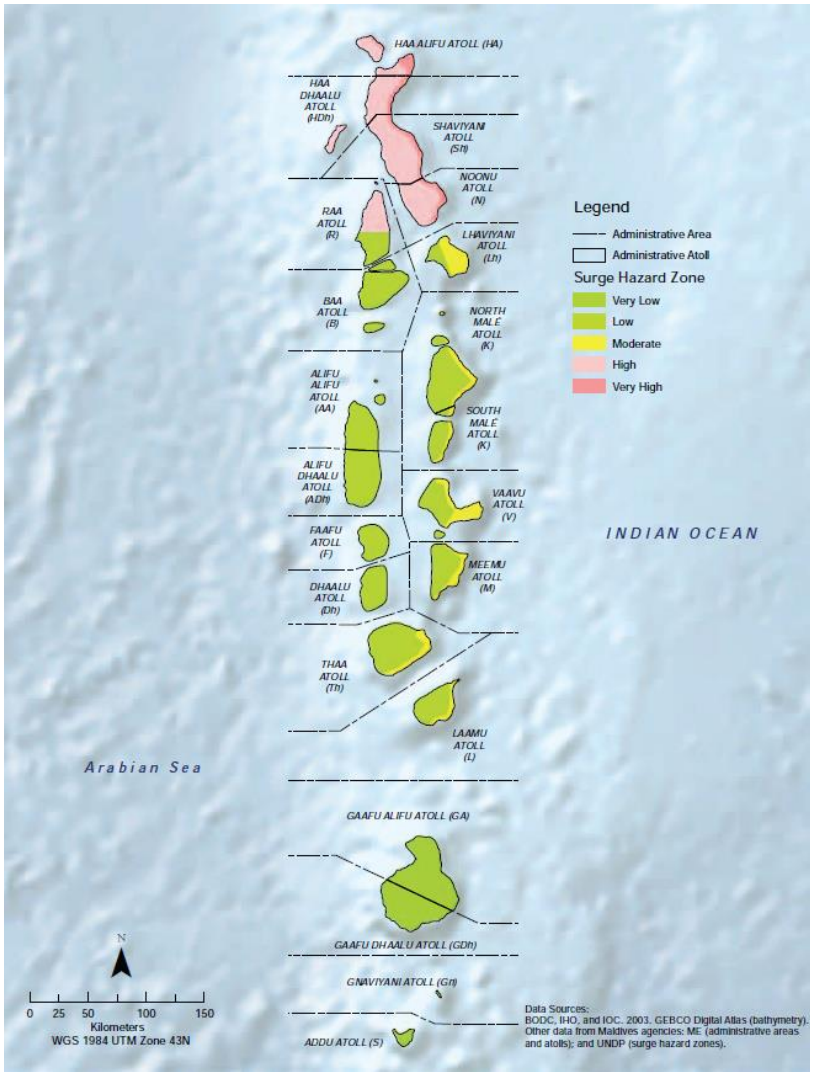


Figure 44: Storm hazard map of the Maldives from pink to green, pink being highest risk (Multihazard Risk Atlas of Maldives, 2020)

5.6.2 Flooding

Rainfall Rainfall data from Hulhule' meteorological station representing the study area has been used to analyze the flood and drought years at this region. Data has been standardized against the overall mean. Deducing from standard deviation of rainfall from long-term mean, it can be concluded that if the difference between long-term mean and standard deviation is >1, that corresponding year is a flood year whereas if this difference is <-1 it may be considered a drought year.

Geographically, Hulhumale’ is located at the central quadrant of the Maldives near Hulhule’ meteorological station. Analysis of rainfall data from Hulhule’ station showed that this part of the Maldives experienced more heavy rainfall (26) years than rain deficient (23) years. As for flooding, 8 years observed rainfall >1 standard deviation from the long-term mean (Figure 40) indicating that flooding is an uncommon occurrence at this part of the Maldives. The 10-year moving average predicts that 2024 will receive higher than normal rainfall.

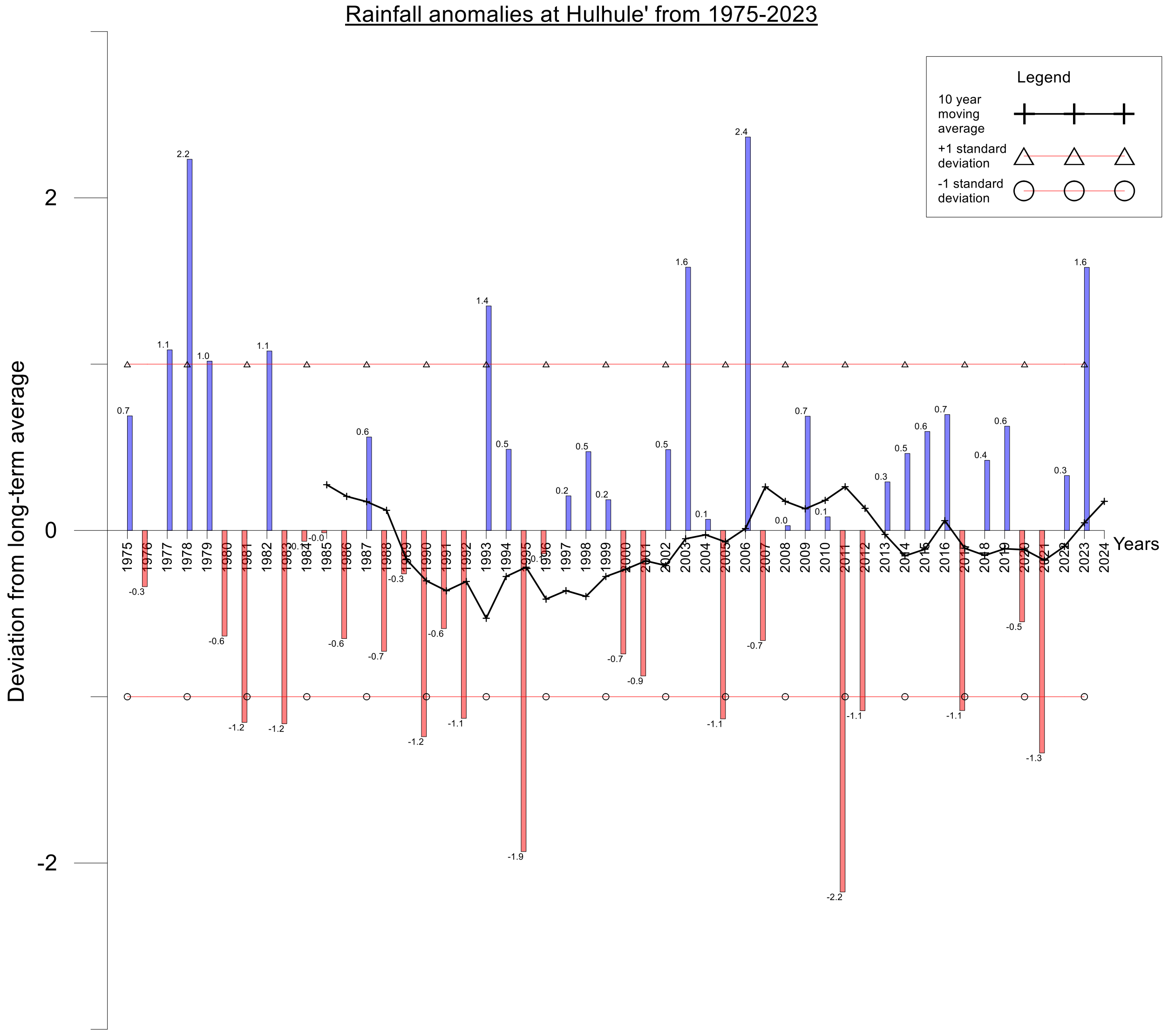


Figure 45: Rainfall anomalies for Hulhule' from 1975 to 2023 with the 10-year moving average. Red lines indicate +1 and -1 standard deviations from the mean. (Data obtained from the Bureau of Meteorology, Maldives).

5.6.3 Seismic Activity

Seismic waves are created when the earth's lithosphere releases a sudden burst of energy shaking the surface of the planet. Earthquakes are manifested when fault lines or tectonic plates move due to these seismic waves. When this occurs at large magnitudes at the seabed, it can cause tsunamis. Only three major events of magnitude above 7.0 had struck the region between 1979 and 2004 (Developing a Disaster Risk Profile for Maldives, Volume 1: Main report, 2006).

K. Hulhumale' is located in the Central region which is in the lowest risk zone.

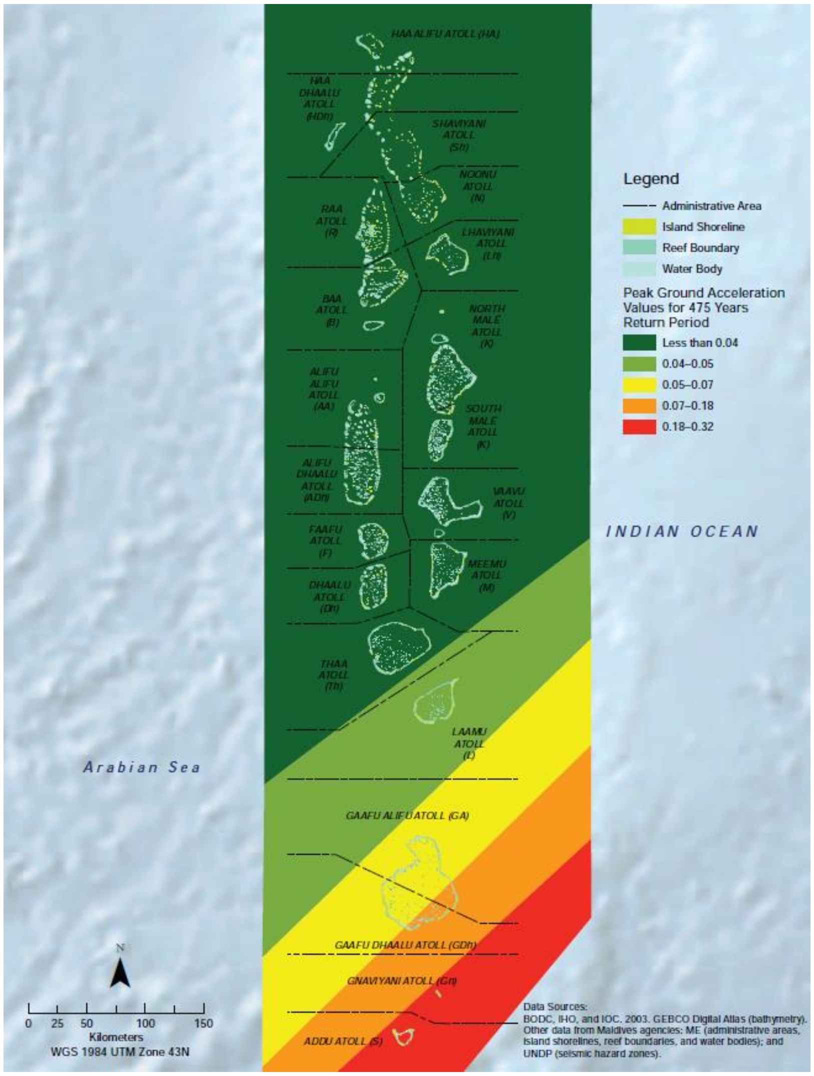


Figure 46 Seismic hazard zoning map of the Maldives from green to red, red being the highest at risk (Multihazard Risk Atlas of Maldives, 2020)

5.6.4 Tsunami

Tsunamis are destructive oceanic waves generated due to disturbances on the sea floor such as earthquakes, volcanic eruptions, underwater landslides, or even meteorite impacts.

In 2004 the second largest tsunamigenic earthquake globally recorded hit Indonesia and generated tsunamis 3-10 meters high travelling across the Indian Ocean striking Maldives with waves ranging 1.2-4.2 m. Out of 198 inhabited islands, 13 were destroyed, 56 sustained major physical damage, and 121 faced moderate damage from flooding.

95% of tsunamis that effect Maldives are generated from the eastern source zones. The risk is high for eastern fringe of eastern atolls, though eastern fringe of some western atolls is also at high risk. By observing bathymetric contours, the islands have been categorised into 5 zones with 1 being the lowest hazard level. K. Hulhumale’ is in a very high-risk zone.

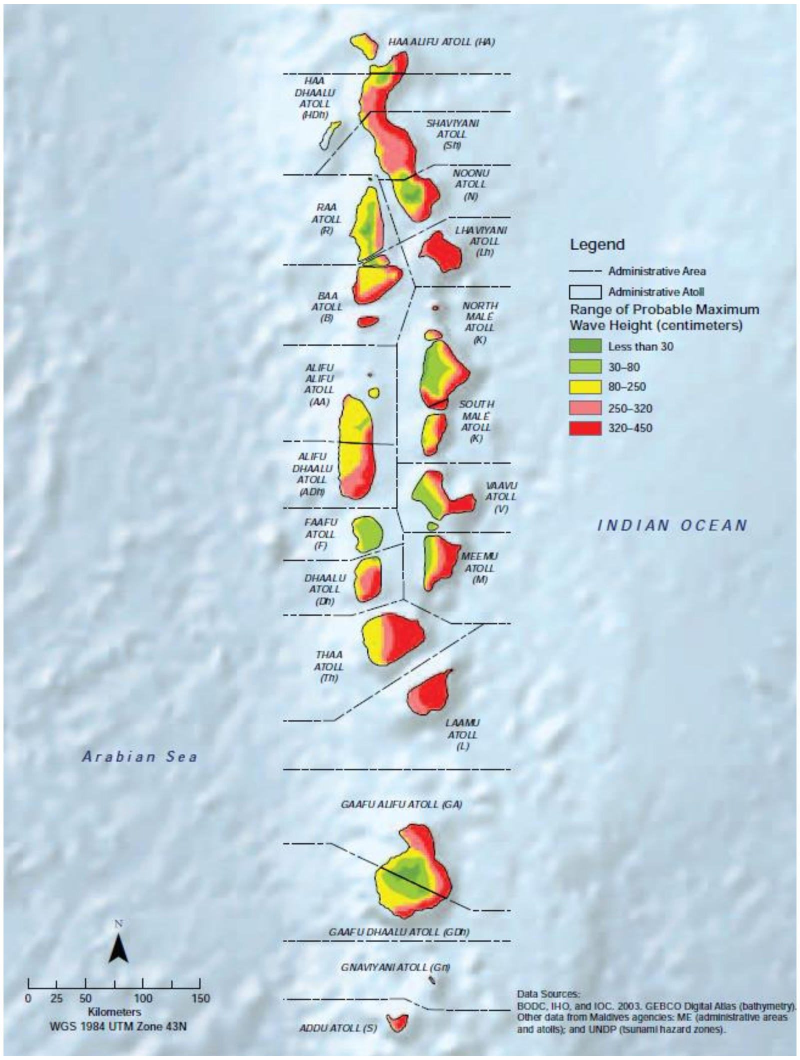


Figure 47: Tsunami hazard zoning map of Maldives (Multihazard Risk Atlas of Maldives, 2020)

6. STAKEHOLDER CONSULTATION

This section describes the stakeholder consultation method and the summary of the outcomes from each of the consulted stakeholders.

6.1 Consultation Method

An email request for stakeholder consultation was sent out to the relevant stakeholders with the approved ToR and a project brief. If the stakeholder wishes for a stakeholder consultation meeting, a meeting was supposed to be held at a convenient time and venue. An option was also given to provide the recommendations and suggestions regarding the proposed project to us in writing, whereby the stakeholder could send us an email highlighting their concerns and recommendations.

6.1.1 Invitations

The following table highlights the email requests sent out to stakeholders inviting for the stakeholder consultations. For the stakeholders that did not respond, the table shows the date at which the invitation was initiation sent and any follow up reminders. The proof for the invitations and reminders is given in the section 6.1.5 under the table Table 22.

Table 18: invitations sent out to stakeholders

Stakeholder	Initial Invitation Sent Date	Reminders	Responded Date
MWSC	15th February 2024	7th March 2024	-
Ghaazee School	15th February 2024	7th March 2024	-
HDC	15th February 2024	-	28th February 2024
STELCO	15th February 2024	7th March 2024	7th March 2024
WAMCO	15th February 2024	-	15th February 2024
Umar Zahir Building managed by Ministry of Construction & Infrastructure	19th February 2024	-	21st February 2024
Help driving school	Called 778-5566 on 19th	-	19th February 2024

	February 2024		
Easy driving school	21st February 2024	7th March 2024	-
YAS Driving School	21st February 2024	-	21st February 2024
Ministry of Transport and Civil Aviation	19th February 2024	7th March 2024	-
MTCC, AG office construction contractor	19th February 2024	7th March 2024	-

6.1.2 Consulted Date and Venues

The following table gives the consulted date, time and venues for each responded stakeholder(s).

Table 19: consultation date, time and venues

Stakeholder	Date	Time	Venue
WAMCO	15th February 2024	2.19 PM	E-mail communication
STELCO	7th March 2024	12:17 PM	E-mail communication
Help Driving School	19th February 2024	10:50 AM	Phone conversation
YAS Driving School	21st February 2024	11:30 AM	Phone conversation
Umar Zahir Building managed by Ministry of Construction & Infrastructure	21st February 2024	13:41 PM	Phone conversation
HDC	28th February 2024	11:00-12:00 AM	Online meeting

6.1.3 Contact Details for all Participants attended to Consultations

The following table gives the contact details of all participants which have attended the consultation meeting(s) for this EIA or contributed via email response.

Table 20: contacts of all stakeholders consulted

Stakeholder	Name	Designation	Contact
WAMCO	Aminath Shafrath Adam	-	aminath.shafrath@wamco.com.mv
Help Driving School	Mohamed Ahmed	Instructor	7785566
YAS Driving School	Ibrahim Abdullah	Owner	9131493
Umar Zahir Building	Hassan Latheef	Assistant Technician	7881985

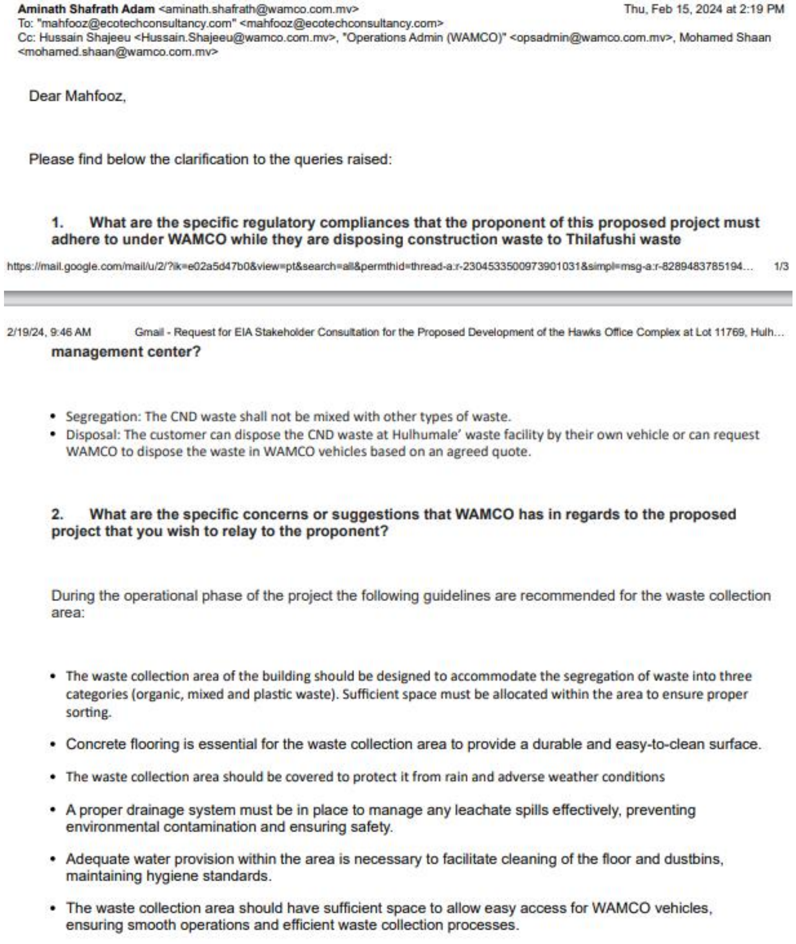
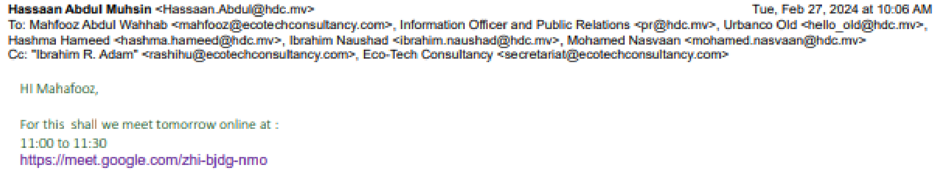
managed by Ministry of Construction & Infrastructure			
HDC	Aishath Ashiya Shathir	Senior Social Planning Officer	aishath.ashiya@hdc.mv
HDC	Suhaa Mohamed	Social Planning Officer	suhaa.mohamed@hdc.mv
HDC	Hassaan Abdul Muhsin	Environmental analyst	hassaan.abdul@hdc.mv
HDC	Ibrahim Naushad	Assistant Urban Planner	ibrahim.naushad@hdc.mv
HDC	Hashma Hameed	Junior Environmental Planner	hashma.hameed@hdc.mv
HDC	Mohamed Nasvaan	Assistant Site Engineer	mohamed.nasvaan@hdc.mv
STELCO	Mohamed Azim	Engineer Hulhumale Distribution, Transmission and Distribution Department	Mohamed.AzimWaheed@stelco.com.mv

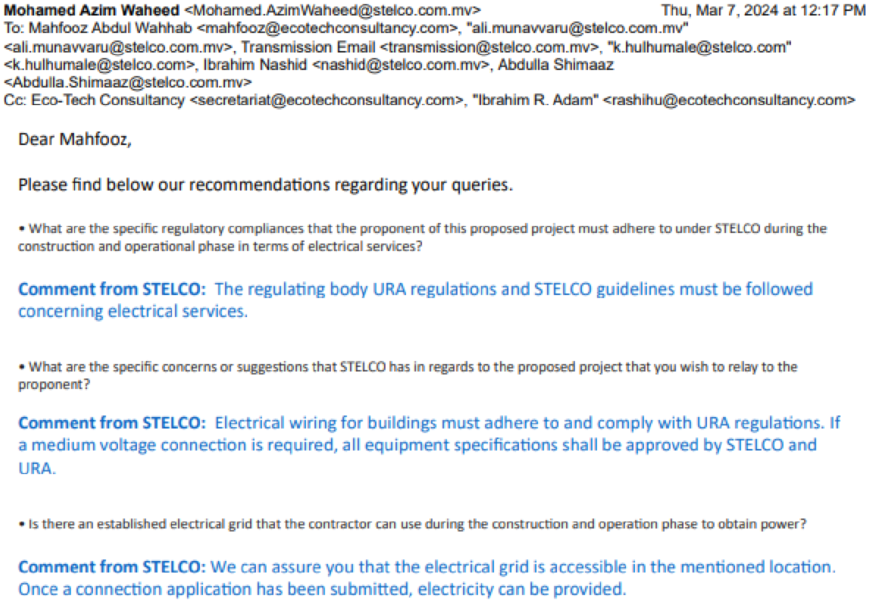
6.1.4 Attendance Sheets for Consultation Meetings or proof of consultations

The following table shows the attendance sheets for consultation meetings (if any) and email proof of consultations with stakeholders.

Table 21: Attendance sheets (if any) and email proof for stakeholder consultations

Stakeholder	Attendance Sheet

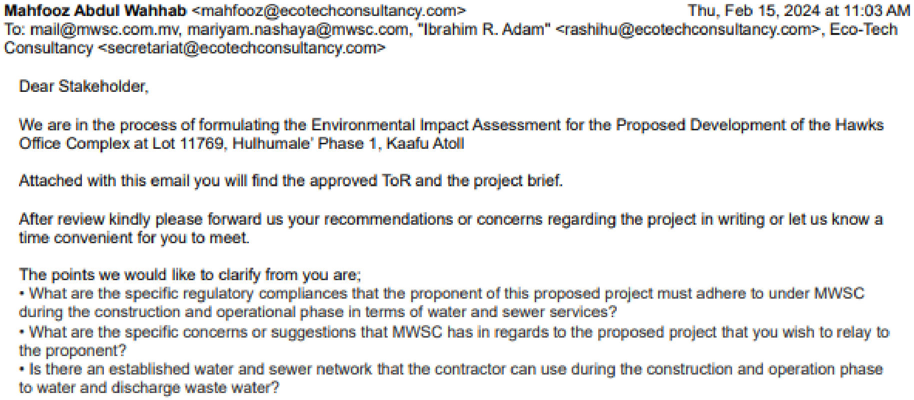
WAMCO	 **Aminath Shafrath Adam** <aminath.shafrath@wamco.com.mv> Thu, Feb 15, 2024 at 2:19 PM To: "mahfooz@ecotechconsultancy.com" <mahfooz@ecotechconsultancy.com> Cc: Hussain Shajeeu <Hussain.Shajeeu@wamco.com.mv>, "Operations Admin (WAMCO)" <opsadmin@wamco.com.mv>, Mohamed Shaan <mohamed.shaan@wamco.com.mv> Dear Mahfooz, Please find below the clarification to the queries raised: **1. What are the specific regulatory compliances that the proponent of this proposed project must adhere to under WAMCO while they are disposing construction waste to Thilafushi waste** https://mail.google.com/mail/u/2/?ik=e02a5d47b0&view=pt&search=all&permthid=thread-a:r-2304533500973901031&simpl=msg-a:r-8289483785194... 1/3 2/19/24, 9:46 AM Gmail - Request for EIA Stakeholder Consultation for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulh... **management center?** • Segregation: The CND waste shall not be mixed with other types of waste. • Disposal: The customer can dispose the CND waste at Hulhumale' waste facility by their own vehicle or can request WAMCO to dispose the waste in WAMCO vehicles based on an agreed quote. **2. What are the specific concerns or suggestions that WAMCO has in regards to the proposed project that you wish to relay to the proponent?** During the operational phase of the project the following guidelines are recommended for the waste collection area: • The waste collection area of the building should be designed to accommodate the segregation of waste into three categories (organic, mixed and plastic waste). Sufficient space must be allocated within the area to ensure proper sorting. • Concrete flooring is essential for the waste collection area to provide a durable and easy-to-clean surface. • The waste collection area should be covered to protect it from rain and adverse weather conditions • A proper drainage system must be in place to manage any leachate spills effectively, preventing environmental contamination and ensuring safety. • Adequate water provision within the area is necessary to facilitate cleaning of the floor and dustbins, maintaining hygiene standards. • The waste collection area should have sufficient space to allow easy access for WAMCO vehicles, ensuring smooth operations and efficient waste collection processes.
HDC	 **Hassaan Abdul Muhsin** <Hassaan.Abdul@hdc.mv> Tue, Feb 27, 2024 at 10:06 AM To: Mahfooz Abdul Wahhab <mahfooz@ecotechconsultancy.com>, Information Officer and Public Relations <pr@hdc.mv>, Urbanco Old <hello_old@hdc.mv>, Hashma Hameed <hashma.hameed@hdc.mv>, Ibrahim Naushad <ibrahim.naushad@hdc.mv>, Mohamed Nasvaan <mohamed.nasvaan@hdc.mv> Cc: "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com>, Eco-Tech Consultancy <secretariat@ecotechconsultancy.com> HI Mahafooz, For this shall we meet tomorrow online at : 11:00 to 11:30 https://meet.google.com/zhi-bjdg-nmo

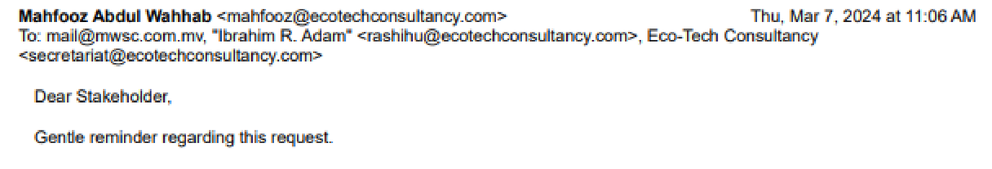
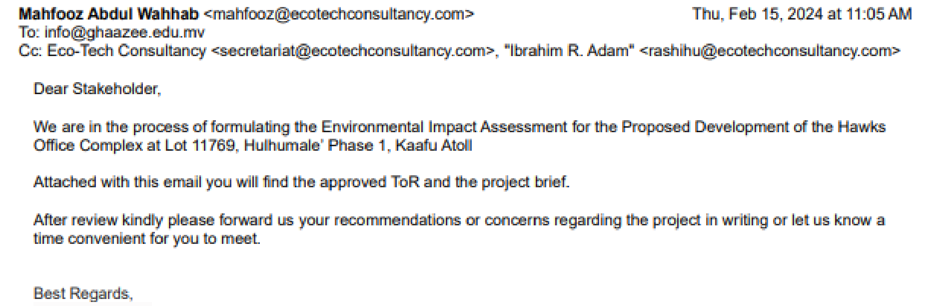
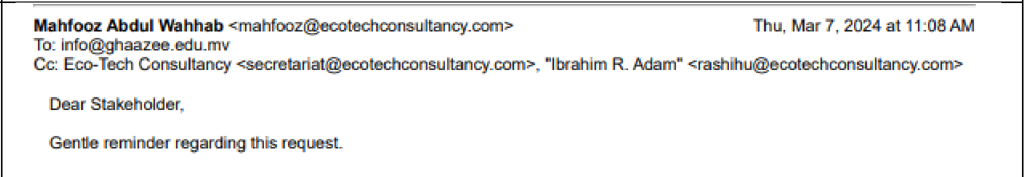
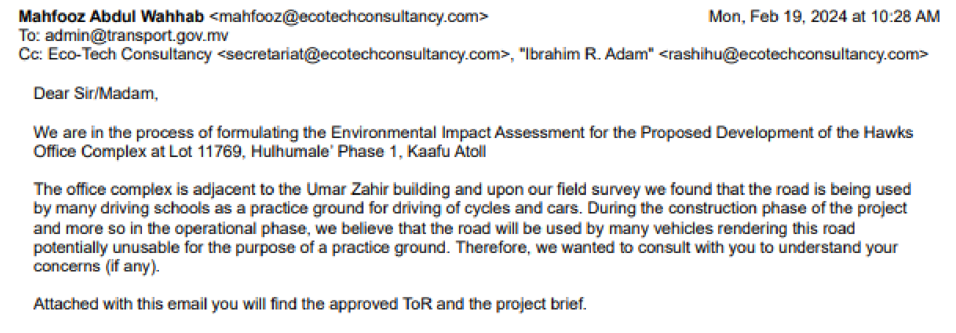
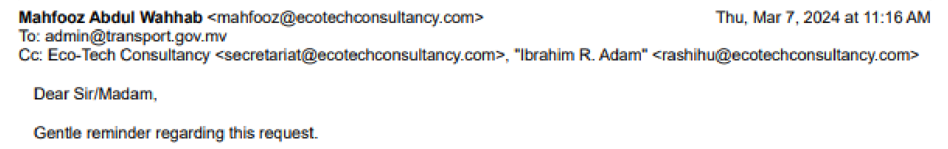
STELCO	 **Mohamed Azim Waheed** <Mohamed.AzimWaheed@stelco.com.mv> Thu, Mar 7, 2024 at 12:17 PM To: Mahfooz Abdul Wahhab <mahfooz@ecotechconsultancy.com>, "ali.munavvaru@stelco.com.mv" <ali.munavvaru@stelco.com.mv>, Transmission Email <transmission@stelco.com.mv>, "k.hulhumale@stelco.com" <k.hulhumale@stelco.com>, Ibrahim Nashid <nashid@stelco.com.mv>, Abdulla Shimaaz <Abdulla.Shimaaz@stelco.com.mv> Cc: Eco-Tech Consultancy <secretariat@ecotechconsultancy.com>, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com> Dear Mahfooz, Please find below our recommendations regarding your queries. • What are the specific regulatory compliances that the proponent of this proposed project must adhere to under STELCO during the construction and operational phase in terms of electrical services? **Comment from STELCO:** The regulating body URA regulations and STELCO guidelines must be followed concerning electrical services. • What are the specific concerns or suggestions that STELCO has in regards to the proposed project that you wish to relay to the proponent? **Comment from STELCO:** Electrical wiring for buildings must adhere to and comply with URA regulations. If a medium voltage connection is required, all equipment specifications shall be approved by STELCO and URA. • Is there an established electrical grid that the contractor can use during the construction and operation phase to obtain power? **Comment from STELCO:** We can assure you that the electrical grid is accessible in the mentioned location. Once a connection application has been submitted, electricity can be provided.

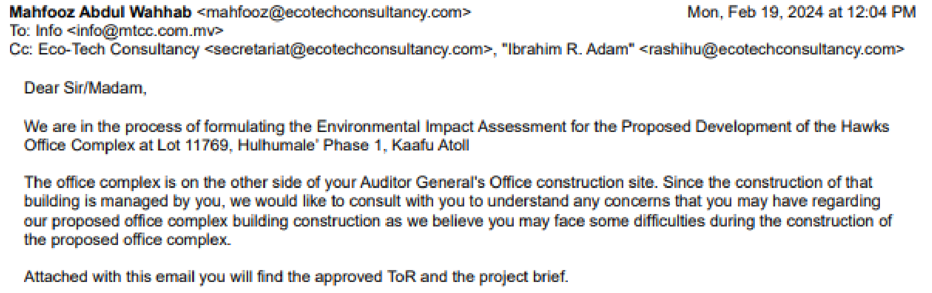
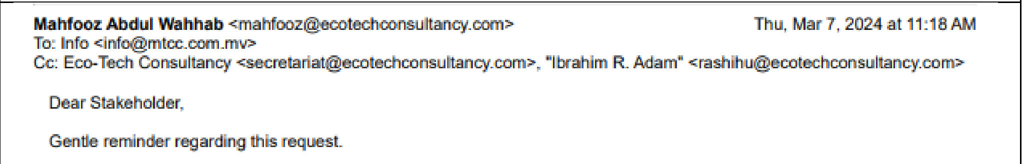
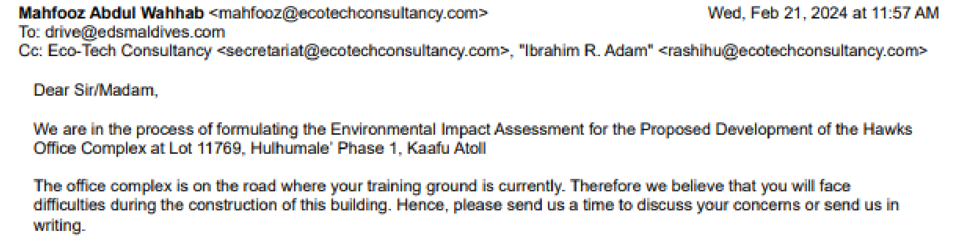
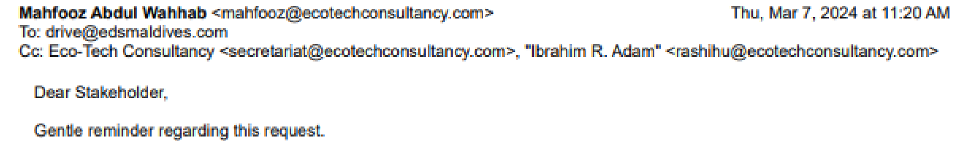
6.1.5 Proof of Invitations sent out for not responded stakeholders

The following table shows the proof of email invitations sent out for the stakeholders that did not respond.

Table 22: proof of invitation sent out to stakeholders

Stakeholder	Partial print of invitations sent out
MWSC	 **Mahfooz Abdul Wahhab** <mahfooz@ecotechconsultancy.com> Thu, Feb 15, 2024 at 11:03 AM To: mail@mwsc.com.mv, mariyam.nashaya@mwsc.com, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com>, Eco-Tech Consultancy <secretariat@ecotechconsultancy.com> Dear Stakeholder, We are in the process of formulating the Environmental Impact Assessment for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll Attached with this email you will find the approved ToR and the project brief. After review kindly please forward us your recommendations or concerns regarding the project in writing or let us know a time convenient for you to meet. The points we would like to clarify from you are; • What are the specific regulatory compliances that the proponent of this proposed project must adhere to under MWSC during the construction and operational phase in terms of water and sewer services? • What are the specific concerns or suggestions that MWSC has in regards to the proposed project that you wish to relay to the proponent? • Is there an established water and sewer network that the contractor can use during the construction and operation phase to water and discharge waste water?

Reminder 1	 **Mahfooz Abdul Wahhab** <mahfooz@ecotechconsultancy.com> Thu, Mar 7, 2024 at 11:06 AM To: mail@mwsc.com.mv, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com>, Eco-Tech Consultancy <secretariat@ecotechconsultancy.com> Dear Stakeholder, Gentle reminder regarding this request.
Ghaazee School	 **Mahfooz Abdul Wahhab** <mahfooz@ecotechconsultancy.com> Thu, Feb 15, 2024 at 11:05 AM To: info@ghaazee.edu.mv Cc: Eco-Tech Consultancy <secretariat@ecotechconsultancy.com>, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com> Dear Stakeholder, We are in the process of formulating the Environmental Impact Assessment for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll Attached with this email you will find the approved ToR and the project brief. After review kindly please forward us your recommendations or concerns regarding the project in writing or let us know a time convenient for you to meet. Best Regards,
Reminder 1	 **Mahfooz Abdul Wahhab** <mahfooz@ecotechconsultancy.com> Thu, Mar 7, 2024 at 11:08 AM To: info@ghaazee.edu.mv Cc: Eco-Tech Consultancy <secretariat@ecotechconsultancy.com>, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com> Dear Stakeholder, Gentle reminder regarding this request.
Ministry of Transport and Civil Aviation	 **Mahfooz Abdul Wahhab** <mahfooz@ecotechconsultancy.com> Mon, Feb 19, 2024 at 10:28 AM To: admin@transport.gov.mv Cc: Eco-Tech Consultancy <secretariat@ecotechconsultancy.com>, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com> Dear Sir/Madam, We are in the process of formulating the Environmental Impact Assessment for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll The office complex is adjacent to the Umar Zahir building and upon our field survey we found that the road is being used by many driving schools as a practice ground for driving of cycles and cars. During the construction phase of the project and more so in the operational phase, we believe that the road will be used by many vehicles rendering this road potentially unusable for the purpose of a practice ground. Therefore, we wanted to consult with you to understand your concerns (if any). Attached with this email you will find the approved ToR and the project brief.
Reminder 1	 **Mahfooz Abdul Wahhab** <mahfooz@ecotechconsultancy.com> Thu, Mar 7, 2024 at 11:16 AM To: admin@transport.gov.mv Cc: Eco-Tech Consultancy <secretariat@ecotechconsultancy.com>, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com> Dear Sir/Madam, Gentle reminder regarding this request.

MTCC, AG office construction contractor	 **Mahfooz Abdul Wahhab** <mahfooz@ecotechconsultancy.com> Mon, Feb 19, 2024 at 12:04 PM To: Info <info@mtcc.com.mv> Cc: Eco-Tech Consultancy <secretariat@ecotechconsultancy.com>, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com> Dear Sir/Madam, We are in the process of formulating the Environmental Impact Assessment for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll The office complex is on the other side of your Auditor General's Office construction site. Since the construction of that building is managed by you, we would like to consult with you to understand any concerns that you may have regarding our proposed office complex building construction as we believe you may face some difficulties during the construction of the proposed office complex. Attached with this email you will find the approved ToR and the project brief.
Reminder 1	 **Mahfooz Abdul Wahhab** <mahfooz@ecotechconsultancy.com> Thu, Mar 7, 2024 at 11:18 AM To: Info <info@mtcc.com.mv> Cc: Eco-Tech Consultancy <secretariat@ecotechconsultancy.com>, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com> Dear Stakeholder, Gentle reminder regarding this request.
Easy Driving School	 **Mahfooz Abdul Wahhab** <mahfooz@ecotechconsultancy.com> Wed, Feb 21, 2024 at 11:57 AM To: drive@edsmaldives.com Cc: Eco-Tech Consultancy <secretariat@ecotechconsultancy.com>, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com> Dear Sir/Madam, We are in the process of formulating the Environmental Impact Assessment for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll The office complex is on the road where your training ground is currently. Therefore we believe that you will face difficulties during the construction of this building. Hence, please send us a time to discuss your concerns or send us in writing.
Reminder 1 (did respond to the reminder and a meeting was set up but the stakeholder did not join)	 **Mahfooz Abdul Wahhab** <mahfooz@ecotechconsultancy.com> Thu, Mar 7, 2024 at 11:20 AM To: drive@edsmaldives.com Cc: Eco-Tech Consultancy <secretariat@ecotechconsultancy.com>, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com> Dear Stakeholder, Gentle reminder regarding this request.

6.2 Consultations Undertaken

Stakeholder consultations were undertaken with the Umar Zahir building managed by Ministry of Construction and Infrastructure, YAS driving school, Help driving school, HDC, STELCO and WAMCO. The summary of outcomes is given for each stakeholder below and the responses from the proponent for the concerns raised.

6.2.1 Umar Zahir Building Managed by Ministry of Construction and Infrastructure

The table below shows the concerns, suggestions and recommendations made by Ministry of Construction and Infrastructure regarding the proposed project along with the proponents' responses for the concerns (if any) which were raised.

Table 23: outcomes of the consultation with Ministry of Construction and Infrastructure

Concerns / Suggestions raised	Proponents Response
If sheet piling is carried out, the vibrations produced can have possible impact on the building as it is prefabricated with a considerable amount of tempered glass.	The engineers will monitor for any damages to nearby building regularly. If any damages are caused then vibration level measurement equipment will be used to monitor vibration levels and as a mitigation measure the sheet piling will be carried out at a very slow pace.
The Ministry recommends to provide them with the vibrational data before sheet piling is carried out (if any).	
Please provide regular updates to your designated point of contact, ensuring transparency regarding construction milestones.	Noted.

6.2.2 YAS Driving School

The table below shows the concerns, suggestions and recommendations made by YAS Driving School regarding the proposed project along with the proponents' responses for the concerns (if any) which were raised.

Table 24: outcomes of the consultation with YAS Driving School

Concerns / Suggestions raised	Proponents Response
The trainings are conducted behind the road on Umar Zahir building because there is no other choice. We have asked transport ministry to allocate us a proper training ground on several occasions but the ministry has not yet allocated us a training ground. The ministry mentioned that we could use the Fithuroanu magu, but it is very dangerous for the trainees as the oncoming traffic from the bridge is through this road. For this reason, we prefer a closed road for the trainees. However, the ministry and HDC does not allow this.	As part of the EIA stakeholder consultation, the EIA consultants have sent out an invitation to Ministry of Transport and Civil Aviation to discuss their concerns regarding this project as highlighted by the Driving Schools it is the responsibility of the ministry to allocate a usable proper training ground.

If the contractor of the proposed project is required to close the road for their construction works they should do so, as it is the responsibility of the transport ministry to allocate us a training ground.	

6.2.3 Help Driving School

The table below shows the concerns, suggestions and recommendations made by Help Driving School regarding the proposed project along with the proponents’ responses for the concerns (if any) which were raised.

Table 25: outcomes of the consultation with Help Driving School

Concerns / Suggestions raised	Proponents Response
There is no designated area where they can practice their training programs	As part of the EIA stakeholder consultation, the EIA consultants have sent out an invitation to Ministry of Transport and Civil Aviation to discuss their concerns regarding this project as highlighted by the Driving Schools it is the responsibility of the ministry to allocate a usable proper training ground.
If the place is not suitable for practice, then they will shift to a new location	

6.2.4 STELCO

The table below shows the concerns, suggestions and recommendations made by STELCO regarding the proposed project along with the proponents’ responses for the concerns (if any) which were raised.

Table 26: outcomes of the consultation with STELCO

Concerns / Suggestions raised	Proponents Response
The regulating body URA regulations and STELCO guidelines must be followed concerning electrical services.	Noted.
Electrical wiring for buildings must adhere to and comply with URA regulations. If a medium voltage connection is required, all equipment specifications shall be approved by STELCO and URA.	Noted.
We can assure you that the electrical grid is accessible in the mentioned location. Once a connection application has been submitted, electricity can be	Noted.

provided.	

6.2.5 HDC

The table below shows the concerns, suggestions and recommendations made by HDC regarding the proposed project along with the proponents' responses for the concerns (if any) which were raised.

Table 27: outcomes of the consultation with HDC

Concerns / Suggestions raised	Proponents Response
Within the immediate vicinity of the proposed project area only office buildings are proposed, residential buildings are proposed further away.	Noted.
If URA dewatering guideline thresholds are not exceeded very deep foundation is now approved by HDC. For example, Ooredoo building foundation is very deep.	Noted.
Even though no residential building is within the vicinity of the project area, people will use the adjacent roads as for example people will visit the offices in Umar Zahir building. Additional user group is the migrant workers that use the temporary housing facilities on the road.	The construction works will be planned such that minimum disturbance will be caused to the user groups.
Relevant developments in the area include; a road and apollo office building.	Noted.
If the proponent wishes to temporarily stockpile sand, they need to send a request to HDC and if an empty plot is available then HDC may grant the approval to do so.	Noted.
A major concern from HDC is road damages during the construction stage of the project.	Planned and efficient mobilization of heavy machinery and materials to ensure minimum damages to road.
The main legislation specifically under HDC that the proponent must follow is the HDC planning guidelines which will be annexed to the contract with the proponent.	Noted.
The foundation of the proposed building is very deep and the boundary wall of Umar Zahir building is very close, hence what are the mitigations planned by the proponent to minimize as damages to the nearby building. HDC recommends to monitor continuously to see if damages occur.	The engineers will monitor for any damages to nearby building regularly. If any damages are caused then vibration level measurement equipment will be used to monitor vibration levels and as a mitigation measure the sheet piling will be carried out at a very slow pace.

Recommends to implement proper noise and dust suppression mitigation measures. Specially controlling the work hours such that noise disturbance is not caused to nearby offices, tree top hospital and park area, mosques.	The construction works will be planned such that minimum disturbance will be caused.
Recommends to properly manage traffic.	Before any road closures the necessary approvals will be taken from the competent authorities.
Some difficulties maybe cause to Umar Zahir bulding users as the parking of umar zahir building as they exist is close to the project area.	Planned and efficient mobilization of heavy machinery and materials.
Dewatering optimum pathway will be recommended by HDC.	Noted.
The proponent shall have a proper dewatering methodology.	A proper dewatering method with estimated dewatering days will be submitted when applying for the dewatering permit.
Recommends to establish the dewatering pathway such that it causes minimal disturbance to road users.	Noted.
All utilities connections can be made after talking with the service providers.	Noted.
The project area is not marked as a flood prone area in HDC flood map; however, we don’t know what will happen in extreme events.	Noted.
The contractor must ensure that the infiltration zones are clean when they demobilize from the site.	Noted.
Maldives Bureau of Statistics will have major statistics of socioeconomic environment of Hulhumale’.	Noted.
Ensure that there is a proper flood management system and plan during the operational stage (basement flood management)	Noted.

6.2.6 WAMCO

The table below shows the concerns, suggestions and recommendations made by WAMCO regarding the proposed project along with the proponents’ responses for the concerns (if any) which were raised.

Table 28: outcomes of the consultation with WAMCO

Concerns / Suggestions raised	Proponents Response
Segregation: The CND waste shall not be mixed with other types of waste.	Noted.
Disposal: The customer can dispose the CND waste at Hulhumale’ waste facility by their own vehicle or can	Noted.

request WAMCO to dispose the waste in WAMCO vehicles based on an agreed quote.	
The waste collection area of the building should be designed to accommodate the segregation of waste into three categories (organic, mixed and plastic waste). Sufficient space must be allocated within the area to ensure proper sorting.	Noted.
Concrete flooring is essential for the waste collection area to provide a durable and easy-to-clean surface.	Noted.
The waste collection area should be covered to protect it from rain and adverse weather conditions.	Noted.
A proper drainage system must be in place to manage any leachate spills effectively, preventing environmental contamination and ensuring safety.	Noted.
Adequate water provision within the area is necessary to facilitate cleaning of the floor and dustbins, maintaining hygiene standards.	Noted.
The waste collection area should have sufficient space to allow easy access for WAMCO vehicles, ensuring smooth operations and efficient waste collection processes.	Noted.

7. POTENTIAL IMPACT ANALYSIS

The impacts from any project can be categorized into two broad categories; constructional and operational impacts. Constructional impacts are the potential impacts which might arise during the construction stage of the proposed project. Operational impacts are the potential impacts which might arise once the newly constructed project facilities become operational.

7.1 Impact Assessment Methodology

The proponent and the consultants have conducted a risk-based environmental review as part of the planning process (Risk Management-Principles and Guidelines, 2011). Data has been drawn from a wide range of sources, including existing similar EIA reports. Similar EIA reports reviewed for the formulation of this EIA include but not limited to the reports mentioned under section 1.8.

The impact assessment was conducted based on professional judgment and expertise of the consultants as well as evaluation of the baseline data and consultation with the stakeholders. This provides an outline on how to identify potential impacts associated with the proposal and evaluate the likelihood and consequences. The impact assessment methodology utilized was also consistent with the methodology outlined in AS/NZS ISO31000 (AS/NZS ISO 31000 : 2009 Risk management - Principles and guidelines, 2009).

The first stage of this methodology was to identify potential impacts. To ensure that all potential impacts were identified, it was important that any specific environment and/or community impact issues were determined based on the locations of the project components as well as type of service to be provided (Wild Environment, 2012). As such, the impacts identified were:-

1. Construction Phase Impacts:-
    - Mobilization impacts- Noise
    - Mobilization impacts- Dust
    - Mobilization impacts- Oil spills on ground

- Mobilization impacts- workforce; covid episode, negative social impacts, illegal labor
- Generation of site clearance, demolition and constructional waste
- Vegetation clearance
- Vibration impacts
- Air Quality-GHGs
- Air Quality-Dust
- Noise Pollution
- Groundwater quality- oil and chemical spills
- Groundwater quality- salinization
- Impacts on marine environment
- Impacts on terrestrial environment- soil and ground
- Risk of accidents and pollution on workers and residents
- Impacts on landscape integrity and scenery
- Socio-economic impacts- Negative
- Socio-economic impacts- Positive

2. Operational Phase Impacts:-
    - Air Quality- GHGs
    - Noise Pollution
    - Ground and marine water quality- negative
    - Groundwater quality- positive
    - Impacts from waste
    - Impacts on landscape integrity and scenery
    - Socio-economic impacts - negative
    - Socio-economic impacts - positive
    - Risk of hazards; flooding
    - Risk of hazards; pest out break
    - Risk of hazards- storm surge
    - Risk of hazards- sea level rise

- Risk of hazards- fire and other accidents

The significance of impacts was assessed using the following matrix (Table 29).

Table 29. Impact assessment matrix (Wild Environment, 2012)

		Consequences				
		Minimal (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Likelihood	Remote (1)	Negligible	Negligible	Very low	Low	Medium
	Unlikely (2)	Negligible	Very low	Low	Medium	High
	Possible (3)	Very low	Low	Medium	High	Very high
	Likely (4)	Low	Medium	High	Very high	Significant
	Certain (5)	Medium	High	Very high	Significant	Significant

Characteristics of the impacts on Table 30 is used to determine the consequences (minimal (1), minor (2), Moderate (3), Major (4), Catastrophic (5)) of each identified impact. For each specific consequence there is 5 likelihood categories (Table 29). Therefore, if an impact has Moderate (3) consequence but a likelihood of Remote (1), then that impact would have “very low” significance. However, if the likelihood is Certain (5) then the impact would have “Very high” significance

Criteria used for assessing the identified impacts are as follows. Note that likelihood and consequences were judged based on the design consideration for the proposed development. These criteria were measured against the impact (if the impact occurred), to ecological and/or human health (Wild Environment, 2012):-

- Likelihood:-
    - Remote- May occur only in exceptional circumstances;
    - Unlikely- Could occur at some time;
    - Possible- Might occur at some time;
    - Likely- More likely to happen than not (i.e. a probability of > 50 %); and
    - Certain- Will probably occur in most circumstances.
- Consequences:-
    - Minimal- Impact has no significant risk to environment either short term or long term;

- Minor- The impact is short term and causes very limited risk to the environment;
- Moderate- Impact gives rise to some concern, may cause long term environmental problems but are likely short term and acceptable;
- Major- Impact is long term, small scale and environmentally risky. Impact severely damages the environment; and
- Catastrophic- Impact is long term and irreversible, large scale and detrimental to the environment.

The likelihood measures the probability of occurrence of an event whereas consequences evaluate the significance of impact on the environment in the event of an incident. Based on the likelihood and consequences for each of the identified impacts, the significance level is determined (Table 29).

Impact characteristics such as the type of impact, nature of the impact, impact range, impact duration as well as reversibility of the impacts were assessed using the grading scales for which are given on Table 30 below.

Table 30. Grading scale of the characteristics of impacts

Characteristic of impact	Grading	Explanation
Type	Direct	Direct impacts without intervening factors or intermediaries
	Indirect	Triggered by but not immediate effect of the proposed project
Nature	Positive	Impacts resulting in a desirable effect
	Negative	Impacts resulting in an undesirable effect
	Cumulative	Impacts of an action when combined with impacts from projects or actions that have been undertaken recently or will be carried out in the near future.
Range	Local	Impacts limited to project site
	Island	Impacts of importance at island level
	Atoll	Impact of importance at Atoll level
	Nation	Impacts of national character
Duration	Short-term	Occurring over a short period of time
	Intermittent	Impacts occurring at irregular intervals
	Long-term	Occurring over a long period of time
	Continuous	Impacts occurring continuously
Reversibility	Reversible	Previous state (or equivalent) can be restored
	Irreversible	Not able to alter the consequence of impact

7.2 Justification for selected Impact Prediction and Assessment Method

The most common methods of impact prediction include the usage of checklist, matrices, networks, overlays, GIS and computer expert systems. The use of any single method has its disadvantages for instance checklist maybe easy to understand and use but it does not distinguish between direct and indirect impacts (UNEP, 2002). Matrices are good for displaying EIA results and links actions to impacts however have the disadvantage of double-counting of impacts. Networks can distinguish between direct and indirect impacts but can be very complex. Overlays are good at displaying spatial impacts but does not address impact duration and probability. GIS and computer expert systems are good for impact identification and spatial analysis but requires a lot of data.

The employed method in this EIA is a combination of all of the above-mentioned methods with the addition of profession judgement of the consultant from past experiences that provide an easy and simple method to analyze impacts with limited data. The method can distinguish between direct, indirect and cumulative impacts while linking project activities to impacts. The method distinguishes impacts that can realistically be detrimental to the environment by linking consequences of an impact to its probability of occurrence. Finally, this method consumes very less time and hence rapid assessments can be made which is especially advantageous in the Maldives where EIA consultants are expected to complete EIAs in a very short duration.

7.3 Limitations and Uncertainties in Impact Prediction and Assessment Method

Risks and uncertainties are inherent in any environmental and ecological problem-solving technique and needs to be acknowledged and incorporated in any decision-making process. Risk is the chance that an adverse outcome occurs while uncertainty arises from an imperfect understanding of a system due to uncertainty about facts (McAlpine, et al., 2010). Our understanding of the environment is limited mainly due to the lack of long-term data and complexity of the ecosystem. For example, the assessments were done during one season and impacts are predicted based on these assessments. However, how the magnitudes of these impacts and how they behave in nature during the other season is quite uncertain.

The potential environmental impacts from the proposed project are all predicted, hence there may be variables affecting the accuracy of these impacts due to natural variations such as site conditions and uncertainties in scales and magnitudes. While every attempt has been made to accurately predict the potential impacts from this project, there are unforeseen and uncertain factors which might cause deviations in the impacts outlined herein. For instance, a natural phenomenon.

Moreover, assessment of existing conditions requires a benchmark against which these conditions can be compared, however, lack of such benchmarks is a great hindrance to analyzing the environmental impacts in some instances. In addition to this, limited time availability and lack of available factual information are among major limitations to impact predictions. In the Maldives, more often than not, limited availability of published information on environmental and social environment of the islands has led to the dependency on verbal communication with locals and other stakeholders which are not always very accurate.

To add, a major uncertainty arises from the lack of information about the project activities from developers which leads to assumptions being made based on the experience of consultants, for example the proposed development will be designed and built conforming to international standards, the working staff at the facility will be well trained, will follow O&M procedures and operational plan diligently and the prescribed mitigation measures in this EIA report will be followed by the proponent

Anyhow, based on the risk assessment outlined above, the environmental impact assessment is set out below:-

7.4 Construction Phase Impacts

This section describes the significance (Table 31) and impact characteristics for the construction phase impacts.

Table 31. Predicted impacts and anticipated significance of impacts during construction phase of the project

Potential Impacts	**Likelihood**	**Consequence**	**Significance**
Mobilization impacts- Noise	Certain	Minor	High
Mobilization impacts- Dust	Certain	Minor	High
Mobilization impacts- Oil spills on ground	Possible	Major	High
Mobilization impacts- workforce; covid episode, negative social impacts, illegal labor	Possible	Moderate	Medium
Generation of site clearance, demolition and constructional waste	Possible	Moderate	Medium
Vegetation clearance	Certain	Moderate	Very High
Vibration impacts	Possible	Major	High
Air Quality-GHGs	Certain	Catastrophic	Significant
Air Quality-Dust	Certain	Moderate	Very High
Noise Pollution	Certain	Moderate	Very High
Groundwater quality- oil and chemical spills	Possible	Major	High
Groundwater quality- salinization	Certain	Major	Significant
Impacts on marine environment	Certain	Moderate	Very High
Impacts on terrestrial environment- soil and ground	Certain	Major	Significant
Risk of accidents and pollution on workers and road users	Possible	Catastrophic	Very High
Impacts on landscape integrity and scenery	Certain	Moderate	Very High
Socio-economic impacts- Negative	Certain	Major	Very High
Socio-economic impacts- Positive	Unlikely	Moderate	Low

Impacts during construction phase of the project are mainly anticipated to be short-term and reversible (Table 32) as most impacts will last only for the duration of the construction phase of the project.

Table 32. Characteristics of predicted impacts during the construction phase of the project

Potential Impact	**Type**	**Nature**	**Range**	**Duration**	**Reversibility**
Mobilization impacts- Noise	Direct & Cumulative	Negative	Local	Short-term	Reversible
Mobilization impacts- Dust	Direct	Negative	Local	Short-term	Reversible
Mobilization impacts- Oil spills on ground	Direct	Negative	Local	Short-term	Irreversible
Mobilization impacts- workforce; covid episode, negative social impacts, illegal labor	Direct	Negative	Island	Short-term	Reversible
Generation of site clearance, demolition and constructional waste	Direct	Negative	Local	Short-term	Reversible

Vegetation clearance	Direct & Cumulative	Negative	Local	Long-term	Reversible
Vibration impacts	Direct	Negative	Local	Intermittent	Reversible
Air Quality-GHGs	Direct	Negative	Nation	Long-term	Irreversible
Air Quality-Dust	Direct & Cumulative	Negative	Local	Intermittent	Reversible
Noise Pollution	Direct & Cumulative	Negative	Local	Intermittent	Reversible
Groundwater quality- oil and chemical spills	Direct	Negative	Local	Short-term	Irreversible
Groundwater quality- salinization	Direct & Cumulative	Negative	Local	Short-term	Irreversible
Impacts on marine environment	Indirect	Negative	Local	Short-term	Reversible
Impacts on terrestrial environment- soil and ground	Direct & Indirect	Negative	Local	Long-term	Irreversible
Risk of accidents and pollution on workers and road users	Direct	Negative	Local	Short-term	Irreversible
Impacts on landscape integrity and scenery	Direct	Negative	Local	Short-term	Reversible
Socio-economic impacts- Negative	Direct & Indirect	Negative	Local	Short-term	Reversible
Socio-economic impacts- Positive	Direct	Positive	Local	Short-term	Reversible

7.4.1 Mobilization impacts- Noise

Noise is expected to be generated due to the direct activities of the project from the mobilization of cranes, concrete mixing machine, lorries and other heavy vehicles, machinery and construction materials to the project site. The impact is expected to be negative as the noise generated will cause disturbance to people that use the nearby roads and the people residing within the nearby offices mainly workers in Umar Zahir building, as this building is adjacent to the proposed office complex. This impact will be cumulative as the noise generated would add to the noise already being generated due to the construction of the Auditor General's Office by MTCC. The range of the impact would be localized to the adjacent roads surrounding the project site where the proponent will use to mobilize. The impact is expected to be short-term as the mobilization will be completed within a short period of time. This impact is reversible as once the mobilization is over, the impact ceases. Considering the aforementioned characteristics of the impact, the consequences from the impact is minor as it does not cause any long-term environmental problems.

The likelihood of this impact occurring is certain as noise would definitely be generated during the mobilization activities. Therefore, the significance score for this impact is high.

7.4.2 Mobilization impacts- Dust

Dust is expected to be generated when the construction materials like cement and sand are unloaded to the project site. The impact is negative as the dust generated may become a nuisance to the working staff and in some cases continued exposure to dust may cause allergic reactions in people who are sensitive to dust. The dust generated may also be a nuisance to the people using nearby roads. The range of the impact would be localized to a small area surrounding the project site. The impact is expected to be short-term as the mobilization will be completed within a short period of time. This impact is reversible as once the mobilization is over, the impact ceases. Considering the aforementioned characteristics of the impact, the consequences from the impact is minor as it does not cause any long-term environmental problems. The likelihood of this impact occurring is certain as dust would definitely be generated during the mobilization activities. Therefore, the significance score for this impact is high.

7.4.3 Mobilization impacts- Oil spills on ground

The potential for oil spills on ground arises due to the direct activities of this project from the operation of vehicles and heavy machinery on land. The impact is of negative nature as the groundwater would be polluted. However, the impact would be localized to the mobilization route. The impact is expected to be short-term as the mobilization would be completed on a short period of time. The impact is considered irreversible as contaminated groundwater takes a long time to recover and a lot of money have to be spent on rehabilitation. Considering the aforementioned characteristics of the impact, the consequences from the impact is major. The likelihood of this impact occurring is possible. The significance score for this impact is high.

7.4.4 Mobilization impacts- workforce; covid episode, negative social impacts, illegal labor

There are three aspects of impacts that could arise due to mobilization of a workforce. Firstly, negative social impacts due to the workers not behaving as per the social norms and regulations of the Maldives. Secondly implication due to illegal labour. The potential for an outbreak of covid19 arises due to the direct activities of this project from the mobilization of workforce to the project site for the proposed project. The impact is negative as spread of covid within the mobilized workforce could practically halt the project. Since the whole workforce maybe effected due to covid spreading, the range of this impact is at Island level. The impact is expected to be short-term as the workforce will be mobilized for a set duration for the construction phase. Now that the majority of people are vaccinated the covid19 virus is not life threatening as such the impact is considered reversible however still considering that a covid episode within the mobilized workforce could halt the project, the consequences were considered moderate. The likelihood of this impact occurring is possible, hence the significance score for this impact is medium.

7.4.5 Generation of site clearance, demolition and constructional waste

Green waste would be generated due to the direct activities of the project from the minor vegetation clearance for the construction of the required office building complex on the project site. No demolition waste is expected as there are no structures to be demolished at the project site. Large volume of excavated earth (sand), packaging waste and construction waste is expected to be generated during the construction of the proposed office building. The impact is of negative nature as if not properly managed it is aesthetically not pleasing and has potential to pollute and contaminate surrounding roads. It is anticipated that only the project sites and surrounding areas will be impacted hence the range is local. The impact is short-term and reversible as will be alleviated once waste is removed. however still considering that improper management of waste could pollute the surrounding environment, the consequences were considered moderate. The likelihood of this impact occurring is possible as there is always potential for workers negligence to properly manage waste. The significance score for this impact is medium.

7.4.6 Vegetation clearance

This impact arises due to the direct activities of the project which requires removal of vegetation for construction of the office building on the project site. The impact is of negative and cumulative nature as the vegetation cover of the Island will be reduced. The impact is of local level range as a minor area of vegetation is required to be removed in order to construct the office building on the project site. The impact itself is short-term as the land clearance works will be completed in a short duration and due to the fact that the number of large trees required to remove is very less, the impact is considered reversible as the trees removed for the construction of this project can be easily replanted. Hence, the consequences from this impact were considered as moderate. The likelihood of this impact occurring is certain as trees on the footprint of the office building will be cleared. The final significance score for this impact is very high.

7.4.7 Vibration impacts

This impact arises due to the direct activities of the project from the operation of vehicles and heavy machinery, most notably when the sheet piles are driven into the ground for the excavation of the foundation. The impact is of negative nature as the vibrations may damage any nearby buildings. The closest building is Umar Zahir building and the manager of the building has indicated that the building has a considerable amount of tempered glass. As such if strong vibration are generated during the sheet piling works, this might cause damages to this building.

The range of this impact is local as the buildings adjacent to any operating heavy vehicles or machinery will be impacted. This impact would be intermittent as vibration would be generated during operation of heavy vehicles and machinery only and will cease once the operation stops (reversible). Since vibrations could causes structural damages to buildings, the consequences from this impact were considered at major level. The likelihood of this impact occurring is possible as there are buildings adjacent to the project site. The final significance score for this impact is high.

7.4.8 Air Quality-GHGs

Impacts on air quality during the constructional phase is a direct impact generally credited to operation of machinery and equipment which require electricity and vehicles which burn fuel. The main contributor would be the operation of lorries/pickups or other heavy vehicles that will be used to transfer heavy machinery, construction materials and equipment to the project site. Additionally, the crane, excavator, concrete mixer, lorries and other machinery that use fuel for power during the construction works. The negative impact to air quality would be due to the release of GHGs and any other air pollutants to the atmosphere. Release of GHGs into the atmosphere during the construction phase is low when compared to the nations carbon budget but it would still contribute to the nations carbon budget. As such, the effects of the released GHGs concerns the entire Nation, the range of this impact was considered at National level. Even though GHGs will be released for a short period of time, regardless this would contribute to the GHG emission of the nation; hence the cumulative nature of this impact. And since the released GHGs will stay in the atmosphere for a long period of time this impact was considered long-term. The rise in concentration of GHGs in the atmosphere has been a huge global environmental issue which is responsible for global warming, ocean acidification and many other irreversible environmental issues. Considering the aforementioned characteristics of the impact, the consequences from the impact is considered catastrophic as it is long term, irreversible, large scale and detrimental to environment. The likelihood of this impact occurring is certain as GHGs would definitely be generated from the operation of machinery. Therefore, the significance score for this impact is significant.

7.4.9 Air Quality-Dust

Impacts on air quality during the construction phase also arise due to the release of dust during excavation for foundation. The impact is of negative nature as it pollutes the air and cause nuisance to workers and nearby offices. This impact is also cumulative as the dust from this proposed project will add to the pollution due to the ongoing Auditor General's Office construction works by MTCC. However, the range of the impact would be limited to a small area surrounding the project site. This impact would be intermittent as dust would be generated during operation of heavy machinery only. This impact is reversible as dust would not be generated once the construction works are completed. Therefore, the consequences from this impact are moderate. The likelihood of this impact occurring is certain as dust would definitely be generated from the operation of machinery. Therefore, the significance score for this impact is very high.

7.4.10 Noise Pollution

Similar to air quality, impacts on noise level during the constructional phase is a direct impact generally credited to operation of machinery, equipment and vehicles. The highest noise would most likely be generated from the lorries/pickups that would be used to load and unload the construction materials and equipment to the project site and operation of excavator, cranes, concrete mixer, lorries during foundation laying works. The impact is of negative nature as it has the tendency to disturb workers and people in nearby offices. The impact will be cumulative as the noise due to this project will add to the noise pollution from the ongoing construction of the Auditor General's Office. The range of the impact will be localized to a small area surrounding the project site at irregular intervals as noise would be generated when heavy machinery is operational and would cease once operation of machinery stops, hence the consequences from this impact is deemed moderate. The likelihood of this impact occurring is certain and the final significance score for this impact is very high.

7.4.11 Groundwater quality- oil and chemical spills

Impacts to ground water quality during the constructional phase is a direct impact credited to the operation of land-based machinery that will be used during the construction of the proposed office building. The impact arises from the potential for occurrence of oils and chemical spills during the operation of machinery and construction works. Even though it could be minimized with regular maintenance, in the event that oils and chemicals do spill, the impacts could have moderate to major negative effects on the groundwater quality due to porous nature of soil on the Island. The range of the impact will be localized to a small area surrounding the project site. The impact itself is expected to be short-term as construction of office building will be completed in a short period of time, however if a spill does occur, the effects would be irreversible as contaminated groundwater takes a long time to recover. hence the consequences from this impact are deemed major. The likelihood of this impact occurring is possible and as such this impact scored a significance rating of high.

7.4.12 Groundwater quality- salinization

Another direct impact to groundwater quality arises due to dewatering for laying foundation for the proposed office building, during construction of foundation. The impact is of negative nature as dewatering causes groundwater salinization. This impact will be further aggravated as the Auditor General’s office construction is also at the dewatering stage. The range of the impact will be localized to a small area surrounding the project site where dewatering is carried out. The impact itself is expected to be short-term as dewatering will be completed in a short period of time, however the effects to groundwater is considered irreversible. hence the consequences from this impact are deemed major. The likelihood of this impact occurring is certain and as such this impact scored a significance rating of significant.

7.4.13 Impacts on marine environment

Impacts on the marine environment due to this project arises indirectly from the discharge of dewatering water to the lagoon. The negative impact is turbidity at the discharge point in to the lagoon. The impact would be localized to an area surrounding the discharge point in the lagoon environment. The impact would be short-term as this impact would cease once the dewatering is completed. Furthermore, the impact is considered reversible as the water quality would potentially return to normal after a few tidal cycles. The consequences from this impact are considered moderate as the lagoon environment where the dewatering water is to be discharged is already a very disturbed environment. The likelihood of this impact occurring is certain and the final significance rating is very high.

7.4.14 Impacts on terrestrial environment- soil and ground

Impacts to soil and ground are envisaged due to direct activities of the project. Compaction of ground is anticipated due to operation of heavy machinery. Excavation, trenching and paving works will also compromise the soil profile. The indirect impact from the compaction of ground maybe flooding due to reduced percolation of rainwater. The impact is of negative nature and with a range limited to the project site. While the impact itself is short-term as the construction works will be completed within a set period, the impacts from soil compaction is long-term. The impact was as such considered irreversible. hence the consequences from this impact are deemed major. The likelihood of this impact occurring is certain and as such the final significance score for this impact is significant.

7.4.15 Risk of accidents and pollution on workers and road users

As typical of any construction project, there lies the risk of accidents and pollution on workers from this project as well due to the construction activities. There is always the inherent risk of health and safety due to workplace incidents like chemical spills or injuries. Risks to road users include falling of construction materials for people walking along the roadside and accidents with the heavy machinery that come into the road as the road into the project site is being used as a practice ground by many driving schools. Furthermore, due to improper living conditions provided to the workers by the proponent as this is very common in the Maldives. The proponent must ensure that the workers are well taken care of. The impact is of negative nature as any accidents in work place or improper living conditions at provided will lead to health risks to workers. The range of the impact is limited to project site and small surrounding area; hence it is extremely important to monitor unauthorized access into the project sites. The impact itself is short-term and reversible as once construction is finished the impact is alleviated, however is considered irreversible as injuries to people can be fatal. hence the consequences from this impact are deemed catastrophic. Since the likelihood of these impacts are possible given that proper mitigation measures would be followed, the final significance of this impact is very high.

7.4.16 Impacts on landscape integrity and scenery

Negative impacts to the landscape integrity and scenery are anticipated from the direct activities of the project, where the mobilization of materials and vehicles to the project site could cause the scenery to be compromised. The impact is of local level range as a small area surrounding the project site is anticipated to be affected. This impact is considered short-term and reversible as construction works will be completed within a short period. The overall consequence from this is moderate and with a likelihood of certain, giving it a final significance rating if very high.

7.4.17 Socio-economic impacts- Negative

Negative impacts to socio-economic environmental is anticipated due to the direct and indirect activities of the project. The indirect impact is due to the potential for mosquito growth in the excavated area due to delays in foundation laying works or due to containers that allow water to retain, that are left within the project site. Increase is mosquitoes may lead to spread of vector borne diseases. However, this impact is very unlikely to occur as the proponent will follow the construction schedule and proper waste management will be implemented. Direct impacts include hindrance to traffic flow during the mobilization works and road blocks during the construction of the foundation and flooring works. Furthermore, there is always the potential for damages to the roads during the operation of heavy machinery. In addition to the aforementioned impacts, impacts are anticipated to be caused to the ongoing driving school activities on the road, mostly likely the practice ground will need to be relocated. The impact is of local level range as a small area surrounding the project site is anticipated to be affected. This impact is considered short-term and reversible as construction works will be completed within a short period. The overall consequence from this is moderate and with a likelihood of certain, giving it a final significance rating if very high.

7.4.18 Socio-economic impacts- Positive

This impact arises due to the direct activities of the project requiring labour force to carry out the works under the project. It is of positive nature as people has the opportunity to get temporary jobs. Since a limited number of people could potentially get the job, it is of local level range. The impact is short-term and reversible as one the project is completed the jobs will be done. The final consequences rating for this impact is moderate. The likelihood of this impact occurring is unlikely as the proponent will use their own workforce. Hence, the final significance rating for this impact is low.

7.5 Operational Phase Impacts

This section describes the significance (Table 33) and impact characteristics for the operational phase impacts.

Table 33. Predicted impacts and anticipated significance of impacts during operation phase of the project

Potential Impacts	**Likelihood**	**Consequence**	**Significance**
Air Quality- GHGs	Certain	Catastrophic	Significant
Noise Pollution	Certain	Moderate	Very High
Ground and marine water quality- negative	Unlikely	Major	Medium
Groundwater quality- positive	Certain	Major	Significant
Impacts from waste	Unlikely	Moderate	Low
Impacts on landscape integrity and scenery	Certain	Major	Significant
Socio-economic impacts - negative	Possible	Major	High
Socio-economic impacts - positive	Certain	Catastrophic	Significant
Risk of hazards; flooding	Unlikely	Major	High
Risk of hazards; pest out break	Unlikely	Moderate	Low
Risk of hazards- storm surge	Possible	Major	High
Risk of hazards- sea level rise	Unlikely	Major	Medium
Risk of hazards- fire and other accidents	Unlikely	Major	Medium

Unlike constructional impacts, operational impacts are anticipated to be more long-term but irreversible (Table 34). It should be noted that with the application of proper mitigation measures as outlined in section 9.1 of this report, almost every negative impact could be minimized.

Table 34. Characteristics of the predicted impacts during the operation phase of the project

Potential Impacts	Type	Nature	Range	Duration	Reversibility
Air Quality- GHGs	Indirect	Negative	Nation	Continuous	Irreversible

Noise Pollution	Direct & Indirect	Negative	Local	Long-term	Reversible
Ground and marine water quality- negative	Direct & Indirect	Negative	Local	Long-term	Irreversible
Groundwater quality- positive	Direct	Positive	Island	Long-term	Reversible
Impacts from waste	Direct	Negative	Local	Long-term	Reversible
Impacts on landscape integrity and scenery	Direct	Positive	Local	Long-term	Irreversible
Socio-economic impacts - negative	Direct	Negative	Local	Long-term	Reversible
Socio-economic impacts - positive	Direct	Positive	Island	Long-term	Reversible
Risk of hazards; flooding	Direct	Negative	Island	Long-term	Irreversible
Risk of hazards; pest out break	Direct	Negative	Island	Long-term	Reversible
Risk of hazards- storm surge	Direct	Negative	Island	Long-term	Irreversible
Risk of hazards- sea level rise	Direct	Negative	Island	Long-term	Irreversible
Risk of hazards- fire and other accidents	Direct	Negative	Island	Long-term	Irreversible

7.5.1 Air Quality- GHGs

Impacts to air quality arises indirectly from the operation of the office building as the increased demand for utilities and waste management is provided by the respective service provider. Increased demand for water and sewer will be catered by MWSC, electricity by STELCO and waste management by WAMCO. The negative impact to air quality would be due to the release of GHGs and any other air pollutants to the atmosphere by the respective service provider in catering for the increase demand. Release of GHGs into the atmosphere during the operational phase is low when compared to the nations carbon budget, however it would still contribute to the nation's overall carbon budget and hence the range of this impact was considered at national level. The impact would be continuously occurring as long as the office building is in operational condition but would cease if the buildings operations stops or the service providers. However, the already released GHGs will stay in the atmosphere for a long period of time and would contribute to global warming, ocean acidification and other related cumulative environmental impacts, as such the impact was considered irreversible. Considering the aforementioned characteristics of the impact, the consequences from the impact is considered catastrophic as it is long term, irreversible, large scale and detrimental to environment. The likelihood of this impact occurring is certain, hence the significance score for this impact is significant.

7.5.2 Noise Pollution

Noise pollution arises due to the noise generated from the direct activities of the project from the operations of the office building. These include noise from the customers and workers that visit the office. The impact is of negative nature as the overall ambient noise level of the area will increase and the people in the vicinity will be impacted negatively. The impact range is localized to a small area surrounding the project site. This impact would be continuously occurring as long as the building is operational. The impact is reversible as noise generated would cease upon discontinuation of the operations. Hence, the consequences from this impact are moderate. The likelihood of this impact occurring is certain, hence the significance score for this impact is very high.

7.5.3 Ground and marine water quality- negative

Negative impacts to ground water quality arises due to the potential for leaks and spills to occur in the utilities established within the office building. Furthermore, salinization if groundwater is extracted. Indirect impacts to marine water quality are anticipated due to the increased water demand and increased output of waste water from the operation of the building. Of course, these will be managed by the respective service provider. The negative impact would be the contamination of water due to the leakage of sewerage from the utilities. Impacts to the groundwater will be localized, however the impacts to marine water quality from increase waste water discharge could be considered at Island level. While the impact may occur for a short duration as the management would quickly rectify any leaks or spills, any unnoticed or unidentified leaks would continue to detriment water quality. Furthermore, as contaminated groundwater from any leaks would take a long time to recover and deterioration of marine water quality could lead to irreversible impacts, this impact was considered as a long-term and irreversible impact. As such the consequences from this impact is considered major but it is unlikely to occur as proper systems and mitigation measures would be installed and implemented at the utility systems within the building, hence the final significance rating for this impact is medium.

7.5.4 Groundwater quality- positive

Positive impacts to groundwater are envisaged from the operation of this project if IWRM principles are established.

7.5.5 Impacts from waste

This impact arises due to the direct operation of the building. Organic waste and non-organic waste will be generated during the operational stage of the building from the workers and plastic/paper waste from the office. The impact is of negative nature as if the organic waste is not managed properly it could lead to environmental issues. For example, bad odour from organic waste. The range of the impact will be local as the waste from the workers would be kept within the basement of the building. The impact will be long-term as waste would be generated as long as the building is operational and would cease once the operation of building stops. The consequences from this impact are moderate as decomposition of garbage within the basement may cause spread of diseases in addition to bad odour. Proper waste management principles will be established within the building, as this impact is unlikely to occur. Hence, the final significance score for this impact is low.

7.5.6 Impacts on landscape integrity and scenery

This impact arises from the direct activities of the project from the operation of the newly constructed office building with all its facilities. The impact is of positive nature as the building will be incorporated with modern architecture that will greatly improve the aesthetics of the area. The range of this impact would be at local level as the surrounding area will be affected. The impact will be long-term and irreversible. Hence, the consequences envisaged are major and the likelihood of this impact occurring is certain, giving this impact a significance rating of significant.

7.5.7 Socio-economic impacts – negative

Negative impacts to socioeconomics are envisaged due to the direct operations of the building, where increase in people that visit the area would increase the ambient noise levels and traffic. Furthermore, indoor and outdoor air quality may decrease. The range of this impact would be at local level as the surrounding area will be affected. Additionally, the training ground will most likely need to be relocated as the increase of traffic into the road will mean that the driving schools will not be able to safely train the cycle/car driving learners. The impact will be long-term and reversible as can be controlled easily with proper mitigation measures. The consequences from this impact are major negative without proper mitigation measures in place. With a likelihood of possible, assuming that proper mitigation measures will be implemented, the significance of this impact is high.

7.5.8 Socio-economic impacts – positive

Positive impacts are envisaged to the socioeconomics due to direct activities of the project to the proponent as the proponent will gain profits from the operation of its office complex as they will be able to efficiently expand their operations. Furthermore, as this office complex is designed with modern architecture, the workers are expected to have a better work environment. The range of this impact would be at Island level with long-term implications. The impact is considered reversible as once the operation of building stops, the impact ceases. The consequences from this impact are catastrophic positive and with a likelihood of certain, the significance of this impact is significant.

7.5.9 Risk of hazards; flooding

Hulhumale’ was developed as an Island that would not flood with the installation of proper drainages and elevation of the entire Island. Furthermore, the flood risk analysis also show that flooding is an uncommon occurrence in this region of the Maldives. However, if a flood does occur it may damage the utilities and parked vehicles in the basement. Which would cause long-term and irreversible impacts. The consequences from this impact are major. However, the likelihood of this impact occurring is unlikely assuming proper mitigation and designs will be followed, the significance of this impact is high.

7.5.10 Risk of hazards; pest out break

Species which could become pests like rats and cockroaches must be properly monitored. The impact is of negative nature as a pest outbreak could have indirect health implications as well in addition to damaging equipment of the office building as rats could eat cables and other plastic accessories. An outbreak also has the potential to impact the entire building depending on the magnitude of the outbreak. The impact is considered long-term as may require sometime to control the rats if an outbreak occurs. The impact can be reversible as chemicals can be used to control. The consequences from this impact are moderate. The likelihood of this impact is unlikely as no organic waste will be in the open for a long duration, hence the significance of this impact is low.

7.5.11 Risk of hazards- storm surge

Hulhumale' is located at a moderate risk zone for local storm surges compared to the rest of Maldives. The impact is of negative nature as a storm surge event may cause elevated sea levels and with strong waves could damage the infrastructures of the office building if flooding reaches up to the project location. While the impact maybe localized to the utilities of the building, any damages to these infrastructures could in turn impact the entire building as discontinuation of utility services would make the building along with its offices difficult to use. As such the impact range was considered to be at Island level. Any damages due to a storm surge event may be long-term and irreversible depending on the gravity of damages. The consequences from such an event are major but with the possible likelihood of occurrence, this impact significance is high.

7.5.12 Risk of hazards- sea level rise

With the accelerated sea level rise due to global warming, the risk of hazards due to an event like storm surge as described in the above section is more probable. While the impacts due to this hazard is evaluated for the proposed project, sea level rise could potentially impact the entire

Island as such the range of this impact is considered at Island level. This hazard has long-term and irreversible environmental implications. The consequences from such an event are major but with the unlikely likelihood of occurrence as Hulhumale' is elevated higher, this impact significance is medium.

7.5.13 Risk of hazards- fire and other accidents

This impact arises due to the direct operations of the office building. Potential accidents include electrocution during servicing of electrical equipment's, chemical spills during servicing of utilities and fire/explosions. All of these hazards are negative in nature as it poses health risk to workers in addition to damages to the infrastructures. The impact is of Island level range, long-term and irreversible. The consequences from this impact are major but the likelihood of occurrence is unlikely as proper mitigation measures will be implemented in the building operations, hence the significance of these hazards is medium.

7.6 Impact Boundary

As shown in Figure 48 primary impact area for the project is the footprint of the proposed office building. The secondary impact area will be areas that could have impact on air quality and noise disturbance during construction and operation.

Figure 48: estimated impact boundary for the proposed project

8. OPTIONS ASSESSMENT

The possible causes of actions, in place of another that would meet the same purpose and need, otherwise known as alternatives, have been well considered in this study as alternatives are essential to a sound decision-making process and central to an effective EIA.

With due consideration to the purpose and need for the proposed project, there are six alternatives identified for this project, details of which are further discussed below:-

8.1 Options

This section describes the alternatives that were considered for the proposed development under this EIA.

8.1.1 Option 1: Maintain status-quo

The no project option means not going ahead with the entire project. This implies that there won't be any damages to the terrestrial environment of the project site and no disturbance to the neighbourhood but it also implies that the many social benefits anticipated from the project will not be available.

One of the main disadvantages faced by citizens living in Hulhumale and Male' will be loss of opportunity for attaining office space. Having this commercial building built as planned will provide a convenient office space for small to medium business operating in Male' and Hulhumale which in turn will directly benefit to the business owner. Due to the high social benefits and the direct benefit to the business envisaged from the proposed project, the "no project" scenario is not advisable for the proposed project.

8.1.2 Option 2: Alternative location

There is no option for an alternative location for this project as the current building location is the property of the proponent.

8.1.3 Option 3: Foundation type

An alternative method of laying foundation maybe an alternative to the project that maybe considered. The alternative method of foundation would be deep piling foundation. However, due to incidents of cracks in neighbouring buildings and vibration and noise-related inconveniences which occurred during the deep piling in the past in Male’ area, deep piling is considered unsuitable for the congested areas. Therefore, the most commonly adopted method of laying foundations in the Maldives which is raft foundation method will be adopted in the construction of proposed project. Raft or mat foundations are often considered in situations where bearing capacity of the soil is poor, the load of the structure is to be distributed over a large area or the structure is constantly subjected to shocks or jerks. Although, since the soil is well-compacted heterogeneous material, it provides a very good base for raft foundations, there would be minimal disruption to adjacent structures. Raft foundations are also more economic when the structure includes a basement.

8.1.4 Option 4: Groundwater recharge from roof catchment

As per the clause 8of the regulation for protection and conservation of groundwater resources (2021 / R-22), excess rainfall from building catchment is to be recharged to the ground in order to improve the overall quality of the island aquifers. Maldives receives relatively high annual rainfall and with a highly conductive soil (MoE, 2020), this would provide a good opportunity to increase the groundwater recharge. According to the guideline published by the Ministry of Environment in 2021, some of the methods for effective groundwater recharge are:

- Soakaways
- Infiltration trenches
- Filter drains
- Filter strips
- Underground recharge wells

The Figure 49 shows the conceptual drawings of the possible recharge structures in saturated and unsaturated plots which is adopted from the Appendix 2 of the regulation for protection and conservation of groundwater resources (2021 / R-22)

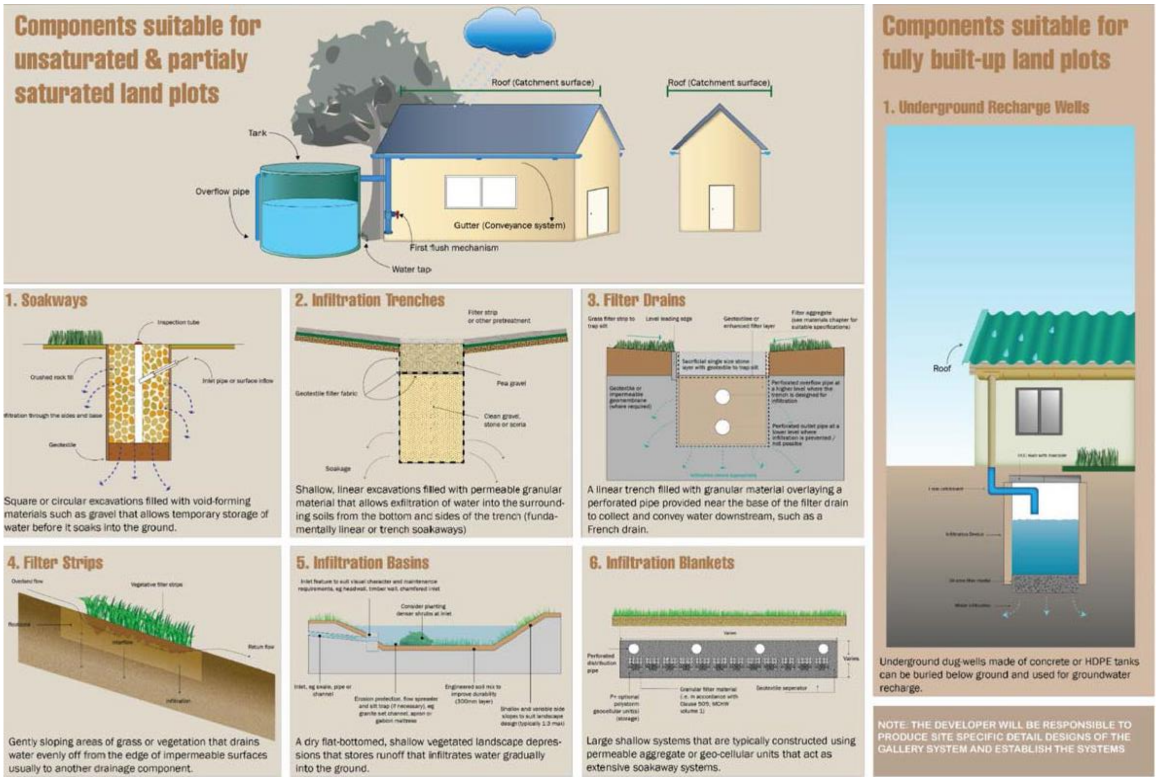


Figure 49: Conceptual drawings of options for recharge (Adopted from regulation 2021/R-22, appendix 2)

As this is a regulatory requirement and an alternative that will have beneficial impact on the groundwater lens, it is preferred to establish an underground recharge well within the plot of the proposed project

8.1.5 Option 5: Incorporation of renewable energy and energy conserving technology

As per the current design, renewable energy has not been considered yet for the project. One method of incorporating renewable energy is through the installation of solar panel under the project. The generated electricity could be offset from the electricity utilised by the building which would be an economic benefit to the proponent. Furthermore, when selecting the lighting and other requirements for the building, it is proposed to choose energy conserving technology over conventional ones.

8.1.6 Option 6: Alternative material

The proposed commercial building as of now has been planned to construct using concrete structure. The alternative to the proposed material is to construct the building with steel structure and sandwich panels. The advantages of constructing the building using steel structure include that it takes less time for construction and design flexibility. While steel offers strength, speed, and design flexibility, it comes with higher costs and maintenance requirements.

8.2 Preferred Alternative

The preferred alternative is to proceed with the project as currently proposed over the alternatives of the no project scenario, no change in location, no change of foundation type, incorporation of groundwater recharge components, incorporation of renewable energy and preference to energy saving technology due to the reasons mentioned in the aforementioned subsections.

9. ENVIRONMENTAL MANAGEMENT

This section describes the environmental and operational management systems and plans for the proposed development including practical mitigation measures for all identified impacts, a risk management plan, measures for sustainable development as well as environmental monitoring programs.

9.1 Proposed Mitigation Measures

The mitigation measures outlined in Table 27 and Table 28 below is proposed with due consideration to their cost effectiveness and feasibility to be implemented. The mitigation measures mainly relate to handling practices, design and quality of the proposed development and appropriate trainings which would ensure that environmental impacts would be minimized as effectively as possible.

It is the responsibility of the implementing agency to adhere to the proposed mitigation measures and bear any costs related to establishing them. If the proponent hires a contractor, then it is the responsibility of the proponent to include these mitigation measures in the project contract.

9.1.1 Construction Phase

The following table describes the preferred mitigation measures for the identified impacts during the construction phase of the proposed project.

Table 35: proposed mitigation measures for the identified impacts during the construction phase of the proposed project

Impact	Mitigation Aspect	Proposed Mitigation Measures	Timing	Required manpower	Expertise	Equipment	Technology	Estimated Cost	Implementing Agency	Performance Indicator
Mobilization impacts- Noise	Reduce noise disturbance from mobilization of heavy vehicles, machinery and materials	Restrict mobilization to daytime except for when foundation and flooring works; in these two cases mobilization can be done at a later hour as advised by HDC	Continuous during construction phase	Project Manager, Drivers	Experienced project manager to plan mobilization activities	Computer	Project management software	The salary of a project manager would vary depending on the proponent, typical salary of a project manager can range from MVR 25,000 to MVR 50,000. The cost of a computer may vary depending on the brand and computing power, typically one could get a basic desktop computer from around USD 300 to USD 600. The price of Microsoft projects perpetual license is for about USD 620.	Proponent	Complains from public for disturbance
		Avoid unnecessary use of machinery			Diligent staff					Machinery in optimal condition
		Ensure shortest mobilization route is chosen			Experienced project manager to plan mobilization activities					Complains from public for disturbance
		Ensure mobilization in one go as much as possible to avoid repeated transfer of materials or vehicles			Experienced project manager to plan mobilization activities					Injuries to hearing among staff
Mobilization impacts- Dust	Minimize release of dust	Ensure shortest vehicle transfer routes are established and construction materials are offloaded inside the project site which is fenced off to avoid movement of dust into the nearby areas	Continuous during construction phase	Project Manager, Drivers	Experienced project manager to plan access routes	Computer	Aerial imagery of the Island with roads	The cost of a computer may vary depending on the brand and computing power, typically one could get a basic desktop computer from around USD 300 to USD 600.	Proponent	Extent of dust released
Mobilization impacts- Oil spills on ground	Minimize likelihood of oil spills occurring during operation of heavy vehicles and machinery. Contain any spills that does occur (if any).	Have emergency oil spill cleanup crew on standby	Continuous during construction phase	Oil spill cleanup crew, Operator	Vehicle operator that is able to detect leakages	Spill cleanup materials	Spill cleanup technology	The cost of spill cleanup operations can vary widely depending on the size, location of spill, type of substance spilled, etc. Small spills on land/water can cost from few thousand o tens of thousands of dollars.	Proponent	Water quality assessments to detect contamination
Mobilization impacts- workforce; covid episode, negative social impacts, illegal labor	minimize likelihood of a covid episode due to the mobilization of workforce, avoid social negative impacts and	Screening as per HPA guidelines	Prior to mobilization	HR staff	HR staff that can read PCR tests	PCR test kit	PCR testing at an HPA approved facility	The cost of PCR test may vary depending on the institution from which it is done, typical ranges are USD 30 to USD 100 per test	Proponent	Complains from public for disturbance
		Illegal or undocumented labors shall not be allowed	Prior to mobilization	HR staff	HR staff that is aware of immigration policies	Office	Office administration	The salary for an HR staff may vary depending on the proponent, typically a mid-level HR staff salary is from MVR 12,000 to MVR 18,000 per month		Verified immigration documents

	prevent illegal labor	Laborers shall be supervised by the site supervisor to avoid any socially or culturally or legally unacceptable behavior	Prior to mobilization	Supervisor, HR staff	Capable supervisor	No additional equipment required	No additional technology required	The salary of a site supervisor can vary depending on the proponent, typical salary is from MVR 15,000 to MVR 25,000 per month		Number of Complains
		Laborers shall be made aware of the sociocultural and legally unacceptable behavior	Prior to mobilization	HR staff	HR staff that can conduct awareness sessions and that is aware of Maldivian sociocultural norms and legal setting	Projector, Computer	Presentation	The salary of a site supervisor can vary depending on the proponent, typical salary is from MVR 15,000 to MVR 25,000 per month		Behavior of workers
Generation of site clearance, demolition and constructional waste	Prevent littering and pollution of surrounding environment	Ensure efficient planning of project activities to ensure minimal waste generation and management of any waste generated on-site by segregation, reuse, recycling as much as possible	Prior to mobilization	Project Manager, Drivers	Experienced project manager	Waste collection and transfer equipment	Waste reuse or recycling	The salary of a project manager would vary depending on the proponent, typical salary of a project manager can range from MVR 25,000 to MVR 50,000. The prices of waste collection and transfer equipment's are highly variable depending on the type, brand, specifications and size. A rear-loading garbage truck price is typically between USD 100,000 to USD 300,000. Compactors and balers are between USD 1000 for small portable units to 10k to 1000k USD for larger units. A 10 cubic yard skip container can cost between USD 1000 to USD 2000.	Proponent	No waste in the open
		Following existing waste management legislations	Continuous during construction phase							
		Ensure efficient waste transfers to minimize accidental disposal/spillage	Continuous during construction phase							
		Designate waste collection/storage areas to minimize littering	Continuous during construction phase							
		Solid waste, oil and hazardous materials needs to be carefully handled and transported in sealed containers	Continuous during construction phase							
Vegetation clearance	Reduce the number of trees removed and minimize number of trees completely removed from the Island	Removed vegetation should be disposed as green waste and excavated earth disposed off at a location approved by HDC or to Thilafushi	Prior to construction	Excavator operator, Lorry driver	Driver that can drive	Excavator, Lorry, Waste transfer vessel	Digging and uprooting trees	Price of excavators depend on brand, size and specifications. A mini excavator that is suitable for landscaping can be for USD 20,000 to USD 90,000. A pickup trucks price maybe between USD 20,000 to USD 50,000. A 70 feet waste transfer vessel can be between USD 500,000 to USD 2 million depending on the specifications.	Proponent	No waste in the open
		Replanting any trees that can be replanted	Continuous during construction phase	Excavator operator, Lorry driver	Operator that can uproot and plant trees	Excavator, Lorry, supports	Planting trees	Supports for trees can be either wooden or metal stakes. The prices will vary depending on the size. The prices maybe between USD 1 to USD 10 per stake.	Proponent	Number of trees replanted

		All vehicles and machinery must be restricted to the proposed access tracks and sites	Continuous during construction phase	Project Manager, Drivers	Experienced project manager to plan access routes	Computer	Aerial imagery of the Island	The cost of a computer may vary depending on the brand and computing power, typically one could get a basic desktop computer from around USD 300 to USD 600.	Proponent	Percentage of untouched vegetation on the Island
		Only removing plants on the footprint of development.	Prior to construction	surveyor	Surveyor that can establish boundaries of development footprint	GPS	RTK GPS	Rover RTK GPS prices maybe between USD 5000 to USD 20,000 depending on the brand and specifications. The salary of a surveyor may vary depending on the proponent, typical salary maybe between MVR 15,000 to MVR 35,000.	Proponent	Extent of vegetation cleared beyond development footprints
Vibration impacts	Minimize damage to buildings	Ensure the access routes for vehicles are not too close to existing buildings	Prior to construction	Project Manager, Drivers	Experienced project manager to plan access routes and delimiting boundaries of infrastructures	Computer	Aerial imagery of the Island	The cost of a computer may vary depending on the brand and computing power, typically one could get a basic desktop computer from around USD 300 to USD 600.	Proponent	Complains from public for disturbance
		Estimating vibration levels that would be generated, discussing with adjacent building managers if the thresholds maybe exceeded and close monitoring during sheet piling works to ensure thresholds are not exceeded	Prior and during construction	Surveyor	Experienced surveyor that can analysis and interpret vibration data	Computer	Accelerometers or vibration meters	The cost of renting or purchasing vibration monitoring equipment such as accelerometers, data loggers, and monitoring software can range from a few hundred to several thousand dollars, depending on the sophistication and accuracy of the equipment.	Proponent	Vibration thresholds
Air Quality-GHGs	Minimize release of GHGs	Use of fuel low sulfur content	Continuous during construction phase	Procurement Manager	Procurement of low sulfur content fuel.	Low sulfur fuel	Equipment and machinery should able to handle low sulfur fuel	The price difference between low sulfur content fuel and normal fuel can vary depending on the region. As of May 2023 the global average price for low sulfur fuel is around USD 1.1 to USD 1.5 per liter and the global average price for gasoline is around USD 1.2 to USD 1.6 per liter.	Proponent	Concentration of air pollutants in project area
		Avoid unnecessary use of machinery		Project Manager, Supervisor	Efficient planning of project activities. Supervising.	Computer	Project management software	The salary of a project manager would vary depending on the proponent, typical salary of a project manager can range from MVR 25,000 to MVR 50,000. The cost of a computer may vary depending on the brand and computing power, typically one could get a basic desktop computer from around USD 300 to USD 600. The price of microsoft projects perpetual license is for about USD 620.		Hours of operation

		Daily maintenance of vehicles and machinery		Mechanical Engineer	Capable of maintenance of vehicles and machinery	Spares and tools	Detection of faults and rectifying them	The approximate average salary of a mechanical engineer is MVR 290,000 per year. The cost of spares and tools required for the maintenance of machinery/equipment's is not known at this stage and should be included in the project value. The costs maybe obtained by consulting with the manufacturer or qualified service provider.		Vehicles in optimal condition
Air Quality- Dust	Minimize release of dust	Cover the waste on the transfer vehicles and ensure shorted transfer routes are taken	Continuous during construction phase	Laborer, Driver	Experienced Project Manager	Covering cloth, Waste Transfer Vehicles	No additional technology required	A rear-loading garbage truck price is typically between USD 100,000 to USD 300,000.	Proponent	Level of dust at construction sites
		spraying the ground before excavation works with water		Laborer	Laborer who is able to operate water horse	Water horse, water pump, water supply, Electricity	RO	Cost of RO plants may vary depending on brand, size and specifications. Typically the price of a 10T RO plant is from USD 5000 to USD 50,000.		
		Ensuring that the trenches are backfilled as soon as possible by finishing works efficiently		Project Manager, Laborers	Experienced Project Manager	Excavator	No additional technology required	A mini excavator that is suitable for landscaping can be for USD 20,000 to USD 90,000.		
Noise Pollution	Minimize noise generated and duration of noise generated. Limit the noise generation hours to times that will cause minimum disturbance	Usage of heavy machinery and equipment should be restricted to smaller areas (eg take the shortest route possible when accessing to work site)	Continuous during construction phase	Project Manager	Experienced project manager	Computer	Project management software	The salary of a project manager would vary depending on the proponent, typical salary of a project manager can range from MVR 25,000 to MVR 50,000. The cost of a computer may vary depending on the brand and computing power, typically one could get a basic desktop computer from around USD 300 to USD 600. The price of Microsoft projects perpetual license is for about USD 620.	Proponent	Measurement of noise levels around construction site
		Park the heavy machinery within the work site (if possible) to avoid unnecessary transfer								
		Ensure project is completed as soon as possible								
		Restrict working hours to daytime only								
Groundwater quality- oil and chemical spills	Minimize risk of oil and chemical spills	Establish Oil/chemical handling procedures and ensure no spills occur	Continuous during construction phase	Environmental safeguard officer and oil spill cleanup crew	Environmental officer	Oil spill cleanup kits and chemical handling procedures	Spill cleanup technology	The cost of spill cleanup operations can vary widely depending on the size, location of spill, type of substance spilled, etc. Small spills on land/water can cost from few thousand o tens of thousands of dollars. Medium spills on coastal waters can cost from tens of thousands to several hundred thousand dollars. Typical salary of an environmental safeguard officer is between MVR 15,000 to MVR 30,000 per month.	Proponent	Spills and remediation
		Workers should be well trained about proper use of machinery and equipment relevant to them								
		Have emergency oil spill cleanup crew on standby during construction								
		All machinery and equipment should be well maintained to avoid accidental spillage								

Groundwater quality-salinization	Minimize groundwater salinization from dewatering	Water extracted from dewatering should be recharged back to the ground to a designated area after checking the water quality as advised by HDC and EPA	Continuous during construction phase	Laborers, Environmental safeguard officer	Environmental officer	Pump, water horse	Water quality testing	Typical salary of an environmental safeguard officer is between MVR 15,000 to MVR 30,000 per month. Water testing costs are depended on the parameters being tested. The costs can be obtained from MWSC laboratory.	Proponent	Groundwater salinity
		Efficient planning of foundation to ensure least number of dewatering days	Prior to dewatering	Project Manager, Laborers	Experienced project manager	Computer	Project management software	The salary of a project manager would vary depending on the proponent, typical salary of a project manager can range from MVR 25,000 to MVR 50,000. The cost of a computer may vary depending on the brand and computing power, typically one could get a basic desktop computer from around USD 300 to USD 600. The price of Microsoft projects perpetual license is for about USD 620.	Proponent	Number of dewatering days
Impacts on marine environment	Control the spread of high turbid water during discharge of dewatering water into lagoon	Use silt screens and settling tanks prior to discharge to minimize the turbidity of the discharged water	Continuous during construction phase	Environmental safeguard officer, laborers	Environmental officer	silt screen	sediment control	Depending on the size, material and features of the silt screen the prices may vary. A basic silt screen made of polypropylene fabric maybe available for USD 0.50 per square foot, while reinforced PVC material screen may cost USD 2 to USD 3 per square foot.	Proponent	Extent of turbid water plume created
Impacts on terrestrial environment-soil and ground	Minimize area of ground compaction and extent of damages to soil profile	Ensure shortest accessibility to construction sites	Prior to construction	Experienced Project Manager	Project management skills	Computer	Project management software	The salary of a project manager would vary depending on the proponent, typical salary of a project manager can range from MVR 25,000 to MVR 50,000. The cost of a computer may vary depending on the brand and computing power, typically one could get a basic desktop computer from around USD 300 to USD 600. The price of Microsoft projects perpetual license is for about USD 620.	Proponent	Extent of ground compaction and soil profile compromised
		Plan for bulk transport of construction materials to ensure trips are more efficient and fewer trips are needed	Continuous during construction phase							
		Ensure number of waste transfer are low by making sure that vehicles are full	Continuous during construction							
Risk of accidents and pollution on workers and road users	Minimize risk of accidents to non-relevant personnel	Construction site fenced off	Prior to construction	Laborers	No additional expertise required	Aluminium sheets, metal poles	No additional technology required	The cost of a fence may vary highly depending on the materials used. An Aluminium fence may cost from USD 20 to USD 50 per linear foot.	Proponent	Unwanted entries to project site
		Unauthorized entry of unwanted people must be restricted	Prior to construction	Security guard	Experience in security management	Camera and other security management equipment	Camera system	The cost of a camera system may vary depending on the brand and specifications. Basic entry level camera system with 2-3 cameras may cost from USD 1000 to USD 300.		
		Sign boards at construction site	Prior to construction	Laborers	No additional expertise required	Sign boards	No additional technology required	Cost of sign boards will vary depending on size and material used. In general, a small sign board made from materials like PVC, metal or Aluminium will cost from USD 10 to USD 50.		

	Minimize risk of accidents to road users	Allocate a new training ground for the driving schools	Prior to construction	Not applicable	Not applicable	Not applicable	Not applicable	As this mitigation measures is something which needs to be done by the Ministry of Transport and Civil Aviation, it is not possible to estimate a cost for allocating a new training ground.	Ministry of Transport and Civil Aviation	Alternative training ground allocated
	Minimize risk of accidents to workers	All working staff must be well trained and advised on the importance of occupational health and safety	Prior to construction	Safety Officer	Environmental and safety officer	Safety, first aid kits and PPE equipment's	Safety and spill cleanup technology	The cost of PPE may vary depending on the type of equipment needed. Some approximate costs for common PPE are; Disposable masks: USD 0.20 to USD 1 per mask N95 masks: USD 2 to USD 5 per mask Face shields: USD 5 to USD 20 per shield Disposable gloves: USD 0.05 to USD 0.50 per pair Reusable gloves: USD 5 to USD 20 per pair Disposable gowns: USD 5 to USD 15 per gown Reusable gowns: USD 30 to USD 100 per gown. These prices may vary highly depending on the brand, quality and quantity purchased.	Proponent	Accidents and injuries to workers
		Ensure all workers are provided with PPE	Continuous during construction phase	Environmental Safeguard Officer						
		In case of oil/chemical spills, clean up kits shall be available at all times		Environmental Safeguard Officer						
		In case of accidents, workers should be taken to the nearest hospital immediately		Environmental Safeguard Officer						
		Firefighting equipment must be made available at work site		Safety Officer						
		Trenched and excavated material should be stockpiled at a designated area		Environmental Safeguard Officer						
		Safety lights at night to avoid people from falling into open trenches		Environmental Safeguard Officer						
		Shoring for adjacent buildings during excavation if there is any risk of collapse	Prior to construction	Environmental Safeguard Officer						
Impacts on landscape integrity and scenery	Minimize aesthetically displeasing view for any people that can see project area	Project area shall be fenced off and informing of the project construction works	Prior to construction	Laborers	No additional expertise required	Aluminium sheets, metal poles	No additional technology required	The cost of a fence may vary highly depending on the materials used. An Aluminium fence may cost from USD 20 to USD 50 per linear foot.	Proponent	Number of Complains

Socio-economic impacts-Negative	Minimize hindrances to traffic flow	During foundation and flooring works, mobilization can be done at a later hour as advised by HDC. In case roads need to be closed, permits should be obtained from relevant authority and road block signs should be enacted	Prior to construction	Project Manager	Experienced project manager to plan access routes and hours	No additional equipment required	No additional technology required	The salary of a project manager would vary depending on the proponent, typical salary of a project manager can range from MVR 25,000 to MVR 50,000.	Proponent/HDC	Number of complains from public
	Minimize risk of mosquito growth	Implement proper waste management at project site such that no containers are left that can retain water	Continuous during construction phase	Project Manager, Drivers	Experienced project manager to plan efficient schedule of works	Waste collection and transfer equipment	No additional technology required	The salary of a project manager would vary depending on the proponent, typical salary of a project manager can range from MVR 25,000 to MVR 50,000. The cost of a computer may vary depending on the brand and computing power, typically one could get a basic desktop computer from around USD 300 to USD 600. The price of Microsoft projects perpetual license is for about USD 620.	Proponent	Number of mosquitoes
		Ensure foundation laying works are completed in the shortest duration				Computer	Project management software		Proponent	
	Minimize damages to roads	Ensure shortest transfer routes are taken and that the drivers are well trained				No additional equipment required	No additional technology required		Proponent/HDC	Damages to roads
Socio-economic impacts-Positive	Increase the chance of local workers/ contractors being hired	Work with locals and local businesses so that the needs of the project can be addressed by them	Prior to construction	Project manager, HR/PR staff	People skills	Computer	Ads, presentations	The salary for an HR staff may vary depending on the proponent, typically a mid-level HR staff salary is from MVR 12,000 to MVR 18,000 per month	Proponent	Number of local workers hired
		Inform the local businesses about the construction works and its schedule	Prior to construction	Project manager, HR/PR staff	People skills	Computer	Ads, presentations			
		Give priority to local contractors	Prior to construction	HR staff	No additional expertise required	No additional equipment required	No additional technology required			

9.1.2 Operational Phase

The following table describes the preferred mitigation measures for the identified impacts during the operational phase of the proposed project.

Table 36: proposed mitigation measures for the identified impacts during the operation phase of the proposed project

Impact	Mitigation Aspect	Proposed Mitigation Measures	Timing	Required manpower	Expertise	Equipment	Technology	Estimated Cost	Implementing Agency	Performance Indicator
Air Quality-GHGs	Reduce volume of GHGs released	Incorporate renewable energy	Prior to operations	Technical staff	Technicians	Depends on the type of chosen renewable energy technology (most common is solar in Maldives)	Renewable energy technology	The price of solar panel can vary depending on the size, efficiency and the manufacturer. A general estimate is USD 100 to USD 500 or more for a single solar panel. However, the cost per watt is considered to be a more useful metric for comparing the cost of solar panels, which can range from USD 0.50 to USD 1.50 or more per watt, depending on the factors mentioned above. A typical salary for an operations manager would be between MVR 15,000 to MVR 35,000 per month based on their qualifications and responsibilities.	Proponent	Percentage contribution of renewable energy
Noise Pollution	Minimize noise generated	Implementing guidelines for customers and visitors where they will be required to maintain certain level of noise	Continuous during operations	Operations Manager, Security guards	Management skills	Computer, leaflets, notices	Social management skills			Noise level
		Implementing guidelines for workers where they are required to maintain certain level of noise								
Ground and marine water quality-negative	Minimize risk of leaks within the utility systems	Ensure that leak detection systems are working	Continuous during operations	Technical staff	Water and sewer technicians	No additional equipment required	Leak detection	Typical salary for technical staff maybe between MVR 10,000 to MVR 20,000. The cost of spares and specialized tools are highly variable and details are not available at this stage to provide an estimate as such these costs shall be included within the operational costs.	Proponent	Logs
		Routine maintenance and monitoring of the utility system	Continuous during operations	Technical staff	Water and sewer technicians	O&M equipment's	No additional technology required			Logs
Groundwater quality-positive	Encourage protection and preservation of groundwater resources	Implement IWRM principles	At the design stage	Design consultant	Engineering	Computer	IWRM concepts	The salary for a design consultant may vary depending on their experience, qualification and proponent. Typical salaries maybe from MVR 20,000 to MVR 35,000 per month	Proponent	water quality
Impacts from waste	Ensure waste is managed properly	Ensure that the waste collection systems are functioning properly	Continuous during operations	Operations Manager	Management skills	Computer	Operations management software	A typical salary for a operations manager would be between MVR 15,000 to MVR 35,000 per month based on their qualifications and responsibilities.	Proponent/WAMCO	Logs
		Ensure that organic waste and plastic/paper waste is taken from the garbage collection area routinely by WAMCO	Continuous during operations							
Impacts on landscape integrity and scenery	Ensure that the infrastructures are operating at optimal conditions	Routine maintenance such that the outlook of the new infrastructures are at optimal condition	Continuous during operations	Technical staff	Technicians in relevant field	Spares, specialized tools and equipment's required for maintenance work	No additional technology required	The salary of technical staff may vary depending on the field. A general estimate is MVR 15,000 to MVR 30,000 per month.	Proponent	Outlook of infrastructures

Socio-economic impacts - negative	Reduce impacts to indoor and outdoor air quality	Ensure adequate ventilation systems are established	Project planning stage	Civil Engineer	Engineering	Computer	Designing software	A typical salary of a civil engineer maybe between MVR 10,000 to MVR 30,000 per month.	Proponent	Measure of indoor and outdoor air quality
	Reduce impacts to traffic flow	Ensure adequate parking and access routes are established	Project planning stage	Project Manager, Urban planner	Urban development skills	Computer	Urban resource use planning	A typical salary for a urban resource use planner maybe between MVR 20,000 to MVR 35,000 per month.	Proponent, HDC/Urbanco	Available parking space and level hindrance to traffic flow
	Minimize risk of accidents to road users	Allocate a new training ground for the driving schools	Prior to construction	Not applicable	Not applicable	Not applicable	Not applicable	As this mitigation measures is something which needs to be done by the Ministry of Transport and Civil Aviation, it is not possible to estimate a cost for allocating a new training ground.	Ministry of Transport and Civil Aviation	Alternative training ground allocated
Socio-economic impacts - positive	Ensure that the infrastructures and facilities are operating at optimal conditions	Routine maintenance such that the infrastructures and facilities are operational at optimal condition	Continuous during operations	Technical staff	Technicians in relevant field	Spares, specialized tools and equipment's required for maintenance work	No additional technology required	A typical salary for a natural resource use planner maybe between MVR 20,000 to MVR 35,000 per month.	Proponent	Condition of infrastructures and facilities
		All machinery and equipment's shall conform to international minimum standards and utilities must confirm to the respective service provider standards	Project planning stage	Procurement consultant	Knowledge in relevant field of water/sewer/waste/coastal	Computer	No additional technology required	A typical salary for a procurement consultant is roughly MVR 370,000 per year.	Proponent	
		Ensure that the utilities is designed as per URA and the service providers standards	Project planning stage	Design consultant	Consultant in relevant field of water/sewer/waste/electrical	Computer	Designing software	A typical salary for a design consultant maybe between MVR 20,000 to MVR 35,000 per month.	Proponent, URA	
		Ensure that in the design of the building, there is adequate access for vehicles to move	Project planning stage	Design consultant	Consultant in relevant field of urban planning	Computer	Designing software	A typical salary for a design consultant maybe between MVR 20,000 to MVR 35,000 per month.	Proponent	Accidents
		Have detailed operation and maintenance manuals for the utilities, air condition systems and lifts. Furthermore, ensure they are maintained routinely	Continuous during operations	Engineer, operations manager	Knowledge in relevant utility field	Obtain manuals from manufacturer	No additional technology required	A typical salary for an engineer maybe between MVR 20,000 to MVR 35,000 per month.	Proponent	O&M manuals, Logs
		Have a detailed health and safety, emergency response plans made to the building	Prior to operations	Health and Safety officer	Knowledge in emergency response	Computer	No additional technology required	A typical salary for a design consultant maybe between MVR 20,000 to MVR 35,000 per month.	Proponent	Health and safety manuals, Emergency Response plans

Risk of hazards; pest out break	Minimize risk of pest outbreaks	Ensure that organic waste is routinely transferred out and littering prevented	Continuous during operations	Workers	No additional expertise required	Pesticides	No additional technology required	A typical salary for non-technical staff maybe between MVR 10,000 to MVR 15,000 per month.	Proponent	Prevalence of pests like rats and cockroaches
Risk of hazards- storm surge Risk of hazards; flooding Risk of hazards- sea level rise	Minimize risk of flooding and minimize damages if a flood does occur	Ensure that electrical panel boards are elevated and install storm water pumps. Furthermore, ensure that the garages are waterproof and ground floor level is elevated	Project planning stage	Design consultant	Consultant in relevant field of water/sewer/waste/electrical	Computer	Designing software	A typical salary for a design consultant maybe between MVR 20,000 to MVR 35,000 per month.	Proponent	Extent of damages due to flooding and number of flood events
Risk of hazards- fire and other accidents	Minimize risk of fire and other accidents	Ensure all firefighting and lightning protection equipment's/systems are installed in all facilities and operational for example smoke detectors, fire extinguishers Ensure personal protective equipment is made available to all staff and they use them properly Establish emergency preparedness response plans, health and safety manuals Ensure emergency procedures, O&Ms are readily available Ensure staff are adequately trained for emergencies, health and safety procedures, oil/chemical handling All personnel must strictly abide COVID 19 guidelines set by HPA – social distancing, wearing masks and regular hand washing or sanitization	Continuous during operations	Environmental safeguards officer	Health and safety, environmental science	PPE, Manuals	No additional technology required	Typical salary of an environmental safeguard officer is between MVR 15,000 to MVR 30,000 per month. Cost of PPE equipment's and manuals shall be included within operational costs.	Proponent	Health and safety manuals, Emergency Response plans, Chemical handling procedures, logs

9.2 Justification for the selected mitigation measures

The abovementioned mitigation measures for the construction and operational phase of the project were selected as those mitigation measures requires the least additional manpower, expertise, equipment, technology, and costs. Additionally, because the mitigation measures fulfil the initial principle of avoidance followed by minimisation in the cases where the impact could not be avoided and lastly compensation in those cases where avoidance and minimisation were not possible.

9.3 Effectiveness of mitigation measures

The effectiveness of proposed mitigation measures in the Maldivian setting is very difficult to ascertain due to the lack of monitoring data that is available. As such the full effectiveness of the proposed mitigation measures will be determined by the follow-up surveillance of the performance indicators that is highlighted for each mitigation measure and by monitoring of the parameters that is highlighted in section 9.7.1 under the Table 37.

9.4 Risk Management and Incident Response

Risk management procedures in this project are strengthened by adopting a more systematic risk management approach to safety. This is achieved by identifying all foreseeable impacts (as stated in section 7 of this report), assessing the risk of each impact and providing a means to control the impacts (mitigation measures).

9.5 Sustainable Development Management Policy

The design and implementation of the project ensures that the proposed project is sustainable. As such, measures adopted to promote sustainable development include some guiding principles as well as components incorporated into the project design. These include: -

- Ensure environmental compliance with the Governmental policies and regulations;

- Protect people, property and the local environment;
- Reduce ecological impacts of the services provided; and
- Increase customer satisfaction.

9.6 Managing Uncertainties in Impact Prediction

Uncertainty is an integral part of an EIA as EIA preparation involves prediction. The two types of uncertainties associated with the EIA process include those associated with the process and those associated with predictions. With the former, the question is whether the most important impacts have been identified and whether the recommendations will be acted upon. In order to reduce such uncertainties, a wide range of stakeholders have been consulted (Section 6) in the EIA process in order to minimize the risk of missing important impacts. For the latter, the uncertainty is in the accuracy of the findings. This can be improved by research and quality of the survey, and by follow-up monitoring.

It should also be noted that even though EIA cannot give a precise picture of the future, it enables uncertainties to be better managed and is an aid to better decision making.

9.7 Environmental Monitoring

Monitoring is an essential part of the EIA and project implementation and serves 3 purposes: -

- Ensures that the proposed mitigation measures are being implemented;
- Evaluates whether the proposed mitigation measures are working effectively; and
- Validates the accuracy of models or projections that were used during impact assessment process.

The purpose of monitoring is to compare the predicted impacts with that of the actual impacts, particularly if the impacts are either very important or the scale of the impact cannot be predicted accurately. The results of monitoring can then be used to manage the environment, particularly to highlight problems early on so an action can be taken.

Monitoring should not be seen as an open-ended commitment to data collection and to minimize the expenses associated with collecting unnecessary data, the data collection should cease when the need for monitoring ceases. Therefore, it is important that a proper monitoring schedule is adhered to. Conversely, monitoring may also indicate the need for more intensive study. The information obtained from monitoring can be extremely useful for future EIAs in making them more accurate as well as more effective.

9.7.1 Monitoring Parameters

The baseline data collection for the proposed development was undertaken in February 2024. Baseline surveys were conducted to determine the reference range, so that comparisons can be made during the monitoring to determine the change.

All monitoring activities must be carried out under supervision of a registered EIA consultant. Details of the monitoring program are given in Table 37 below.

It is the responsibility of the implementing agency to adhere to the monitoring program and bear any costs related to reporting them.

Table 37. Environmental monitoring plan proposed for the proposed development

Parameter	Locations	Method	Indicators	Frequency	Cost / MRF	Staff requirement
CONSTRUCTION PHASE						
Ground water	Construction site	Water quality test	pH, Conductivity	Every 3 months during construction	2000	1 surveyor
Air quality	Construction site	Air quality measurement	Compare with baseline	Every 3 months during construction	1000	1 surveyor
Traffic flow	Construction site	Traffic Count	Compare with baseline	Every 3 months during construction	500	2 surveyors
Waste	Construction site	Visual inspection	Improper management of waste	Every 3 months during construction	200	1 surveyor

Accidents	Project site	Workplace accidents	Number of incidents	Every 3 months during construction	1000	1 surveyor
Noise	Project site	Decibel meter or any other equipment that can measure sound levels	Compare with baseline	Every 3 months during construction	500	1 surveyor
OPERATIONAL PHASE						
Air quality	Indoor and outdoor of office complex	Air quality measurement	Compare with baseline	Every 3 months after construction for 1 year and annually for 5 years	1500	1 surveyor
Noise	Project site	Decibel meter or any other equipment that can measure sound levels	Compare with baseline	Every 3 months after construction for 1 year and annually for 5 years	500	1 surveyor
Ground water	Project site	Water quality test	pH, Conductivity	Every 3 months after construction for 1 year and annually for 5 years	2000	1 surveyor
Waste	Waste collection area	Visual	Odour and littering	Every 3 months after construction for 1 year and annually for 5 years	200	1 surveyor
Traffic flow	Project site	Traffic Count	Compare with baseline	Every 3 months after construction for 1 year and annually for 5 years	500	2 surveyors

9.7.2 Environmental Monitoring Report Submission Schedule

Monitoring reports must be submitted to the EPA as specified under the monitoring schedule below: -

Table 38. Monitoring schedule recommended for the proposed development assuming that the project commences in April 2024 and completes on March 2027

Description	**Date**
EIA Decision statement issued	April 2024
Project commencement	April 2024
Monitoring report during construction- 1	May 2024
Monitoring report during construction- 2	August 2024
Monitoring report during construction- 3	November 2024
Monitoring report during construction- 4	February 2025
Monitoring report during construction- 5	May 2025
Monitoring report during construction- 6	August 2025
Monitoring report during construction- 7	November 2025
Monitoring report during construction- 8	February 2026
Monitoring report during construction- 9	May 2026
Monitoring report during construction- 10	August 2026
Monitoring report during construction- 11	November 2026
Monitoring report during construction- 12	February 2027
Monitoring report during operation- 1	April 2027
Monitoring report during operation- 2	July 2027
Monitoring report during operation- 3	October 2027
Monitoring report during operation- 4	January 2028
Monitoring report during operation- 5	April 2028
Monitoring report during operation- 6	July 2028
Monitoring report during operation- 7	October 2028
Monitoring report during operation- 8	October 2029
Monitoring report during operation- 9	October 2030
Monitoring report during operation- 10	October 2031
Monitoring report during operation- 11	October 2032
Monitoring report during operation- 12	October 2033

9.7.3 Environmental Monitoring Report Format

Following is the environmental monitoring report format expected for this project. The report will include the details of the methods used to collect data, sampling sites, sampling frequency, results and analysis. All data collected in the monitoring period shall be presented in the monitoring report without bias and data shall be compared with the baseline values presented in this EIA report. For the preparation of this monitoring report a surveyor and an environmental consultant will be required.

Introduction
    Purpose of the monitoring report
    Introduction of consultant and proponent
Methodology
    Describe the methods used to collect data
    Sampling sites
    Geographic coordinates
Results
    Present results for the monitoring period
    Comparison with baseline
Conclusion
    Specify if environmental thresholds are being exceeded
    Propose any additional mitigation measures

10. JUSTIFICATION AND CONCLUSION

The purpose of this EIA is to critically analyse and assess the potential environmental impacts associated with the proposed development of a 10-storey office building and analyses the solutions and preferred alternatives as well as mitigation measures to minimize any negative impacts whilst trying to derive the maximum positive impacts from the project.

The centralization of capital city of Maldives, Male' over the past years has led to the immigration of locals from outer Atolls to Male', where the basic necessities are inefficient. As a result, Male' is now one of the most congested cities in the world. In order to provide a solution for this, Hulhumale' reclamation project was initiated in 1997, the official inauguration of the city occurred in 2004. Reclamation of 188 ha of land of Hulhumale' phase 1 was completed on 2002. The city has become home to some major commercial developments. Hulhumale' phase 1 was developed with an open space index of 2.50, to ensure a healthy lifestyle. Including parks, green strips and open sports areas, Hulhumale' provides a total of 50,000 sqft of open space areas.

One of the key objectives of hulhumale development is to release pressure in Male and to build a strong commercial base. The advantages of Hulhumale over Male City include its location close to international airport connected by land, availability of land and well-planned developments etc. Also, Hulhumale is being developed in a sustainable way, which means that it is expected to have a lower environmental impact than Male city. As a result of these factors, Hulhumale is increasingly being seen as the Maldives's premier commercial hub. The government is committed to developing Hulhumale into a world-class business destination, and a number of major companies have already invested in the city.

The Proponent of the proposed project has acquired the LOT 11769 in Hulhumale' and intends to construct 10-storey commercial building on the land which will be used to run the office operations of the proponent and for commercial purposes in the form of lease agreements

The major regulatory requirements for the project involve obtaining the EIA decision statement to go ahead with the project as per the EIA regulation, following with the legislations pertaining to building works, waste management and other utility service provision. In order to assess the existing environment of the project site, various aspects were studied under the EIA.

Some of them are, air quality, noise, socioeconomic environment, traffic and water quality. Additionally, this study also involved identification of alternative options in place of the proposed development. The considered options were no project scenario, moving project location and alternative types of foundation renewable energy integration and groundwater recharging option from excess rainfall.

Air and noise pollution arising specially from vibrations, operation of heavy machinery as well as disturbances on the traffic flow due to road blocks are the most significant negative impact which would arise during the construction phase of the project. Additionally, during the operational phase, it is anticipated that there will be increase in traffic flow in the area while also improvement on landscape and scenery of the location. Major mitigation measures proposed in the construction phase include measures to take dust suppression actions such as spraying water on ground, ensuring shortest vehicle route in mobilization, vehicles are maintained properly, avoiding unnecessary use of vehicles, planning road closure in such a way that it wouldn't over burden the traffic, following oil and chemical handing procedures, having emergency spill clean-up crew at site and following best practices in waste management at all phases of the project.

The socioeconomic benefits during the operations far outweigh the negative impacts. It is expected that the proposed development will provide convenient opportunities for shoppers in Hulhumale' which will directly benefit for the proponent and the communities living in the area.

Therefore, it is recommended to proceed with the construction of 10-storey office building as proposed by taking necessary mitigation measures prescribed in the report.

11. ACKNOWLEDGEMENTS

Consultants would like to extend sincere gratitude to everyone who have contributed to this report. Thanks are due to the stakeholders who kindly contributed their expertise and fair judgement regarding this project. Representatives of proponent are highly appreciated for their generosity in providing any requested information for the compilation of this EIA report.

12. APPENDICES

APPENDIX A. REFERENCES

Ali, M. (2023). *EIA for the Proposed Construction of a Warehouse at Lot 10633, Hulhumale', Kaafu Atoll.*

AS/NZS ISO 31000 : 2009 Risk management - Principles and guidelines. (2009). Standards Australia / Standards New Zealand.

Belopsky, A. V., & Droxler, A. W. (2004). Geologic Setting of the Maldives. In *Seismic Expressions and Interpretation of Carbonate Sequences: The Maldives Platform, Equatorial Indian Ocean* (Vol. 49). American Association of Petroleum Geologists. doi:https://doi.org/10.1306/St49974

Budhavant, K., Andersson, A., Bosch, C., Krusa, M., Murthaza, A., Zahid, & Gustafsson, O. (2015). Apportioned contributions of PM 2.5 fine aerosol particles over the Maldives (northern Indian Ocean) from local sources vs long-range transport. *Science of The Total Environment, 536*, 72-78. doi:https://doi.org/10.1016/j.scitotenv.2015.07.059

Carbon monoxide poisoning. (2022, July 1). Retrieved December 6, 2022, from NHS: https://www.nhs.uk/conditions/carbon-monoxide-poisoning/

Chen, D. (2022, July 26). *What is TVOC and When is it Safe?* Retrieved December 5, 2022, from 1311 Jackson Ave Dental: https://www.jacksonavedental.com/post/tvoc-levels

Colombo, A., Bettinetti, R., Strona, G., Cambria, F., Fanelli, R., Zubair, Z., & Galli, P. (2014). Maldives: An archipelago that burns. A first survey of PCDD/Fs and DL-PCBs from human activities. *Science of The Total Environment, 497–498*, 499-507. doi:https://doi.org/10.1016/j.scitotenv.2014.08.013

(2006). *Developing a Disaster Risk Profile for Maldives, Volume 1: Main report.* Male': United Nations Development Program Maldives .

Earthhow. (2021). *Indo-Australian Plate: Tectonic Boundaries and Movement*. Retrieved from https://earthhow.com/indo-australian-plate/

EPA Identifies Noise Levels Affecting Health and Welfare. (2016). Retrieved from US Environment Protection Agency: https://www.epa.gov/aboutepa/epa-identifies-noise-levels-affecting-health-and-welfare

EPA, U. (2022, April 5). *NAAQS Table*. Retrieved December 5, 2022, from United States Environmental Protection Agency: https://www.epa.gov/criteria-air-pollutants/naaqs-table

EPA, U. (2022, March 9). *Sulfur Dioxide Basics*. Retrieved December 6, 2022, from US EPA: https://www.epa.gov/so2-pollution/sulfur-dioxide-basics

Friedman, D. (2022). *Formaldehyde Gas HCHO Exposure Limits*. Retrieved December 5, 2022, from InspectAPedia: https://inspectapedia.com/indoor_air_quality/Formaldehyde_Gas_Exposure_Limits.php

(2016). *Household Income and Expenditure Survey (HIES) Analytical Report: Household Income.* Male': Ministry of Finance & Treasury.

Kench, P S; Brander, R W. (2006). Response of reef island shorelines to seasonal climate oscillations: South Maalhosmadulu atoll, Maldives. *Journal of Geophysical Research, 111*(F1).

(2020). *Maldives Health Statistics.* Male' City: Ministry of Health.

(2014). *Maldives Population & Housing Census.* Male': Ministry of Finance & Treasury.

(2016). *Maldives' Population Dynamics: Policy Prospects for Human Growth and Opportunity.* Male': United Nations Population Fund.

McAlpine, C. A., Seabrook, L. M., Rhodes, J. R., Maron, M., Smith, C., Bowen, M. E., . . . Cattarino, L. (2010). Can a problem-solving approach strengthen landscape ecology's contribution to sustainable landscape planning? *Landscape Ecology, 28*(8), 1155-1168.

Millero, F. J. (2013). *Chemical Oceanography* (4 ed.). CRC Press.

MNDOLI. (2022, March 10). *Carbon Dioxide (CO2)*. Retrieved December 5, 2022, from Minnesota Department of Health: https://www.health.state.mn.us/communities/environment/air/toxins/co2.html

(2020). *Multihazard Risk Atlas of Maldives.* Male': Ministry of Environment, Climate Change and Technology & ADB.

Nitrogen Dioxide (NO2) Pollution. (2022, August 2). Retrieved December 6, 2022, from US EPA: https://www.epa.gov/no2-pollution/basic-information-about-no2

NOAA. (2021). *Tectonic shift is the movement of the plates that make up Earth's crust*. Retrieved from https://oceanservice.noaa.gov/facts/tectonics.html

NOAA. (2022, December 3). *Trends in Atmospheric Carbon Dioxide*. Retrieved December 4, 2022, from Global Monitoring Laboratory: Earth System Research Laboratories: https://gml.noaa.gov/ccgg/trends/monthly.html

Purdy, E. G., & Bertram, G. T. (1993). *Carbonate Concepts from the Maldives, Indian Ocean* (Vol. 34). American Association of Petroleum Geologists. doi:https://doi.org/10.1306/St34568

(2011). *Risk Management-Principles and Guidelines.* International Organization for Standardization [ISO].

riyan Pte.Ltd. (2013). *Detailed Island Risk and Vulnerability Assessment: G.Dh. Thinadhoo.* Ministry of Environment and Energy.

Soil Management. (n.d.). Retrieved from University of Hawaii: https://www.ctahr.hawaii.edu/mauisoil/a_profile.aspx

Stansfeld, S. A., & Matheson, M. P. (2003). Noise pollution: non-auditory effects on health. *British Medical Bulletin, 68*, 243-257.

(2004). *State of the Environment 2004.* Male': Ministry of Environment & Construction.

(2010). *Statistical Yearbook of Maldives 2010.* Male': Department of National Planning.

statistics, M. B. (2022). *Resident Population by place of enumeration and by island, 2014-2022.* Male'.

UNEP. (2002). *EIA Training Resource Manual.*

United States Environmental Protection Agency. (n.d.). *Particulate matter (PM) pollution*. Retrieved from United States Environmental Protection Agency: https://www.epa.gov/pm-pollution/particulate-matter-pm-basics

Wild Environment. (2012). *Environmental Impact Assessment for Proposed Clinical Waste and Fluorescent Tubes Storage Facility at Blocks 7 and 8, Section 7, 41 Alderson Place, Hume ACT, Australia.* Australia.

Zahid. (2011). The influence of Asian monsoon variability on precipitation patterns over the Maldives PhD thesis. New Zealand: University of Canterbury.

APPENDIX B. LIST OF ABBREVIATIONS

AS/NZS : Australia / New Zealand Standard 199

AS/NZS ISO : Joint Australian New Zealand International Standard 29

CBD : Convention on Biological Diversity 98

CO : Carbon Monoxide 152

CO2 : Carbon dioxide 152

DS : Decision Statement 27

EIA : Environmental Impact Assessment 24

EPA : Environmental Protection Agency 27

GHG : Greenhouse gas 94

HCHO : Methyl aldehyde or Formaldehyde 152

HIES : Household Income & Expenditure Survey 169

IT : Information Technology 28

MFDA : Maldives Food and Drug Authority 48

MNDF : Maldives National Defense Force 93

MPHRE : Ministry of Planning, Human Resource and Environment 40

MTCC : Maldives Transport and Contracting Company 206

NO2 : Nitrogen Dioxide 152

NWSSP : National Water and Sewerage Strategic Plan 51

PM10 : Particulate Matter less than 10 microns 152

PM2.5 : Particulate Matter less than 2.5 microns 152

APPENDIX C. TERMS OF REFERENCE

بسم الله الرحمن الرحيم

އެންވަޔަރަންމަންޓަލް ޕްރޮޓެކްޝަން އޭޖެންސީ
Environmental Protection Agency
EPA

No: 203-ECA/PRIV/2024/96

Terms of Reference for the Environmental Impact Assessment for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll

This is the Terms of Reference (ToR) issued for undertaking the **Environmental Impact Assessment for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll.** The proponent of the project is **The Hawks Pvt Ltd** and the EIA consultant for the project is **Mr. Mahfooz Abdul Wahhab (EIA P22/2016).**

While every attempt has been made to ensure that this ToR addresses all of the major issues associated with development proposal, they are not necessarily exhaustive. They should not be interpreted as excluding from consideration matters deemed to be significant but not incorporated in them, or matters currently unforeseen, that emerge as important or significant from environmental studies, or otherwise, during the course of preparation of the EIA report

1. **Introduction and rationale** –Describe the purpose of the project and, if applicable, the background of the project and the tasks already completed**.** Clearly identify the rationale and objectives to enable the formulation of alternatives. Define the arrangements required for the environmental assessment and if relevant, including how work carried out under this contract is linked and sequenced with projects executed by other consultants, and how coordination between other consultants, contractors, government institutions will be carried out. List the donors, and the institutions the consultant will be coordinating with and the methodologies used. This should include (but should not be limited to) the following;

   - Name and contact details of the proponent.
   - Rationale and background to the project.
   - Aims and objectives of the project.

2. **Study area** – Submit a minimum A3-size scaled plan with indications of all the proposed infrastructures. Specify the agreed boundaries of the study area for the environmental impact assessment highlighting the proposed development location and size of the facility. The study area should include adjacent buildings and related infrastructure, nearby environmentally sensitive sites (e.g. mosque). Justification for site selection is required. Relevant developments in the areas must also be considered including residential areas, all economic ventures and cultural sites

3. **Scope of work**– Identify and number tasks of the project including preparation, construction and decommissioning phases.

Task 1. Description of the proposed project – Provide a full description and justification of the relevant parts of the project, using maps at appropriate scales where necessary. All inputs and outputs related to the proposed activities shall be justified. Provide the following details.

Master plan design concept

a) Approved design of the building including architectural and engineering drawings (A3 sized).
b) Master plan concepts in A3 format accommodation and housing component of the building.
c) Parking capacity and access.
d) Health and safety aspects of the building including fire emergency evacuation plan.

Project development

Provide a schedule outlining the proposed phasing, sequencing and duration of components, including;

a) Need and justification for the proposed project.
b) Pre-construction, construction, operation, and decommissioning.
c) The activities to date, including baseline assessments.
d) Key factors controlling the schedule and uncertainties relating to the project.

Excavation and dewatering

a) Area, depth, volume required for excavation.
b) Excavated earth disposal method and location.
c) Dewatering plan.
d) Dewatered water disposal method and location(s).
e) Compensation plan for construction and dewatering related damages.
f) Shoring methods for particularly on sides with adjacent buildings.
g) Description and justification of any underground structures such as basement or wells.

Foundation and Concrete Works

a) Type of foundation and foundation depth.
b) Structural compliance requirement to National Building Code.
c) Construction process including concrete mixing at site or transportation method.
d) Details of basement usage.

Construction of Pool

a) Construction methodology.
b) Location of proposed pool.
c) Size of the pool.
d) Water source for pool.
e) Details of disposal of wastewater from pool.
f) Details of pool water management including disinfection (treatment methods used, including chlorination, if any).

Construction Management

a) Construction waste management.
b) Traffic flow and management/ Plans for road closures during construction.
c) Project site office and temporary storage area details.
d) Transportation mechanisms and costs.

Utilities

a) Description of the utility providers during construction and operation stage (water, electricity, power).
b) Sewerage connection plan to island's main network.
c) Water connection plan and water storage tank(s) details.
d) Waste management plan during operational phase and constructional phase.
e) Use of energy conserving utilities and technologies.
f) Details of the back-up generator to be installed (if applicable).
g) Estimated consumption of water and electricity and their sources.

Temporary Facilities

a) Construction method of temporary facilities.
b) Schedule of construction.
c) Operation of temporary facilities including power generation, oil storage, water supply, wastewater treatment, temporary accommodation facilities (including utilities), waste management and dewatering.

Project Management

a) Project work schedule: Include project progress, target dates and duration of works, construction/operation/closure of labour camps, access to the site, safety, equipment and material storage, waste management from construction, power and fuel supply.
b) Specify an emergency water supply plan if the system fails.
c) Waste management practices during the construction stage of the project.

Vegetation clearance and revegetation (if any)

a) Details of vegetation clearance, if any.
b) Details of the source of trees that will be used for revegetation.
c) If vegetation is to be supplied from inhabited islands, approvals from those island councils are required and details of the number of trees should be provided.

Task 2. Description of the environment – Assemble, evaluate and present the environmental baseline study/data regarding the study area and timing of the project (eg: monsoon season). Identify baseline data gaps, and identify studies and level of detail to be carried out by the consultant. Consideration of likely monitoring requirements should be borne in mind during survey planning, so that data collected is suitable for use as a baseline. As such all baseline data must be presented in such a way that they will be usefully applied to future monitoring. The report should outline detailed methodology of data collection utilized.

<u>The baseline data will be collected before construction and from at least two benchmarks.</u>

<u>All data must be collected as per the requirements of the EPA Data Collection Guideline (published on www.epa.gov.mv). The report should outline detailed methodology of data collection utilized.</u>

All survey locations shall be referenced with Geographic Positioning System (GPS) including water sampling points, vegetation and noise levels for posterior data comparison. Information should be divided into the categories shown below:

<u>Climate</u>
- Temperature, wind & rainfall.
- Hazard vulnerability.

<u>Physical parameters</u>
- Groundwater quality assessment of the project site and from a control location measuring physical parameters, Temperature, Total Hydro Carbon, Salinity, pH, TDS, TSS, EC, DO, Total Coliform and Fecal Coliform.
- Ground condition assessment.
- Noise levels in the vicinity of the site including any noise sensitive locations.
- Traffic flow (size and direction) including pedestrian movements around the project site.
- Indoor and outdoor air quality in the project vicinity.

<u>Structural environment</u>
- State of adjacent buildings including photographic records of existing conditions of the buildings.
- Condition of the adjacent roads associated with the building.
- Existing structures/uses of the proposed site.
- Condition of the surrounding roads.
- Public facilities nearby.

<u>Biological assessment</u>
- Description of the terrestrial environment such as soil. Description of the status of the ground to include the condition of the soil and vegetation (if any is significant) shall be provided.

<u>Socio-economic environment</u>
- Demographic data for Hulhumale' and population of adjacent buildings.
- Brief description of social environment of Hulhumale' in general and adjacent residential units in particular.
- Identify types of vehicles and peak traffic hours in or near the project site.
- Pedestrian traffic around the proposed site.
- Possible social impact arising from construction activities.

Hazard vulnerability

- Vulnerability of the area to flooding, storm surge and tsunami.

Absence of facilities in the country to carry out the water quality tests will not exempt the proponent from the obligation to provide necessary data. The report should outline the detailed methodology of data collection utilized to describe the existing environment.

Task 3. Legislative and regulatory considerations – Identify the pertinent legislation, regulations and standards, and environmental policies that are relevant and applicable to the proposed project, and identify the appropriate authority jurisdictions that will specifically apply to the project. Legal requirements (but not limited to):

- Fuel storage, handling and transportation regulations of the Ministry of Defence (if applicable).
- Approval from HDC/Urbanco.
- Dewatering permit

Task 4. Potential impacts (environmental and socio-cultural) of proposed project incl. all stages– The EIA report should identify all the impacts, direct and indirect, during and after construction, and evaluate the magnitude and significance of each. Particular attention shall be given to impacts associated with the following:

Impacts on natural environment

- Impacts of noise, vibration and disturbance.
- Impacts on terrestrial flora and fauna and from land preparation works, if any.
- Impacts on groundwater table and quality as a result of project activities including dewatering and groundwater use.
- Impacts on soil.
- Impacts on landscape integrity/scenery.
- Contamination due fuel leakage.
- Impacts due to waste generation.
- Impacts on air quality.

Impacts on the socio-economic environment

- Impacts on employment and income such as job opportunities in the constructional and operational phase.
- Impacts on social values, norms and beliefs due to construction workers on local population.
- Disturbances to residents and cultural facilities/activities.
- Impacts on transportation/traffic.

- Impacts of increased demands on utility services especially water and energy and waste management.
- Odour and noise impacts.
- Impacts on nearby buildings.

Construction related hazards and risks

- Pollution of natural environment (e.g. oil spills, discharge of untreated waste water and solid waste including construction waster).
- Risk of accidents and pollution on workers and local populations.
- Dust and emission.
- Impacts due to foundation works.
- Impacts due to piling works (if applicable).
- Impact due to any traffic diversions.
- Safety and security of the building.
- General public health and safety issues.
- Fire and explosion risks.
- Chemical hazard risks.
- Mosquito growth.

The methods used to identify the significance of the impacts shall be outlined. One or more of the following methods must be utilized in determining impacts; checklists, matrices, overlays, networks, expert systems and professional judgment. Justification must be provided to the selected methodologies. The report should outline the uncertainties in impact prediction and also outline all positive and negative/short and long-term impacts. Identify impacts that are cumulative and unavoidable.

Task 5. Alternatives to Proposed Project – Describe alternatives including "*no action option*" should be presented. Determine the best practical environmental option. Alternatives examined for the proposed project that would achieve the same objectives including the "no action alternative". This should include alternative location, construction technologies, taking into account environmental, social and economic factors. The report should highlight how the location was determined. All alternatives must be compared according to international standards and commonly accepted standards as much as possible. The comparison should yield the preferred alternative for implementation. Mitigation options should be specified for each component of the proposed project.

Task 6. Mitigation and management of negative impacts – Identify possible measures to prevent or reduce significant negative impacts to acceptable levels. These will include both environmental and socio-economic mitigation measures. Measures for both construction and operation phases shall be identified. Cost the mitigation measures, equipment and resources required to implement those measures. The confirmation of the commitment of the developer to implement the proposed mitigation measures shall also be included. An environmental management plan for the proposed project, identifying responsible persons, their duties, and commitments shall also be given. In case where impacts are unavoidable arrangements to compensate for the environmental effect shall be given.

Task 7. Development of monitoring plan – Identify the critical issues requiring monitoring to ensure compliance to mitigation measures and present impact management and monitoring plan during and after completion of the proposed project. Reporting requirements shall be outlined. The baseline study described in task 2 of section 2 of this document is required for data comparison. Detail of the monitoring program including the physical and biological parameters for monitoring, cost commitment from responsible person to conduct monitoring in the form of a commitment letter, detailed reporting scheduling, costs and methods of undertaking the monitoring program must be provided.

Task 8. Stakeholder consultation, Inter-Agency coordination and public/NGO participation – Identify appropriate mechanisms for providing information on the development proposal and its progress to stakeholders, government authorities, NGOS, engineers/designers, development managers, staff and members of the general public. The EIA report should include a list of people/groups consulted and summary of major outcomes. The following parties should be consulted;

a) STELCO.
b) WAMCO.
c) MWSC.
d) Owners and/or occupiers of adjacent buildings.
e) Nearby school(s) (if any).
f) HDC/Urbanco.

Summarize the issues identified during the consultation process, include responses by the Proponent to the issues raised and discuss the stakeholder input that has been incorporated or addressed in the EIA. Concerns that were raised by the stakeholders but not considered in the EIA must be justified by the proponent.

<u>Grievance Redress Mechanism:</u> Provide the complaints management procedure formulated for the proposed project, with important roles and responsibilities identified clearly.

<u>Presentation</u>- The environmental impact assessment report, to be presented in digital format, will be concise and focus on significant environmental issues. It will contain the findings, conclusions and recommended actions supported by summaries of the data collected and citations f or any references used in interpreting those data. The environmental assessment report will be organized according to, but not necessarily limited by, the outline given in the Environmental Impact Assessment Regulations, 2012 and subsequent amendments.

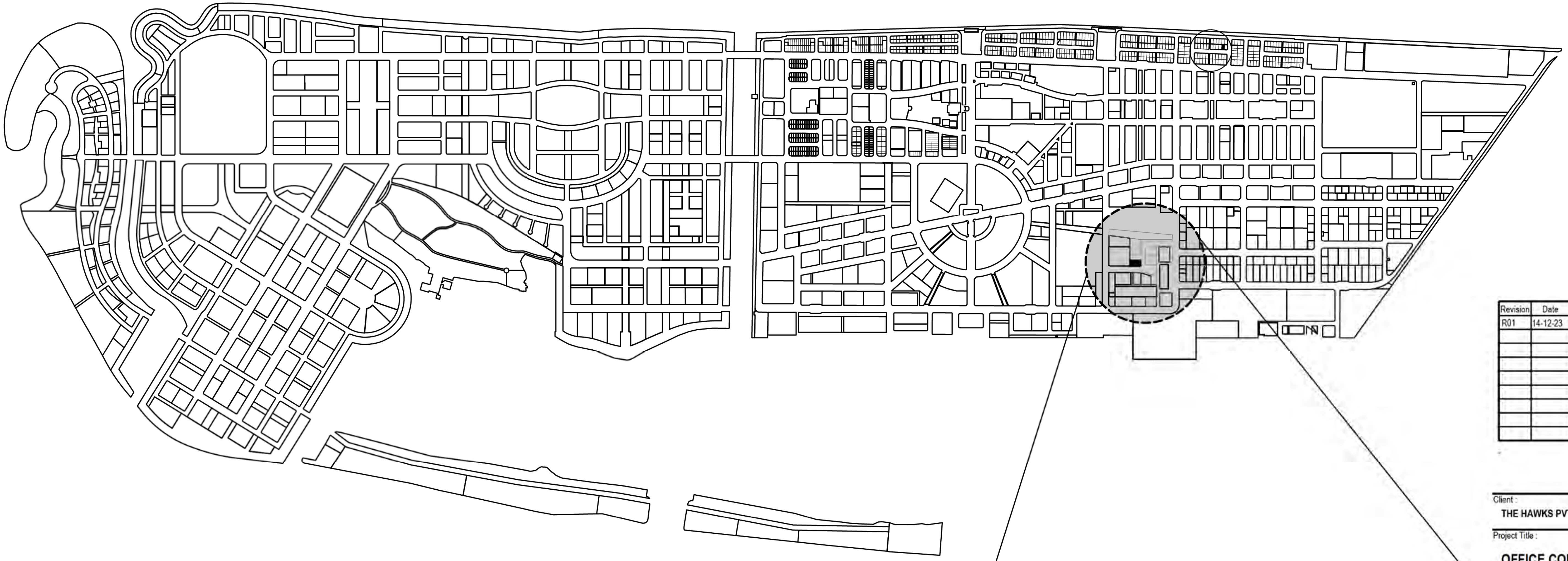
Timeframe for submitting the EIA report – The developer must submit the completed EIA report within **06 months** from the date of this Term of Reference.

……………………………..

14th February 2024

APPENDIX D. APPROVED SITE PLAN

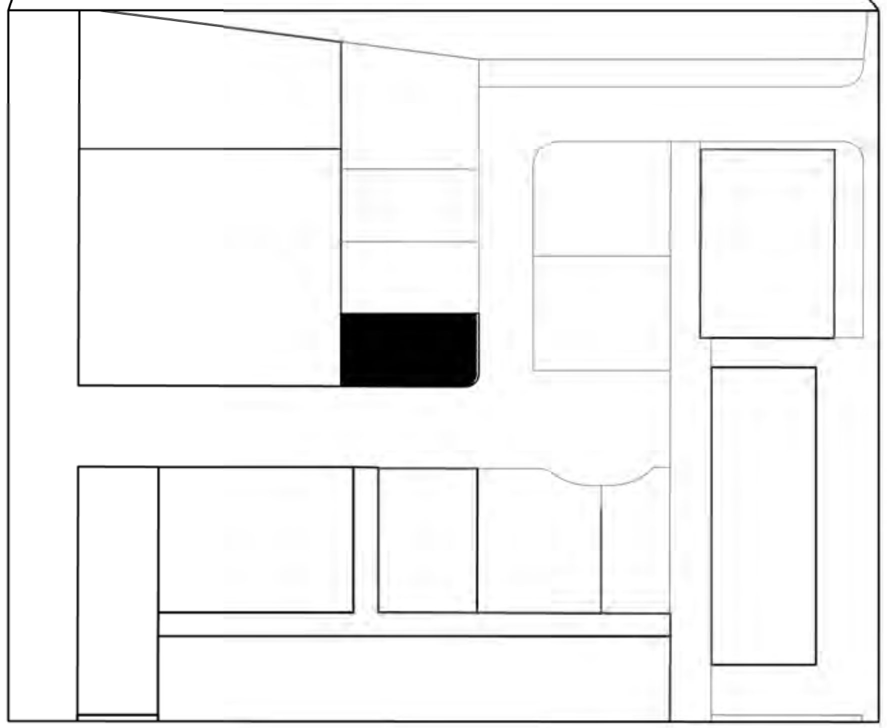
GENERAL NOTES



NORTH

KEYPLAN

NOT TO SCALE



LOT11769

NOT TO SCALE

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
KEY PLAN

Scale :
NTS

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By : **LAESHA**
Date : **NOVEMBER 2023**
Checked By : **THALAAL**

Drawing Number :
11-101

Revision Number :
R01

File Name :
306-11-101R01.dwg

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

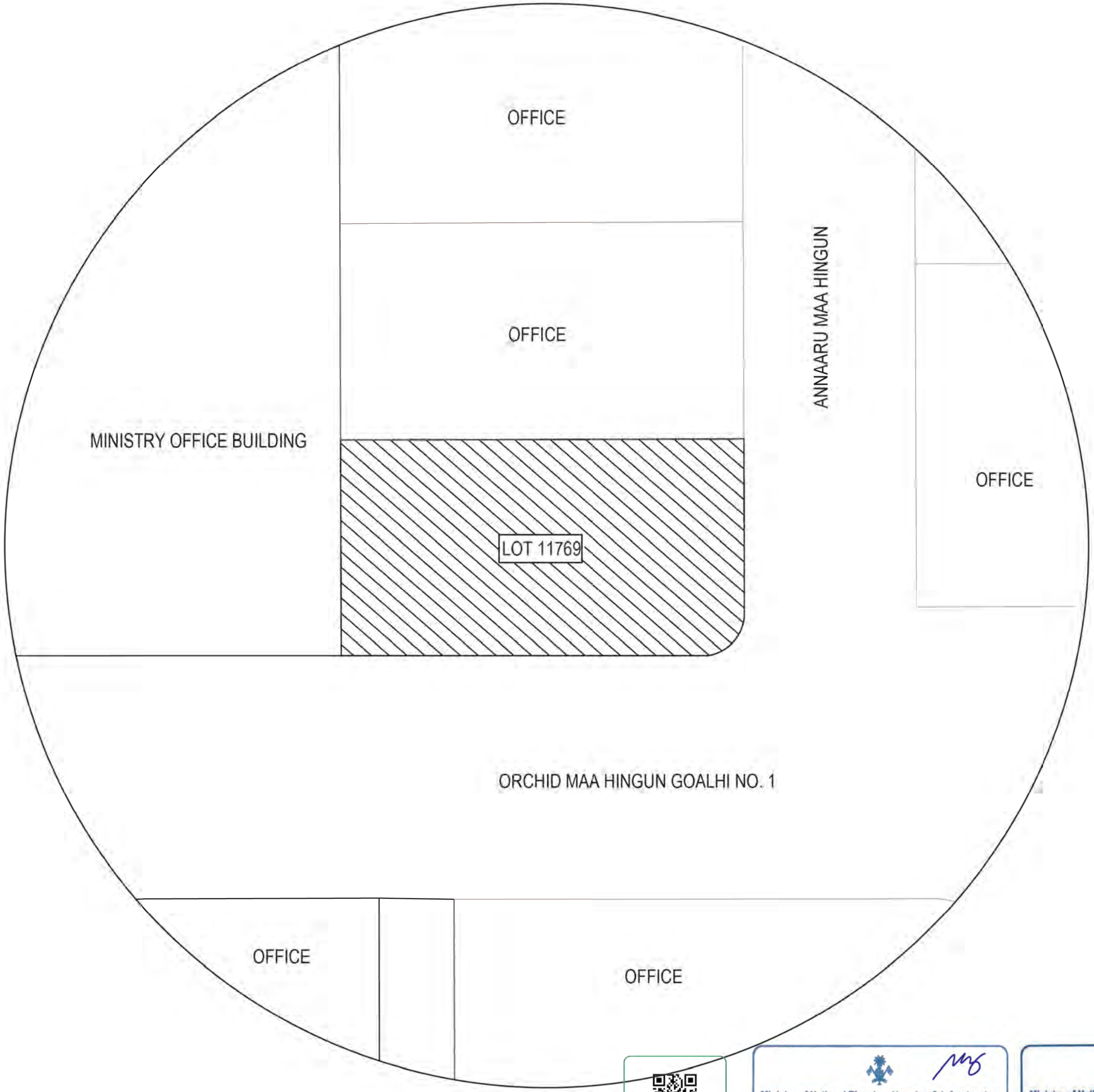
GEDOR CONSULTING PVT. LTD

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

APPROVED
HOUSING DEVELOPMENT CORPORATION

GENERAL NOTES



SITE PLAN
SCALE 1:250

APPROVED
HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LOCATION PLAN

Scale :
1:350

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By : **LAESHA**
Date : **NOVEMBER 2023**
Checked By : **THALAAL**

Drawing Number :
11-102

Revision Number :
R01

File Name :
306-11-102R01.dwg

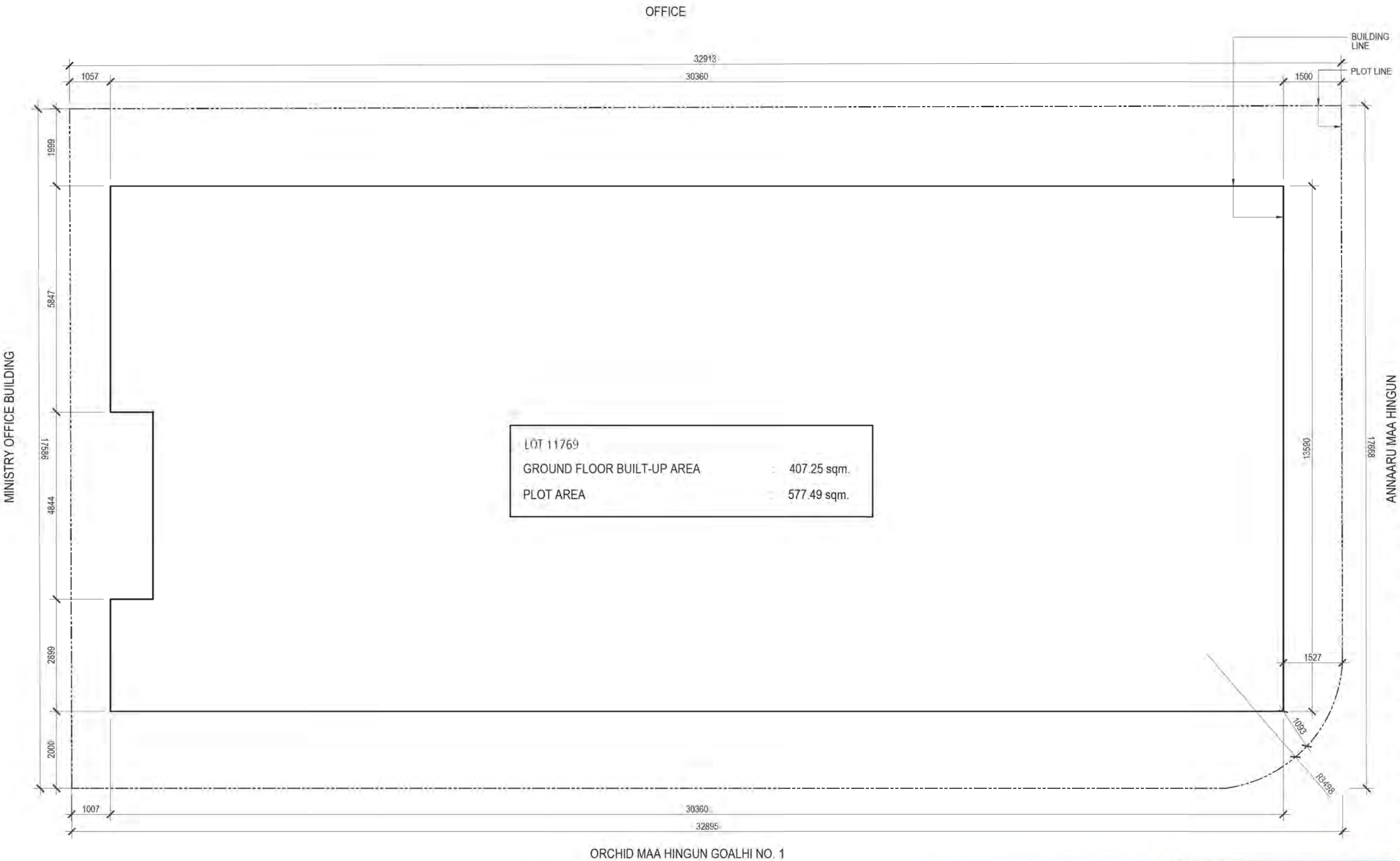
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

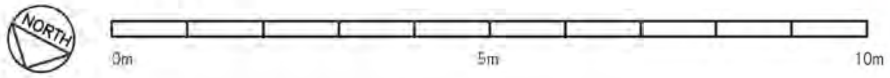
GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



SITE PLAN
SCALE 1:100



APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
SITE PLAN

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA

Date :
NOVEMBER 2023

Checked By :
THALAAL

Drawing Number :
11-103

Revision Number :
R01

File Name :
306-11-103R01.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

APPENDIX E. LAND REGISTRATION

ރަޖިސްޓަރީ ނަންބަރު:
GA 1063 H

ގޯތީގެ ރަޖިސްޓަރީ

ނަން: ހުޅުމާލެ ގޯތި ނަންބަރު 11769 (އަހްމަދު ރަޝީދު ހަސަން ބިލްޑިންގު)

އެޑްރެސް: އޯކިޑްމާރިނގުން ހުޅުމާލެ

ކާޑީ ނަންބަރު: -

މާލޭ ސިޓީ ކައުންސިލްގެ އިދާރާ
މާލެ،
ދިވެހިރާއްޖެ

ގޯތީގެ ރަޖިސްޓަރީ

ރަޖިސްޓަރީ ނަންބަރު: GA 1063 H

ގޯތި އަމިއްލަކުރިކަން އެނގޭ ސްލިޕް ނަންބަރު: -

ގޯތީގެ ނަންބަރު: 11769

ގޯތީގެ ނަން (ނަމެއް ކިޔާފައިވާނަމަ): އަބްދުލް ރަޝީދު ޙަސަން ބިލްޑިންގ

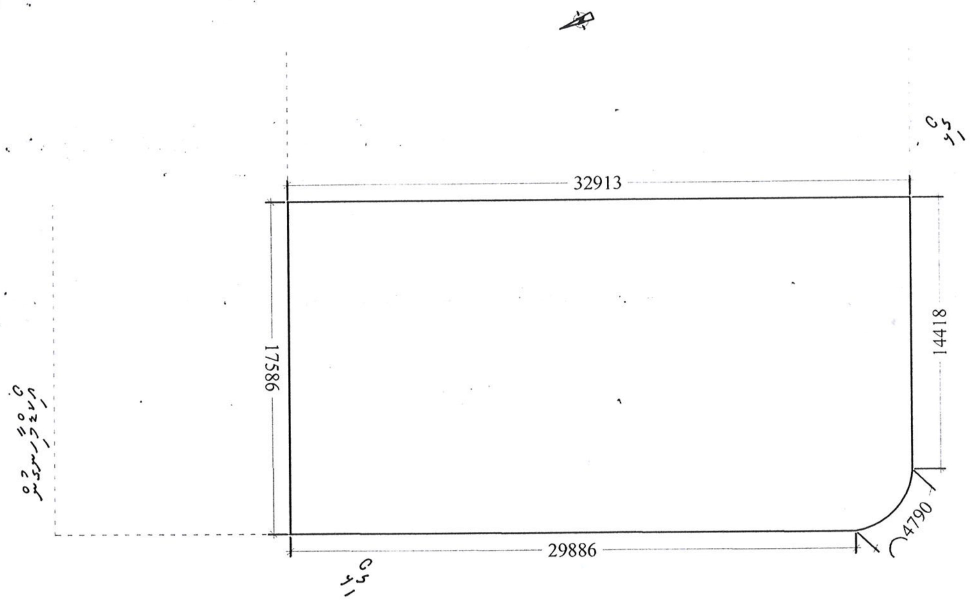
މަގުގެ ނަން: އޯކިޑްމާހިނގުން

އަވަށް: ހުޅުމާލެ

ގޯތީގެ ބާވަތް: އަމިއްލަ

ގޯތި ހަވާލުކުރުމުން ފަރާތް

ނަންބަރު	ފުރިހަމަ ނަން	ކުންފުނީ ރަޖިސްޓަރީ ނަންބަރު
1	ދަ ރޯލްސް ޕްރައިވެޓް ލިމިޓެޑް	C-109/2007



ހުޅުމާލެ ގޯތި ނަންބަރު 11769 (އަޙްމަދު ރަޝީދު ހަސަން ބިލްޑިންގ)

ސްކޭލް - 1 : 400

އޭރިއާ : 577.49 އަކަމީޓަރު

އެންގުންތަކެއް

1. ގޯއްޗާއި ބެހޭ ގޮތުން ހައުސިންގ ޑިވެލޮޕްމަންޓް ކޯޕަރޭޝަން ލިމިޓެޑުއިން ހައްދަވައިދެއްވާފައިވާ ޤަވާއިދުތަކަށް ހުރުމަތްތެރިކޮށް ހިފާ، އަމަލުކުރަން ވާނެއެވެ.
2. ގޯތީގެ ނަންބަރު ޖަހާފައިވާ ނަން ބޯޑެއް، ނަމެއްކިޔާފައިވާނަމަ ނަމާއިއެކު ހަރުކޮށްފައި ބަހައްޓަންވާނެއެވެ. އަދި ނަންބަރު ބޯޑު ކިޔަން ނޭނގޭވަރު ވިޔަނުދީ ނަންބަރު ބޯޑު މަރާމާތުކޮށް ނުވަތަ އާކޮށް ބަލަހައްޓަންވާނެއެވެ.
3. ގޯތީގެ މިލްކުވެރިޔަކު ބަދަލުވެއްޖެނަމަ އެއް މަސްދުވަހުގެ ތެރޭގައި އެފަރާތްތަކުން ރަޖިސްޓަރީ ބަދަލުކުރުމަށް ހުށަހަޅަންވާނެއެވެ.
4. ރަޖިސްޓަރީގެ އަކުރަކަށް ނުވަތަ ލިޔުމަކަށް އުނިއިތުރެއް ގެނެސްފިނަމަ ޤާނޫނީ ފިޔަވަޅުއެޅޭނެއެވެ.
5. މަގުމަތީ ފާރު ނުވަތަ ފާރުން ބަޔެއް ނަމަވެސް ކަނޑާލަންވާނީ ކަމާބެހޭ ފަރާތްތަކުން ހުއްދަ ނެގުމަށްފަހުގައެވެ.
6. ގޯތީގައި އިމާރާތް ކުރުމަށްފަހު އިމާރާތާއި ގޯތީގެ ރަޖިސްޓަރީ ހައްދަވަންވާނެއެވެ.

APPENDIX F. DETAILED DRAWINGS

ARCHITECTURAL CHECKER'S CERTIFCATE

for architectural design compliance - category B1

1. I **Abdulla Thalaal Ahmed** being a registered checker, hereby certifies that I have in accordance with Male' Planning Regulation and other applicable regulations relevant to planning, design and construction of buildings set out by the Government Authorities, have carried out an evaluation and review of the drawings of the building works attached and to the best of my knowledge and belief the drawings do not show any incompliance in the design of the building to be erected or by the works carried out in accordance with those drawings.
2. In arriving at my conclusion , I confirm that I have reviewed and checked the design in accordance with the building regulations using the following criteria:-
    a. rules and regulations set out by the authorities in relation to building design and construction;
    b. codes of practice adopted in design;
    c. standards and specifications of materials;
    d. architectural design concept;
    e. architectural detailing;
    f. appropriate checklist set out by the authorities (included with this Certificate);
    g. Structural detailing;
    h. Others specify…………………………………………………………………………

Plot Name/No: LOT 11369

Name of Architect: Abdulla Thalaal Ahmed

City/Atoll/Island: Kaafu, Hulhumale'

Date: 15 November 2023

Type of Building (use): Office (Concrete)

Checker's Reg. Number: BPR2023022B1

Plot Owner's Name: Hawks PVT LTD

Checker's Signature: ………………….

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Official Stamp of the
Registered Architectural Checker

FOR OFFICIAL USE ONLY

Building Permit No.: ………………………………………………………	Local Authority's Stamp

APPROVED
HOUSING DEVELOPMENT CORPORATION

STRUCTURAL CHECKER’S CERTIFCATE

For structural designcompliance- category A1

1. I Mohamed Shareef being a registered checker, hereby certifies that I have in accordance with Male’ Planning Regulation and other applicable regulations relevant to planning, design and construction of buildings set out by the Government Authorities, have carried out an evaluation and review of the drawings of the building works attached and to the best of my knowledge and belief the drawings do not show any incompliance in the design of the building to be erected or by the works carried out in accordance with those drawings.
2. In arriving at my conclusion , I confirm that I have reviewed and checked the design in accordance with the building regulations using the following criteria:-
    a. Codes of practice adopted in the design;
    b. Including wind load, construction load or dynamic load, (if applicable) checked;
    c. Standards and specifications of structural elements;
    d. Structural design concept and identification of the key structural elements;
    e. Structural analysis and design of all key structural elements including foundation systems;
    f. Stability of structural frame;
    g. Structural detailing;
    h. Others specify…………………………………………………………………………

Plot Name/No: **LOT 11369**

City/Atoll/Island: **Kaafu, Hulhumale’**

Type of Building (use): **Office (Concrete)**

Plot Owner’s Name: **Hawks Pvt Ltd**

Name of Engineer: **Mohamed Shareef**

Date: **15/11/2023**

Checker’s Reg. Number: **BPR2023010A1**

Checker’s Signature: …………………………..

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Official Stamp of the
Registered Structural Checker

FOR OFFICIAL USE ONLY

Building Permit No.: ……………………………………………………………	Local Authority’s Stamp

APPROVED
HOUSING DEVELOPMENT CORPORATION

FOUNDATION PROTECTION METHOD

Shoring is a widely used technique in construction projects to temporary reinforcement below-ground excavations. Shoring helps to ensure that lateral walls remain intact and serves as a foundation protection method to prevent collapsing and other dangerous circumstances during excavation. Shoring can be accomplished with a few different ways. Given that this project’s extensive excavated area of 701.87 square meters and 9.037 meter deep, sheet piling is recommended.

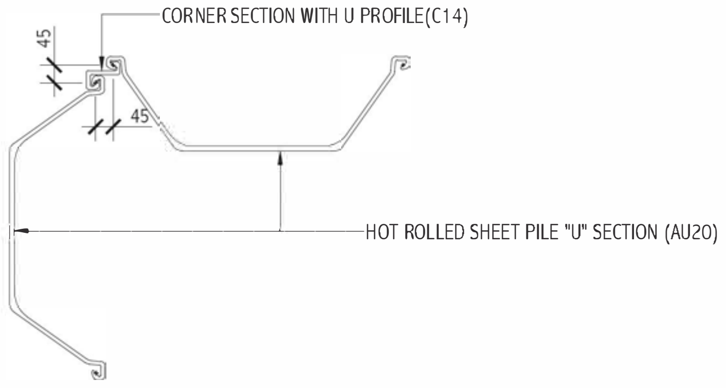
The “U” section hot rolled sheet pile (AU20) should be driven into the ground until reaching the hard strata. The sheets need to be properly braced by using Steel section C channels of 300x100x46 from all the directions as shown from the drawing. These bracings should be constructed 2 meters above from the foundation bottom level, high enough to be able to work on the foundation. This helps the sheets to be held and prevents from bulging and other effects of soil movements. For additional stability along the longer end to end span of the excavation, two truss bracing are constructed from the middle. The members of the trusses are made of steel pipe of 90 mm diameter and 6 mm thick as shown on the drawing. These truss members should be installed 1 meter below the neutral ground level.

Prepared by

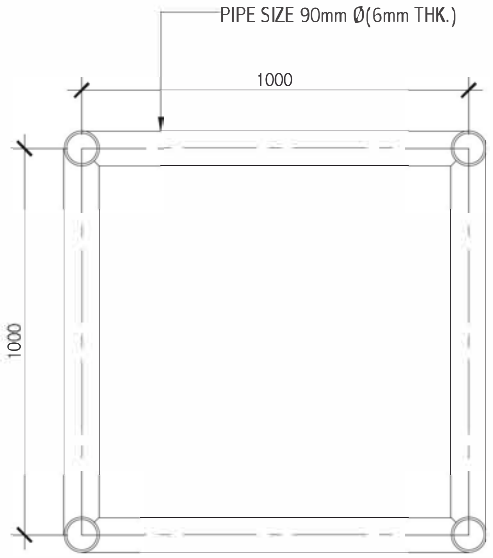
Mohamed Zayan
Civil/Structural Engineer

Checked by

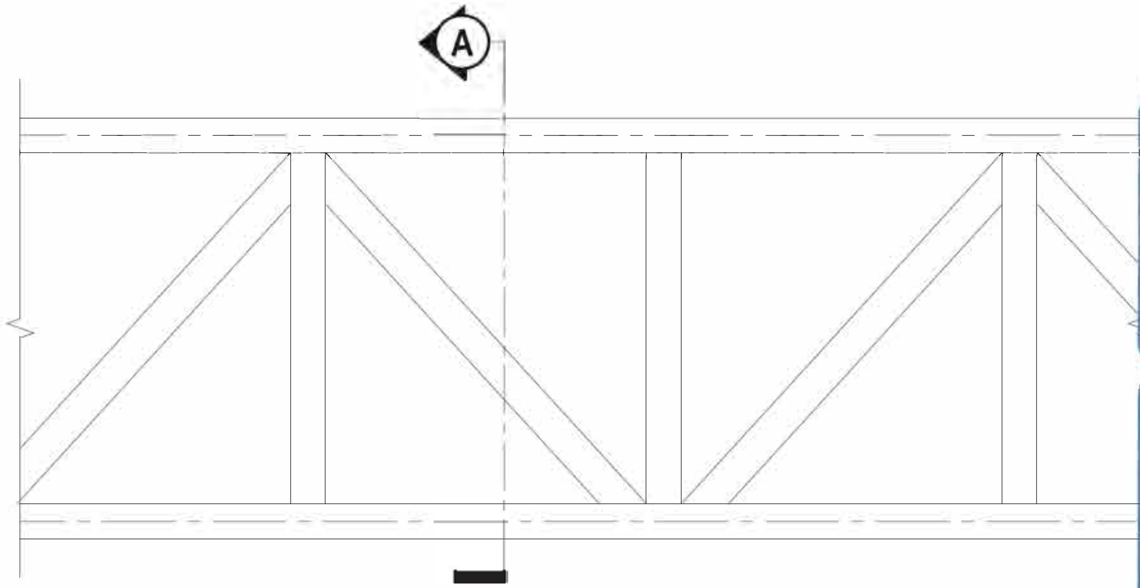
Kinaanath Hussein
(DPR2019003LE)
Civil/Structural Engineer



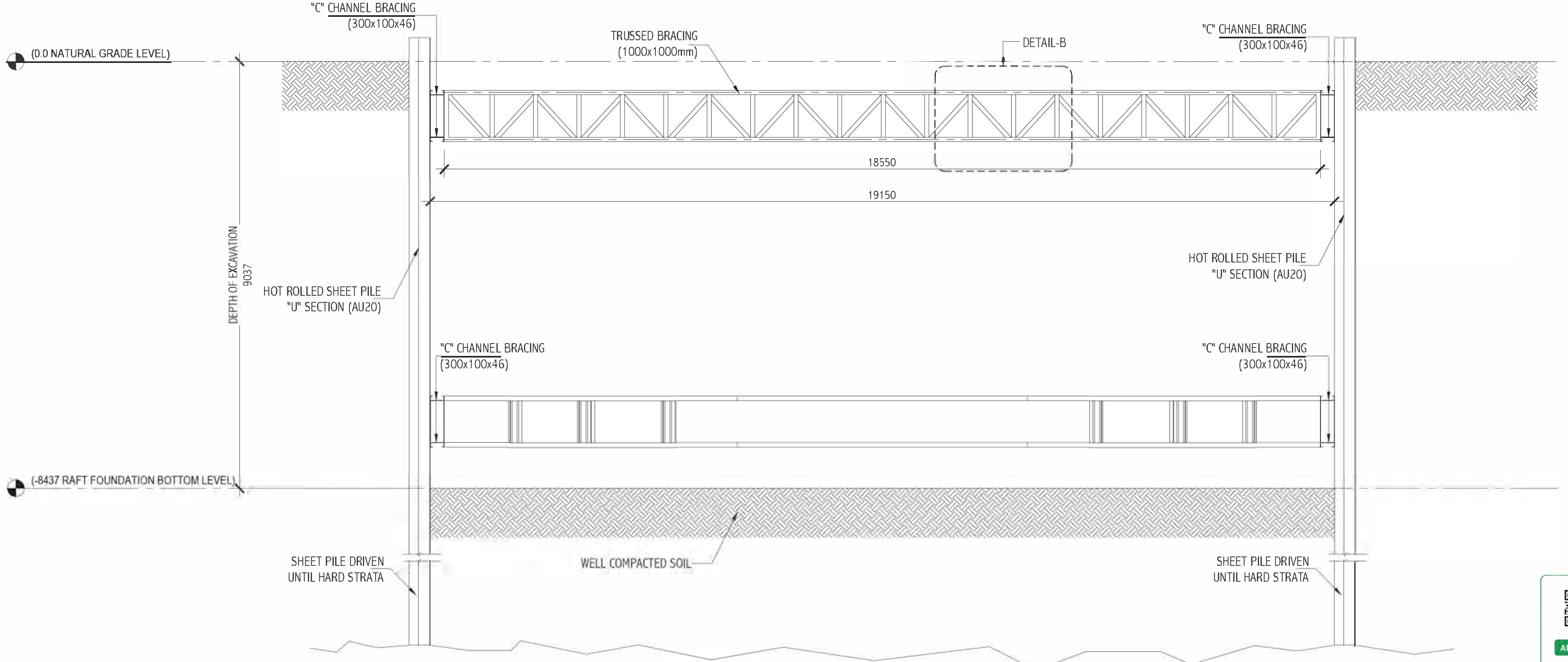
CORNER DETAIL (DETAIL-A)
SCALE 1:20



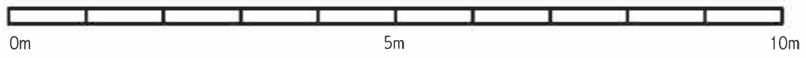
SECTION A-A
SCALE 1:20



TRUSS DETAIL (DETAIL-B)
SCALE 1:20



SECTION-Y
SCALE 1:100



Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
-	-	-	-

REV "A" ACCORDING TO ARCHITECTURAL PLAN XXX

This drawing should be used only for the project mentioned on this sheet

Client :
The Hawks Pvt Ltd

Project Title :
OFFICE COMPLEX
Hulhumale'

Building Name :
OFFICE COMPLEX
Drawing Title :
SHORING DETAIL
SECTION-Y &
CORNER DETAIL

Scale :
A.S. / A3

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Designed By : KINAANATH HUSSAIN(DPR2019003LE)
Checked By : SHAREEF

Drawing Number :
21-008a

Revision Number :
R00

File Name :
306-21-008aR00

APPROVED
HOUSING DEVELOPMENT CORPORATION

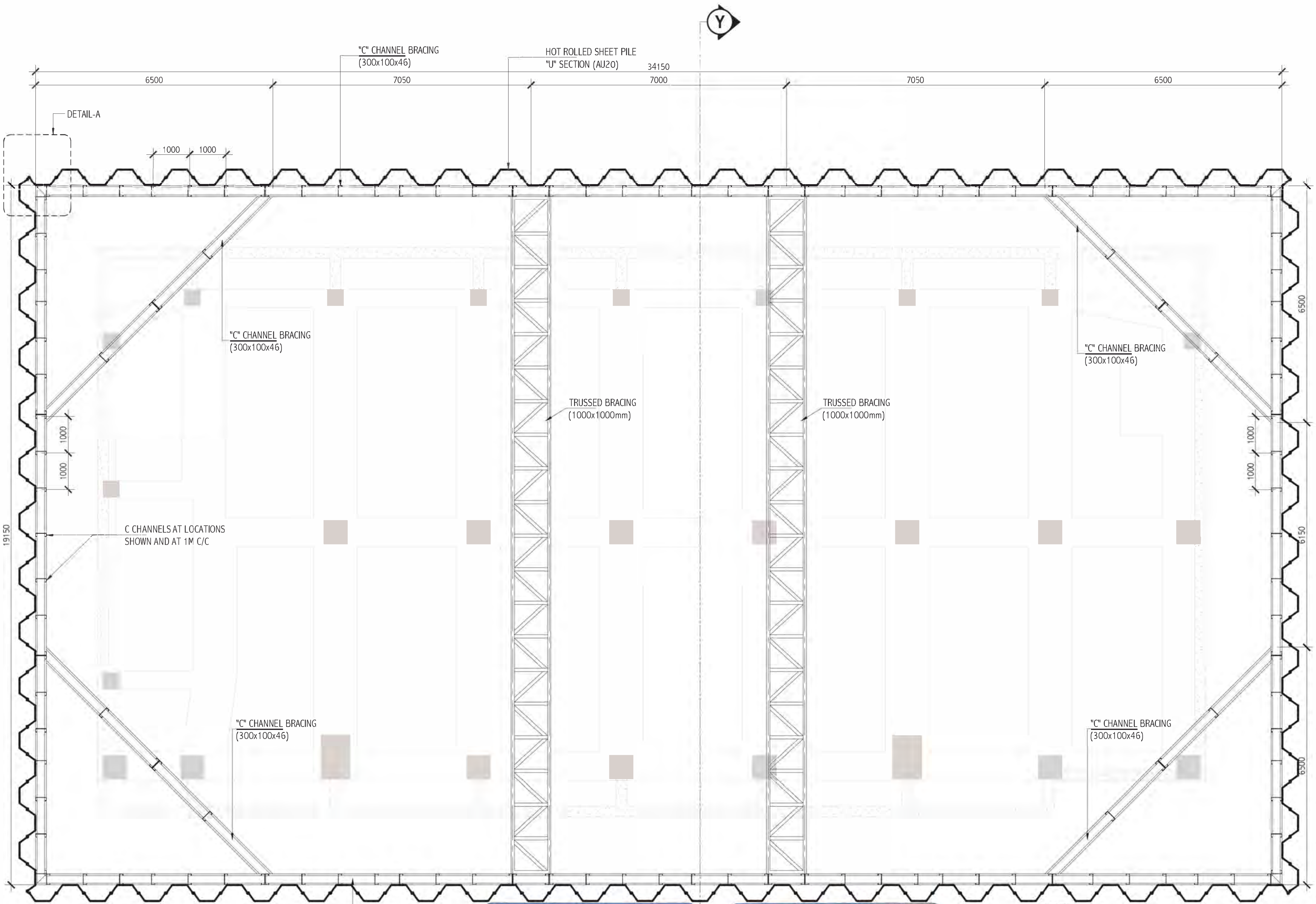
KINAANATH HUSSAIN(DPR2019003LE)

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

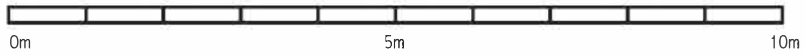
Tel: 960 318452
Fax: 960 310317
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site.



SHORING PLAN
SCALE 1:100



Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

KINAANATH HUSSAIN(DPR2019003LE)

NOTE:

01. STEEL SECTIONS, TRUSS SIZE AND SHEET PILE SIZES CONTRACTOR TO VERIFY BASED ON SITE CONDITION.
02. METHOD OF ERECTING AND DISMANTLING OF EVERY STRUCTURAL COMPONENT AT EACH STAGE TO BE PROPOSED BY CONTRACTOR AND APPROVED BY CONSULTANT.

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
-	-	-	-

REV "A" ACCORDING TO ARCHITECTURAL PLAN XXX

This drawing should be used only for the project mentioned on this sheet

Client :
The Hawks Pvt Ltd

Project Title :
OFFICE COMPLEX
Hulhumale'

Building Name :
OFFICE COMPLEX
Drawing Title :
SHORING DETAIL
PLAN VIEW

Scale :
1:100 / A3

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Designed By : **KINAANATH HUSSAIN(DPR2019003LE)**
Checked By : SHAREEF

Drawing Number :
21-008

Revision Number :
R00

File Name :
306-21-008R00

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 318452
Fax: 960 310317
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

VISUAL SOIL INSPECTION REPORT
Hulhumale Lot 11769

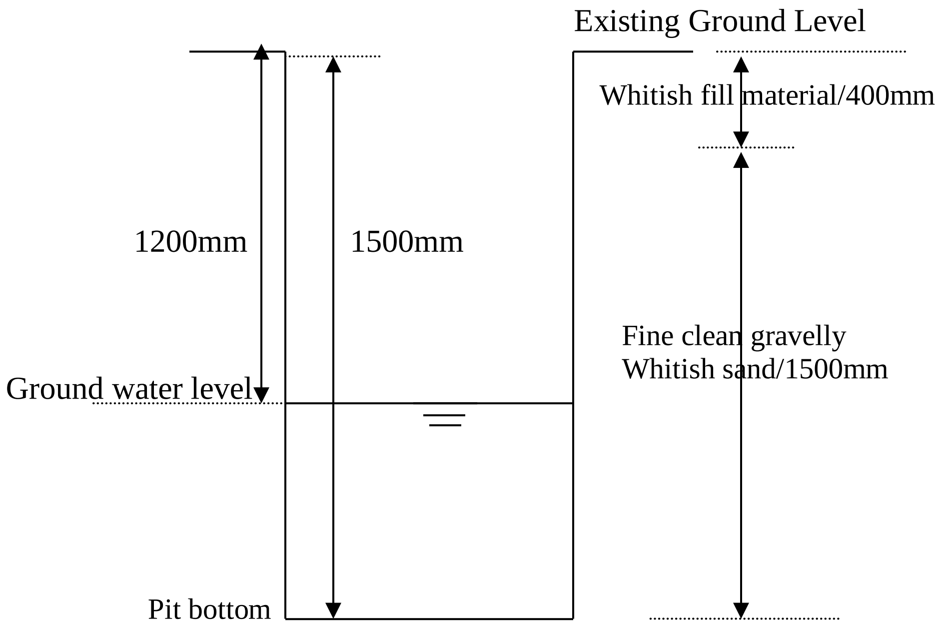
LOCATION: Lot 11769 Hulhumale’, Maldives
DATE: 10/12/2023

A trial pit was dug to 1500mm below existing ground level as the artificially filled material is up to this level. The variation of soil strata is shown in the diagram.

From ground level down to 400mm, whitish fill material was found. Further below until 1500mm, fine clean gravelly whitish sand was found. Ground water table level was detected at 1200 mm below ground surface. No lose organic matter or garbage was found in the pit. At the time of excavating for foundation to the required basement depth, a detailed visual inspection shall be made by the supervising engineer. Wherever material other than non-organic sand/gravel/rock is seen close or at the level of the foundation reduced level, this material (especially peat, garbage, clays and silts) shall be replaced by good soil and compacted. It is noted that dewatering will be required for the foundation placing. Adequate shoring as approved by relevant authorities shall be done while excavation for foundations.

Assumed safe bearing capacity used for foundation design was 255kN/m^2. Before construction, 15m deep boreholes must be driven and verified if the assumed safe bearing capacity does not exceed the bearing capacity from SPT.

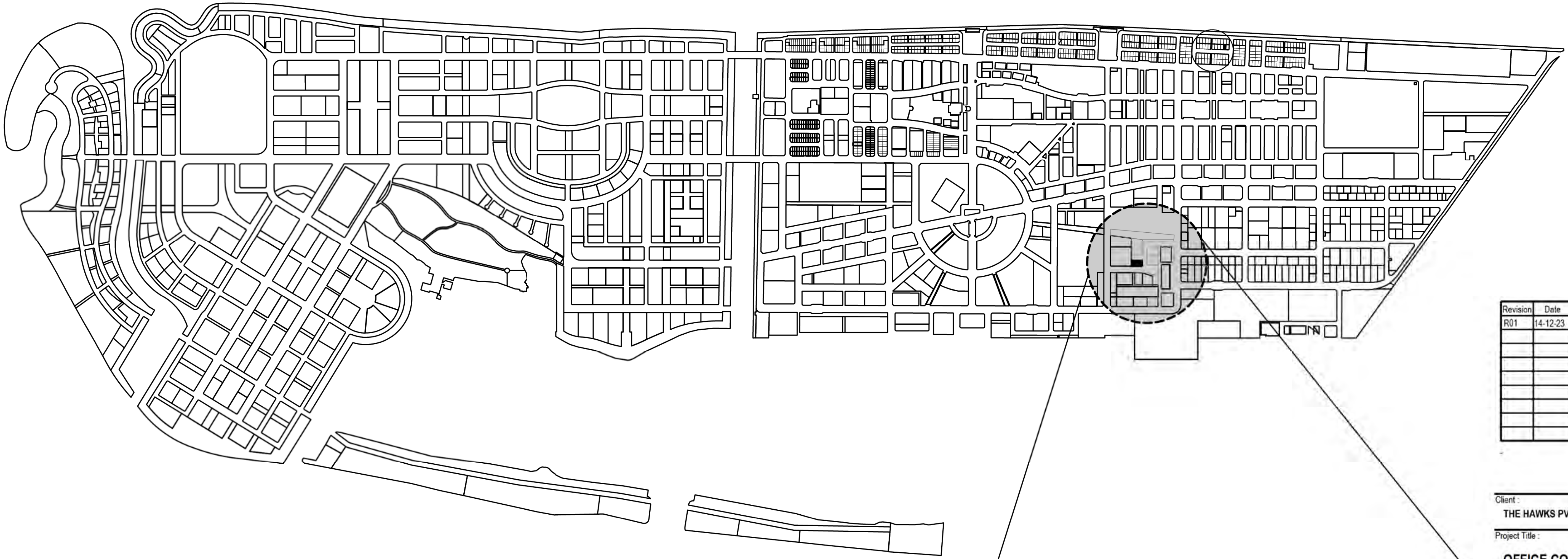
DIAGRAM

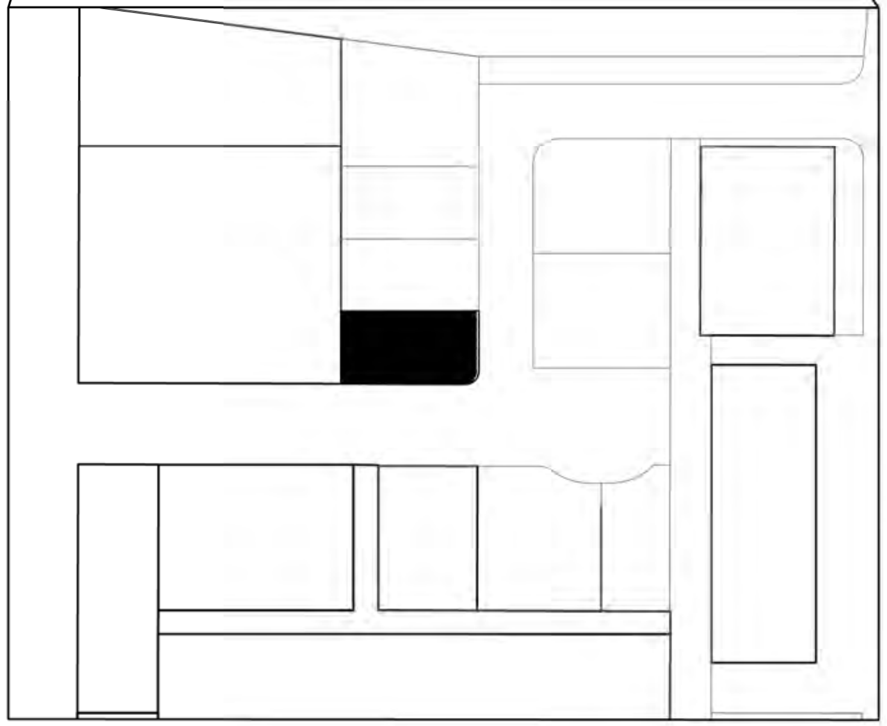


Report prepared by:

Kinaanath Hussain
Structural Engineer
DPR2019003LE

GENERAL NOTES





KEYPLAN
NOT TO SCALE

LOT11769
NOT TO SCALE

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet.

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
KEY PLAN

Scale :
NTS

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA

Date :
NOVEMBER 2023

Checked By :
THALAAL

Drawing Number :
11-101

Revision Number :
R01

File Name :
306-11-101R01.dwg

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

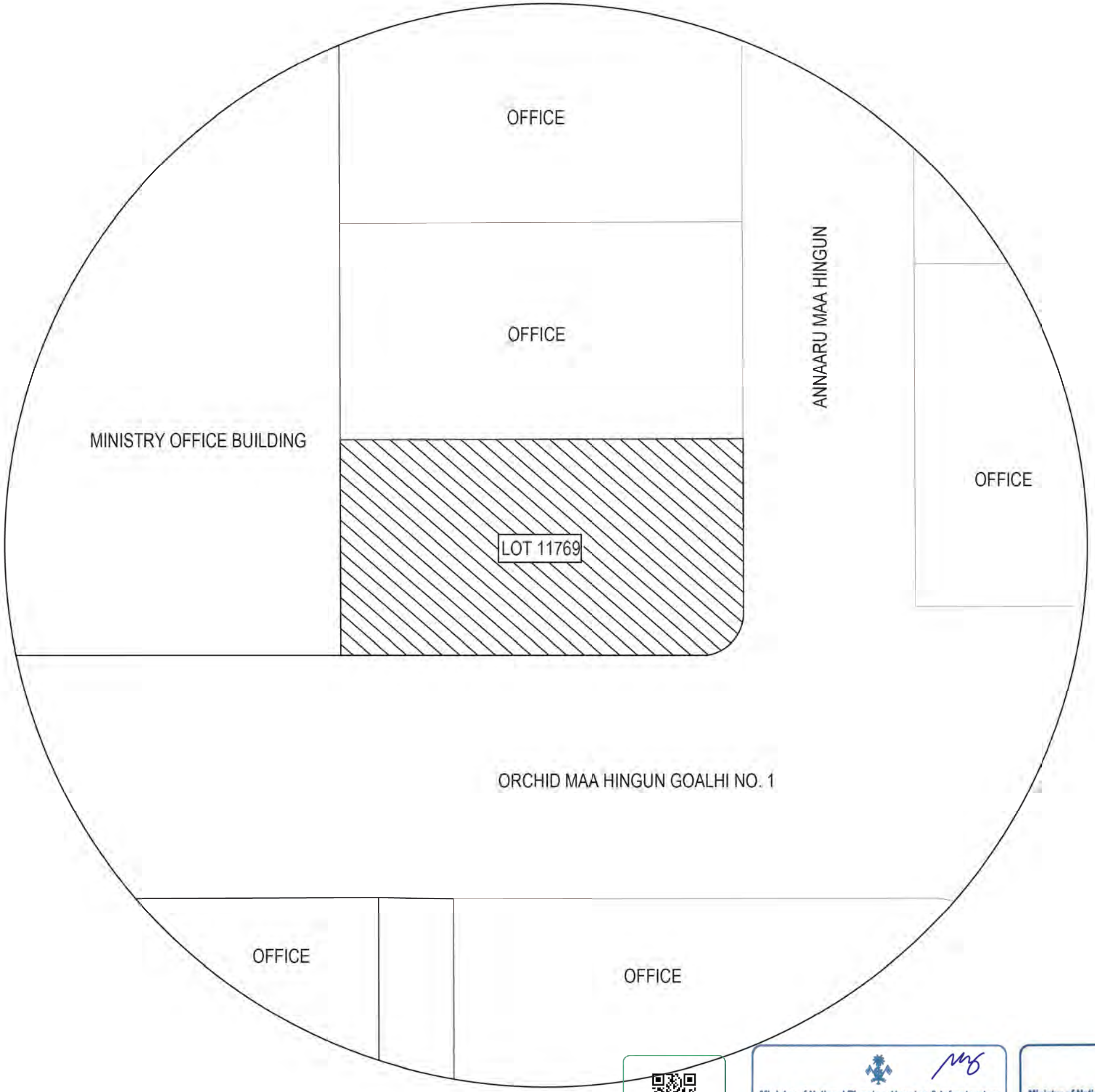
Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

APPROVED
HOUSING DEVELOPMENT CORPORATION



SITE PLAN
SCALE 1:250

GENERAL NOTES

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX
Drawing Title :
LOCATION PLAN

Scale :
1:350

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By : **LAESHA**
Date : **NOVEMBER 2023**
Checked By : **THALAAL**

Drawing Number :
11-102

Revision Number :
R01

File Name :
306-11-102R01.dwg

APPROVED
HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

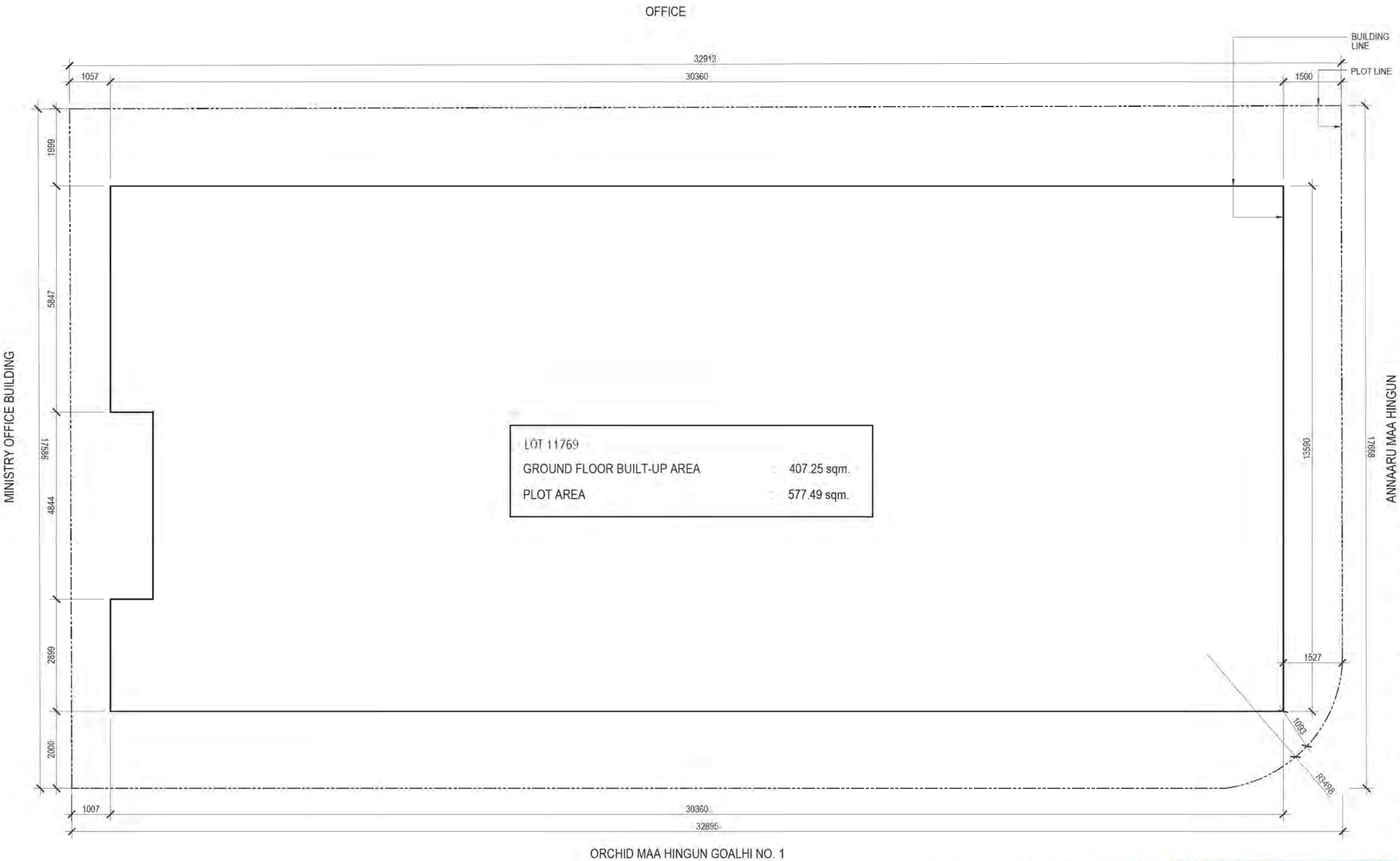
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



SITE PLAN
SCALE 1:100

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
SITE PLAN

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA

Date :
NOVEMBER 2023

Checked By :
THALAAL

Drawing Number :
11-103

Revision Number :
R01

File Name :
306-11-103R01.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

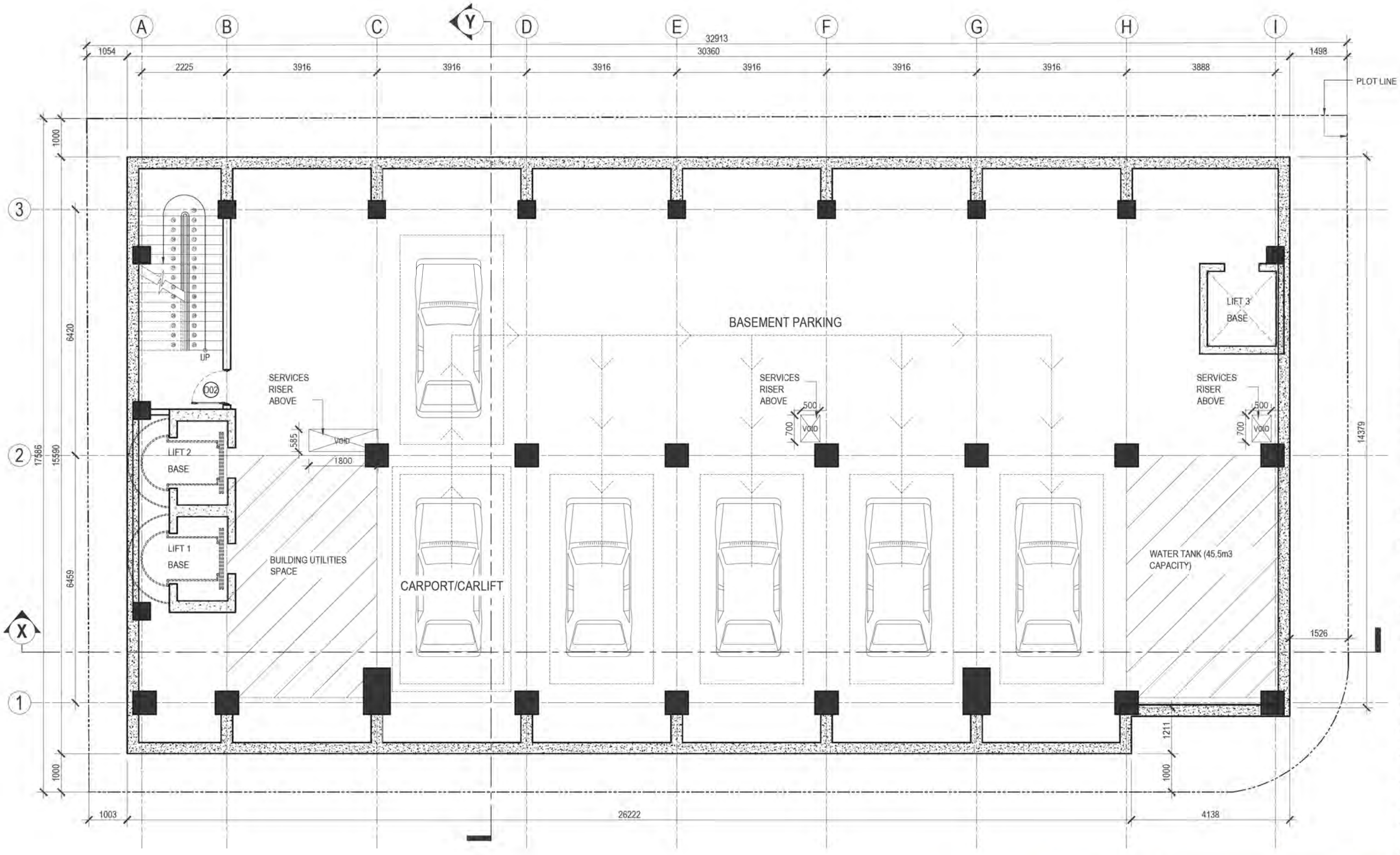
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

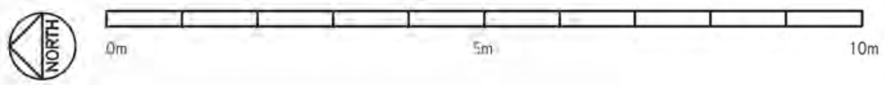
All dimensions to be checked on site

GENERAL NOTES



BASEMENT LEVEL - B1

SCALE 1:100



APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
BASEMENT LEVEL - B1
(BASEMENT FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-104

Revision Number :
R02

File Name :
306-11-104R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

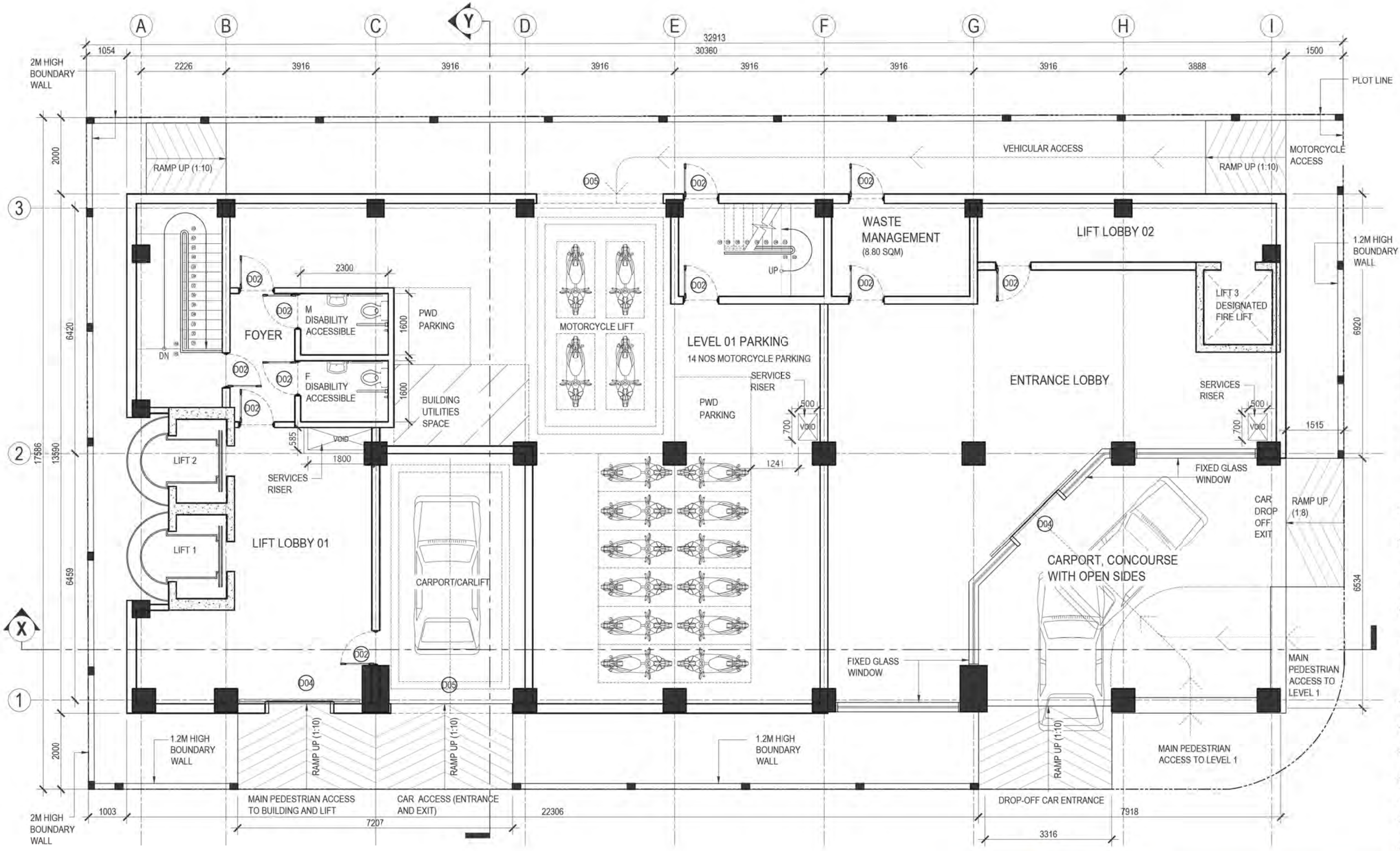
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

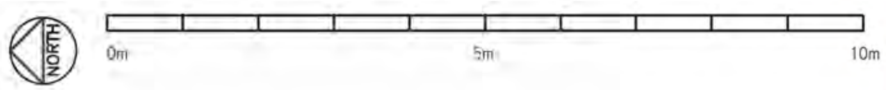
All dimensions to be checked on site

GENERAL NOTES



LEVEL-01 (GROUND FLOOR)

SCALE 1:100



APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL
R03	06-02-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LEVEL - 01 (GROUND FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By : LAESHA
Date : NOVEMBER 2023
Checked By : THALAAL

Drawing Number : **11-105**

Revision Number : R03

File Name : 306-11-105R03.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

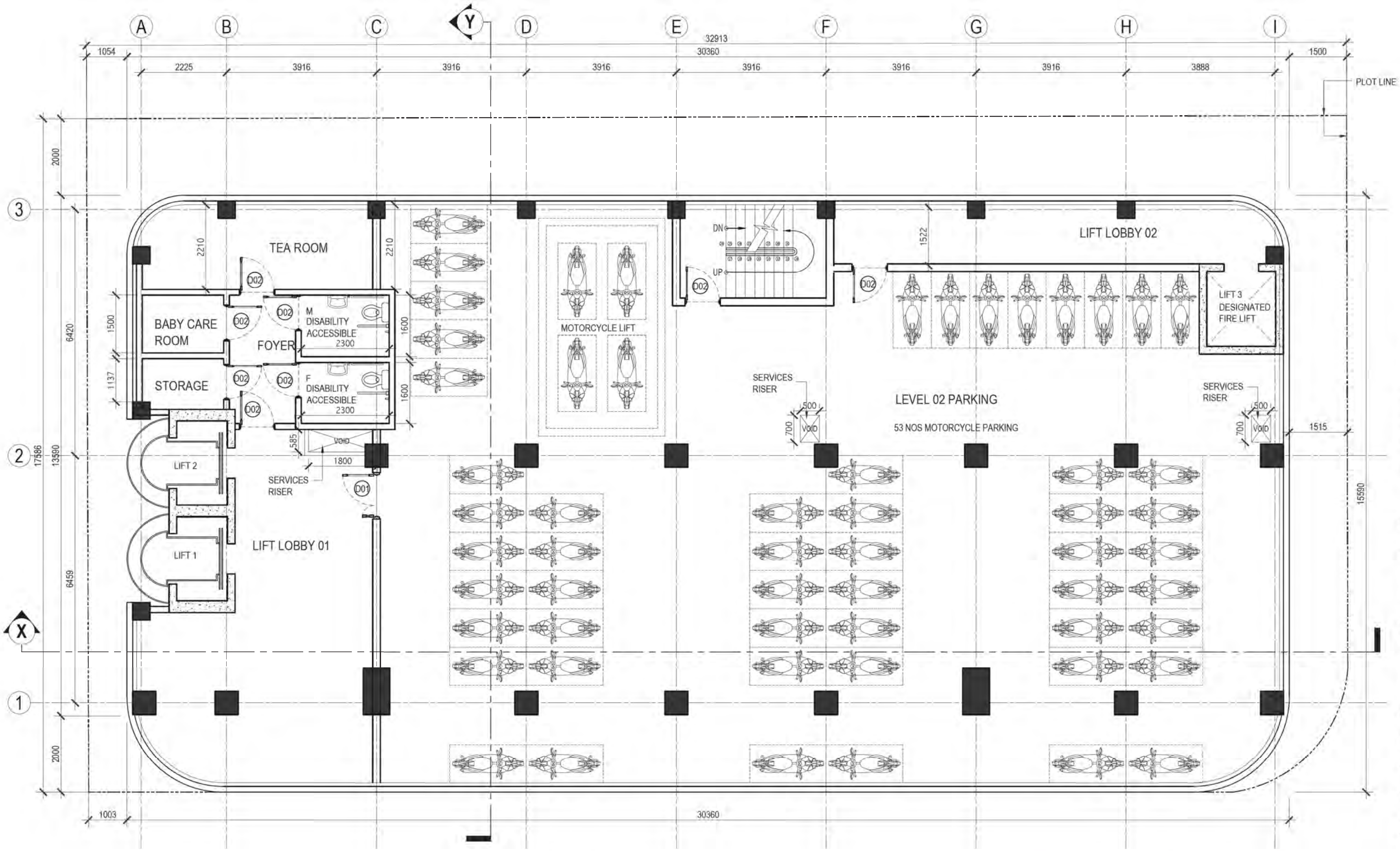
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

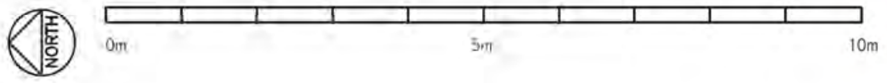
All dimensions to be checked on site

GENERAL NOTES



LEVEL-02 (FIRST FLOOR)

SCALE 1:100



APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LEVEL - 02
(FIRST FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By : **LAESHA**
Date : **NOVEMBER 2023**
Checked By : **THALAAL**

Drawing Number :
11-106

Revision Number :
R02

File Name :
306-11-106R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

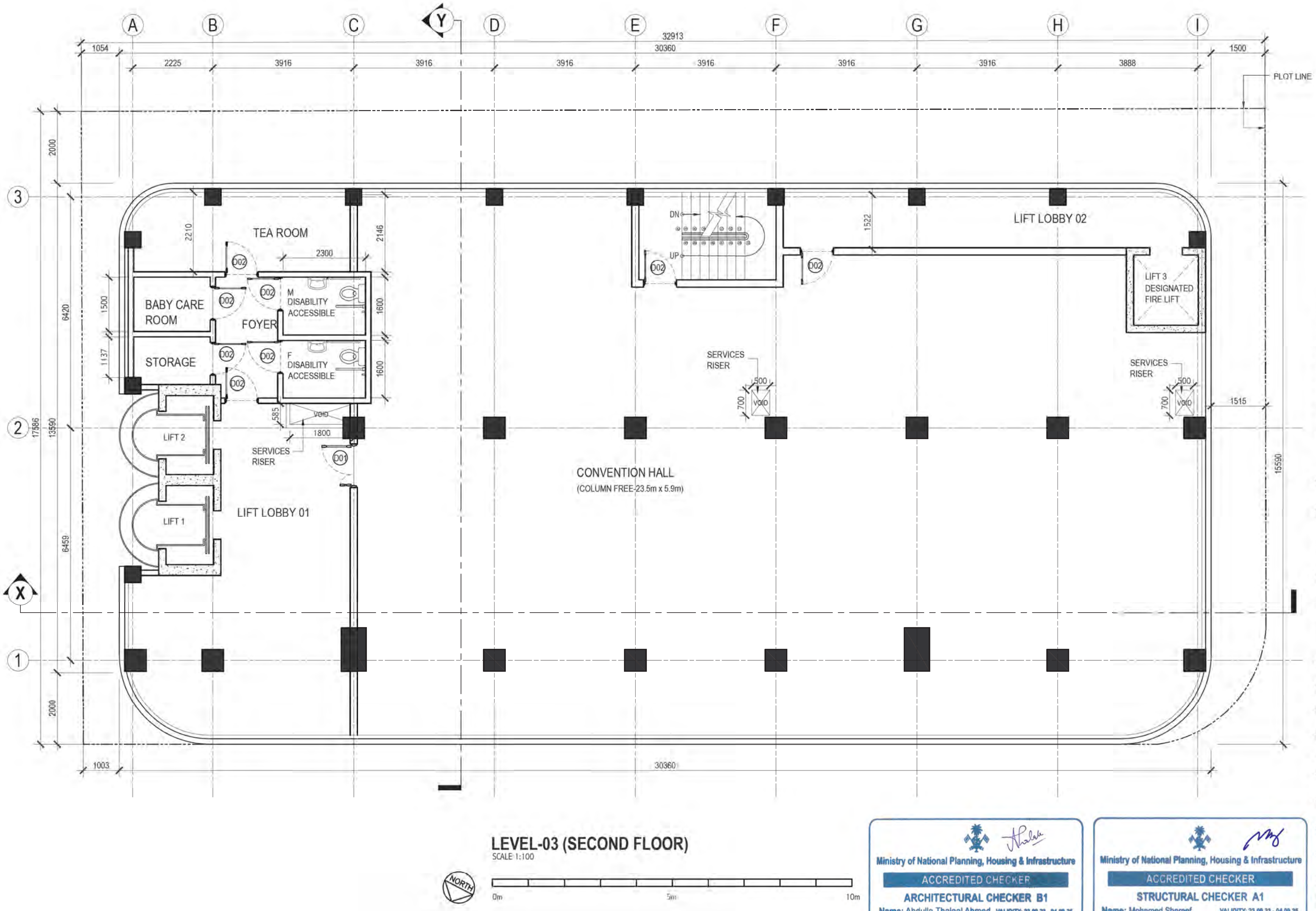
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site

GENERAL NOTES



LEVEL-03 (SECOND FLOOR)

SCALE 1:100

APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LEVEL - 03
(SECOND FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By : **LAESHA**
Date : **NOVEMBER 2023**
Checked By : **THALAAL**

Drawing Number :
11-107

Revision Number :
R02

File Name :
306-11-107R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

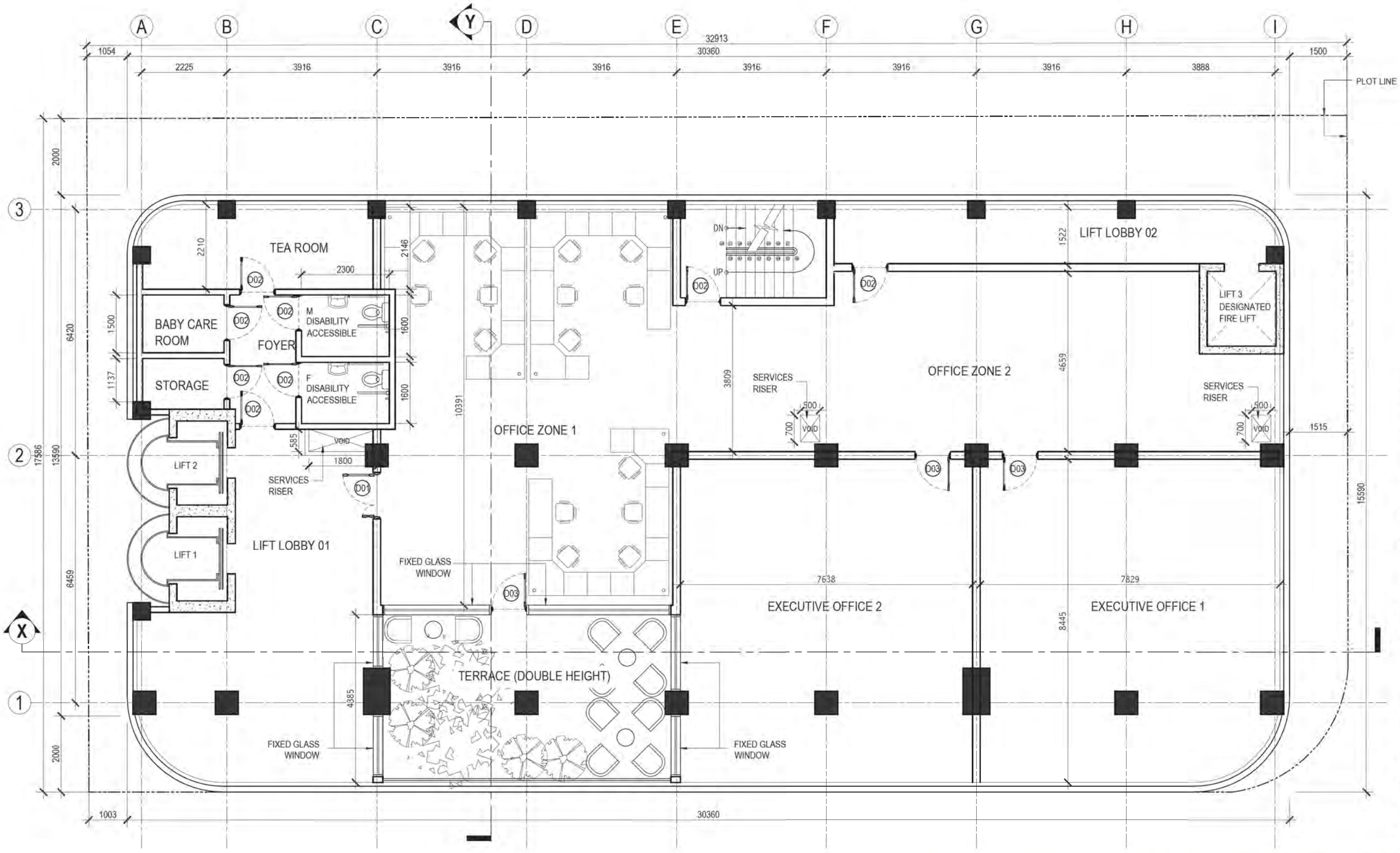
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

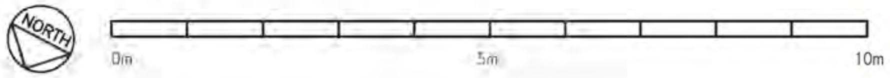
All dimensions to be checked on site

GENERAL NOTES



LEVEL-04 (THIRD FLOOR)

SCALE 1:100



APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LEVEL - 04
(THIRD FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA

Date :
NOVEMBER 2023

Checked By :
THALAAL

Drawing Number :
11-108

Revision Number :
R02

File Name :
306-11-108R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

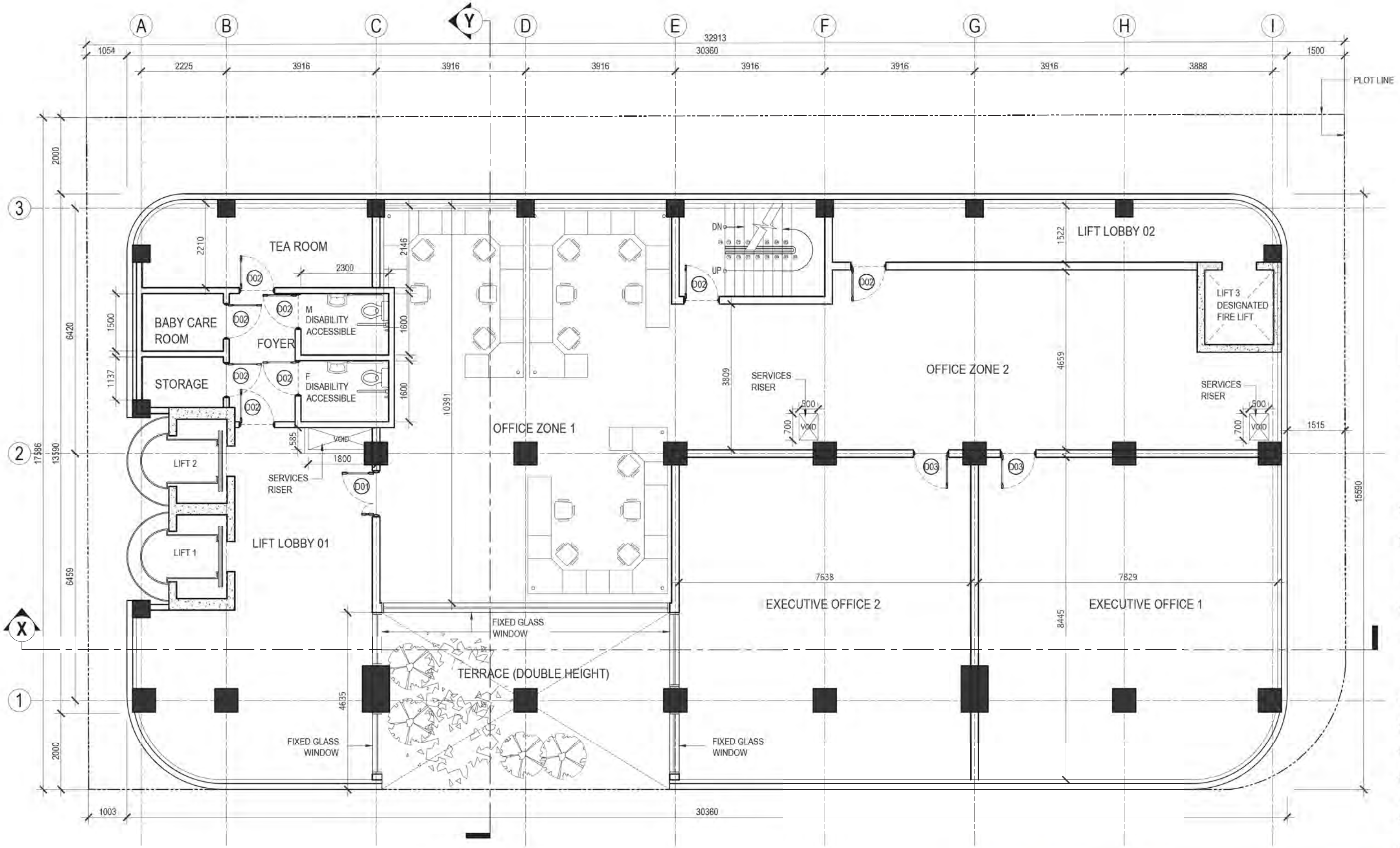
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



LEVEL-05 (FOURTH FLOOR)
SCALE 1:100

NORTH

0m 5m 10m

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LEVEL - 05
(FOURTH FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-109

Revision Number :
R02

File Name :
306-11-109R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

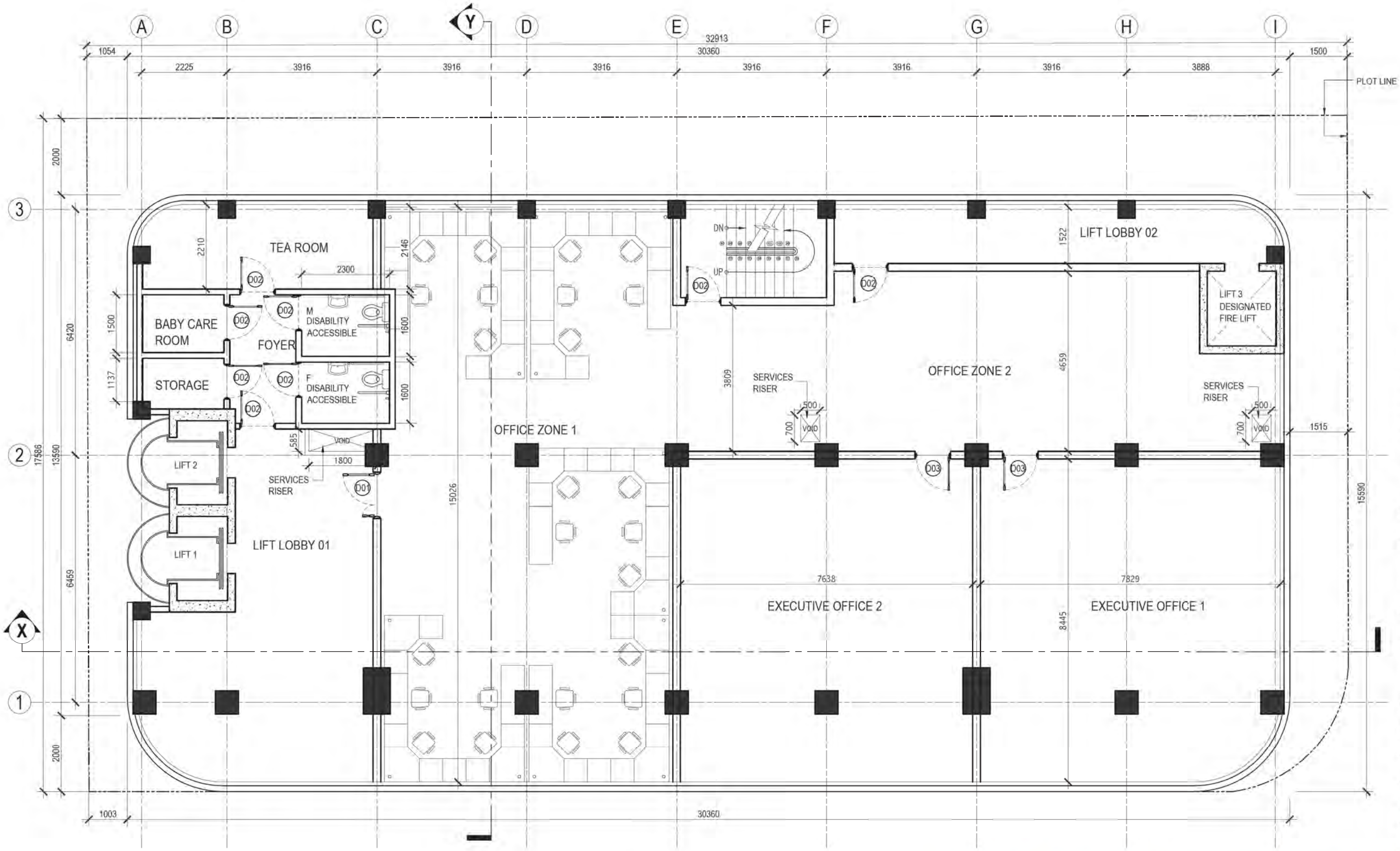
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site

GENERAL NOTES



LEVEL-06 (FIFTH FLOOR)

SCALE 1:100

APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LEVEL - 06
(FIFTH FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-110

Revision Number :
R02

File Name :
306-11-110R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed **VALIDITY: 23.09.23 - 04.09.25**
Accredited No: BPR2023022B1 **B1-2023-022-001**

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef **VALIDITY: 23.09.23 - 04.09.25**
Accredited No: BPR2023010A1 **A1-2023-010-001**

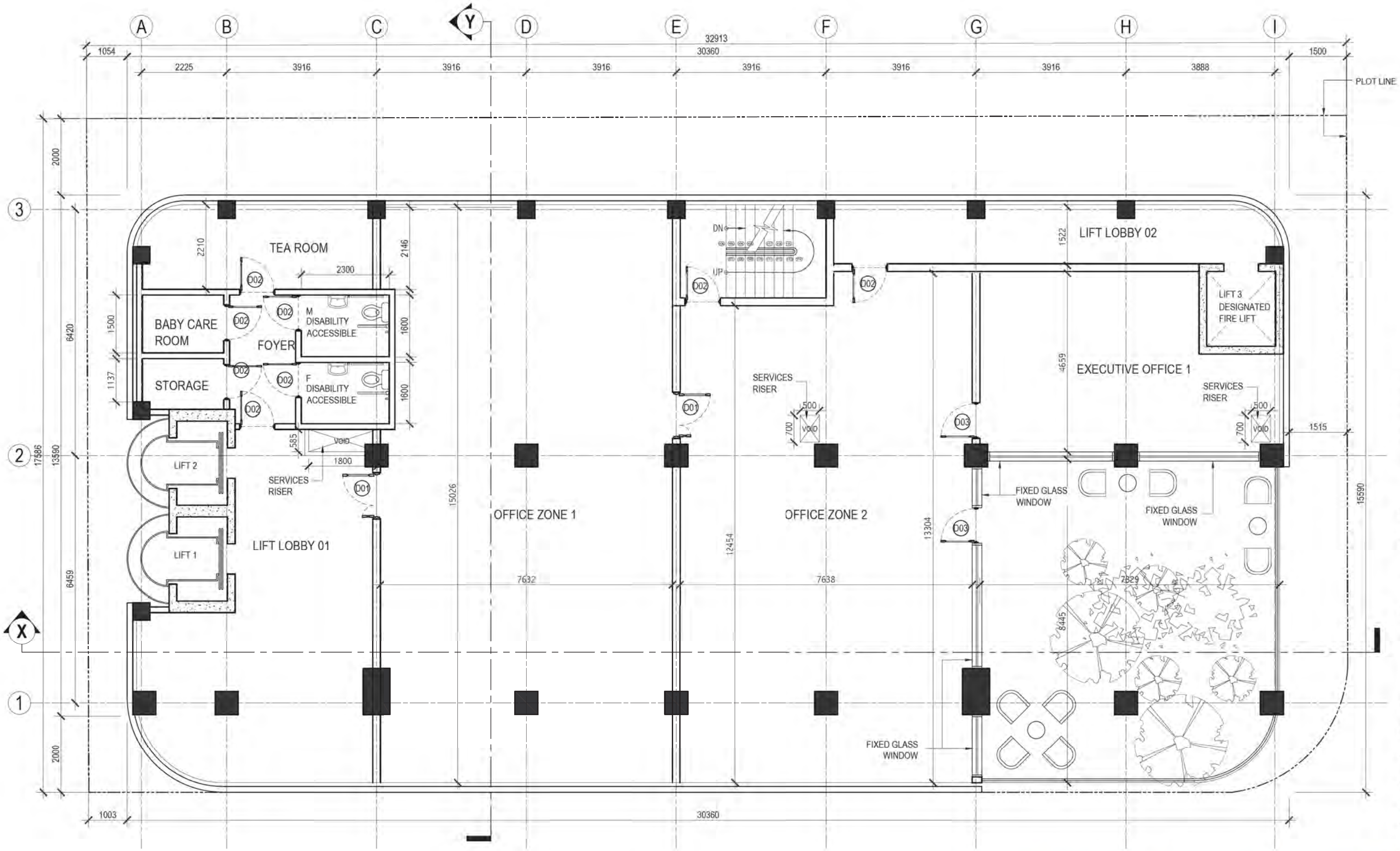
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

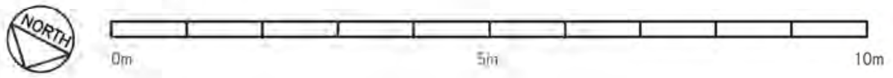
All dimensions to be checked on site

GENERAL NOTES



LEVEL-07 (SIXTH FLOOR)

SCALE 1:100



Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LEVEL - 07 (SIXTH FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-111

Revision Number :
R02

File Name :
306-11-111R02.dwg

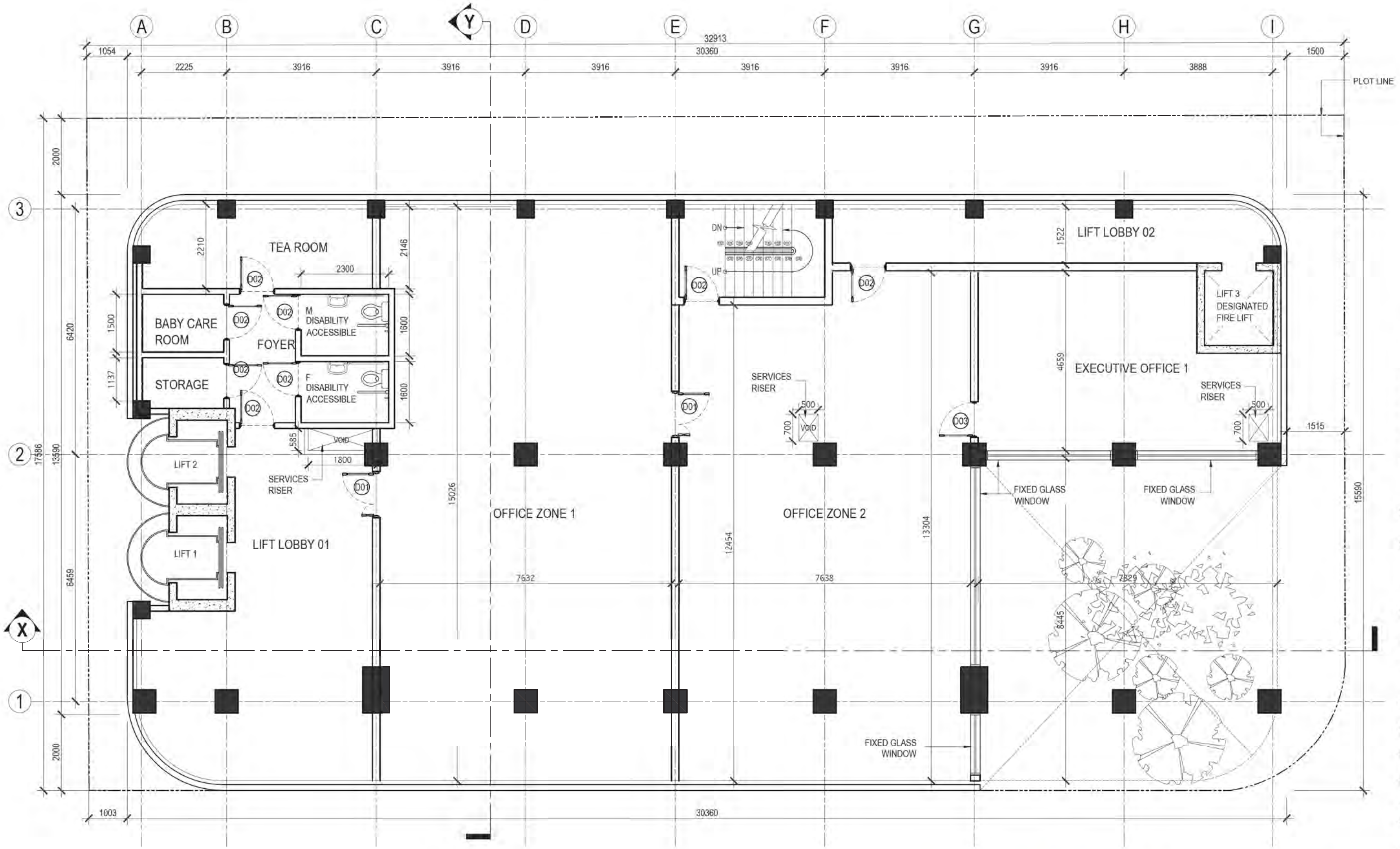
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

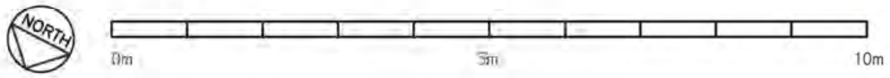
All dimensions to be checked on site

GENERAL NOTES



LEVEL-08 (SEVENTH FLOOR)

SCALE 1:100



APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LEVEL - 08 (SEVENTH FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA

Date :
NOVEMBER 2023

Checked By :
THALAAL

Drawing Number :
11-112

Revision Number :
R02

File Name :
306-11-112R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

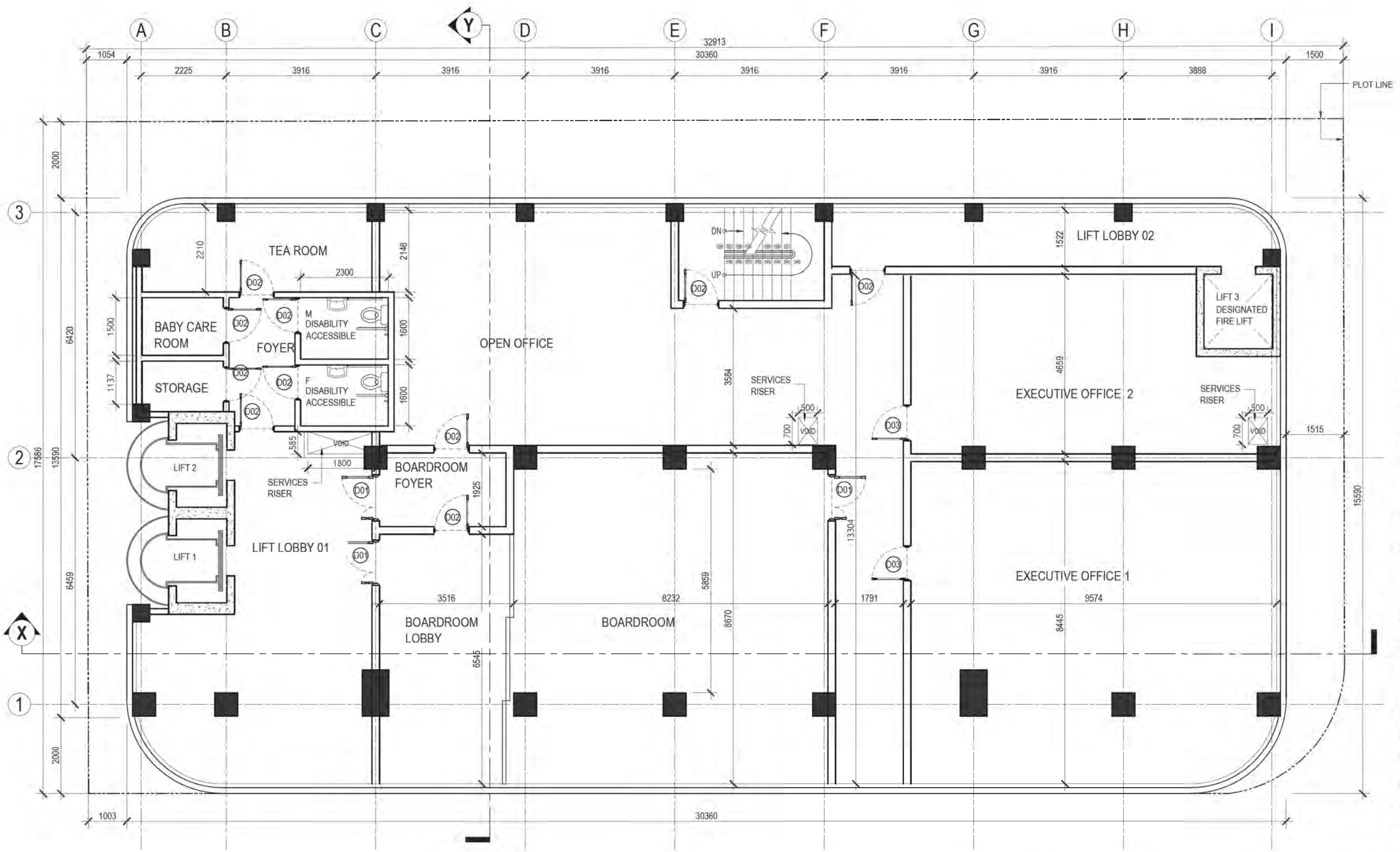
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

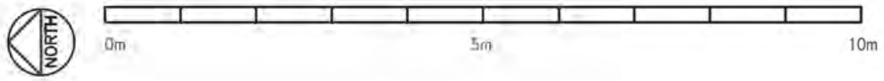
All dimensions to be checked on site

GENERAL NOTES



LEVEL-09 (EIGHTH FLOOR)

SCALE 1:100



APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LEVEL - 09
(EIGHTH FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-113

Revision Number :
R02

File Name :
306-11-113R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed **VALIDITY: 23.09.23 - 04.09.25**
Accredited No: BPR2023022B1 **B1-2023-022-001**

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef **VALIDITY: 23.09.23 - 04.09.25**
Accredited No: BPR2023010A1 **A1-2023-010-001**

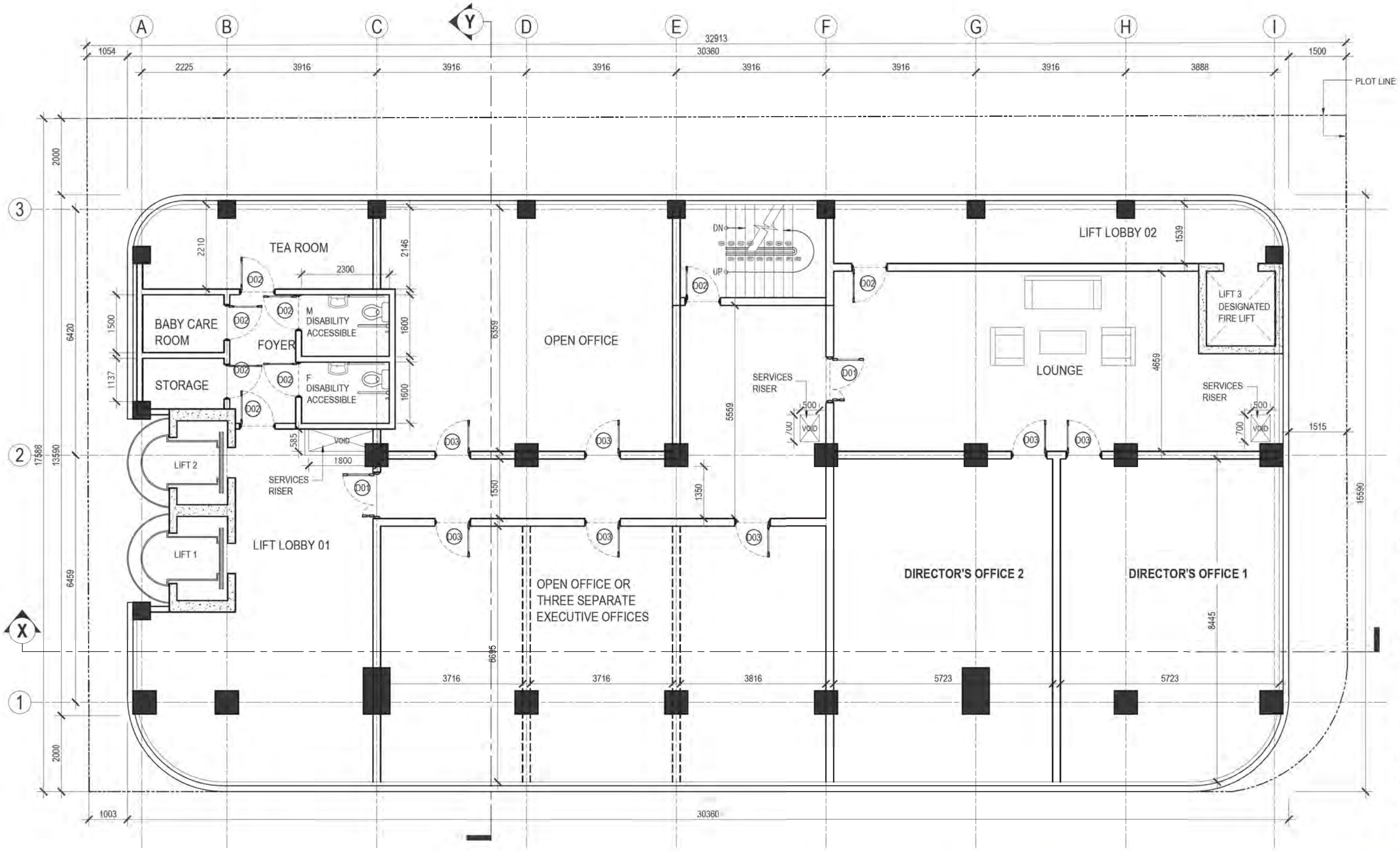
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site

GENERAL NOTES



LEVEL-10 (NINTH FLOOR)

SCALE 1:100

0m 5m 10m

NORTH

APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LEVEL - 10 (NINTH FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-114

Revision Number :
R02

File Name :
306-11-114R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

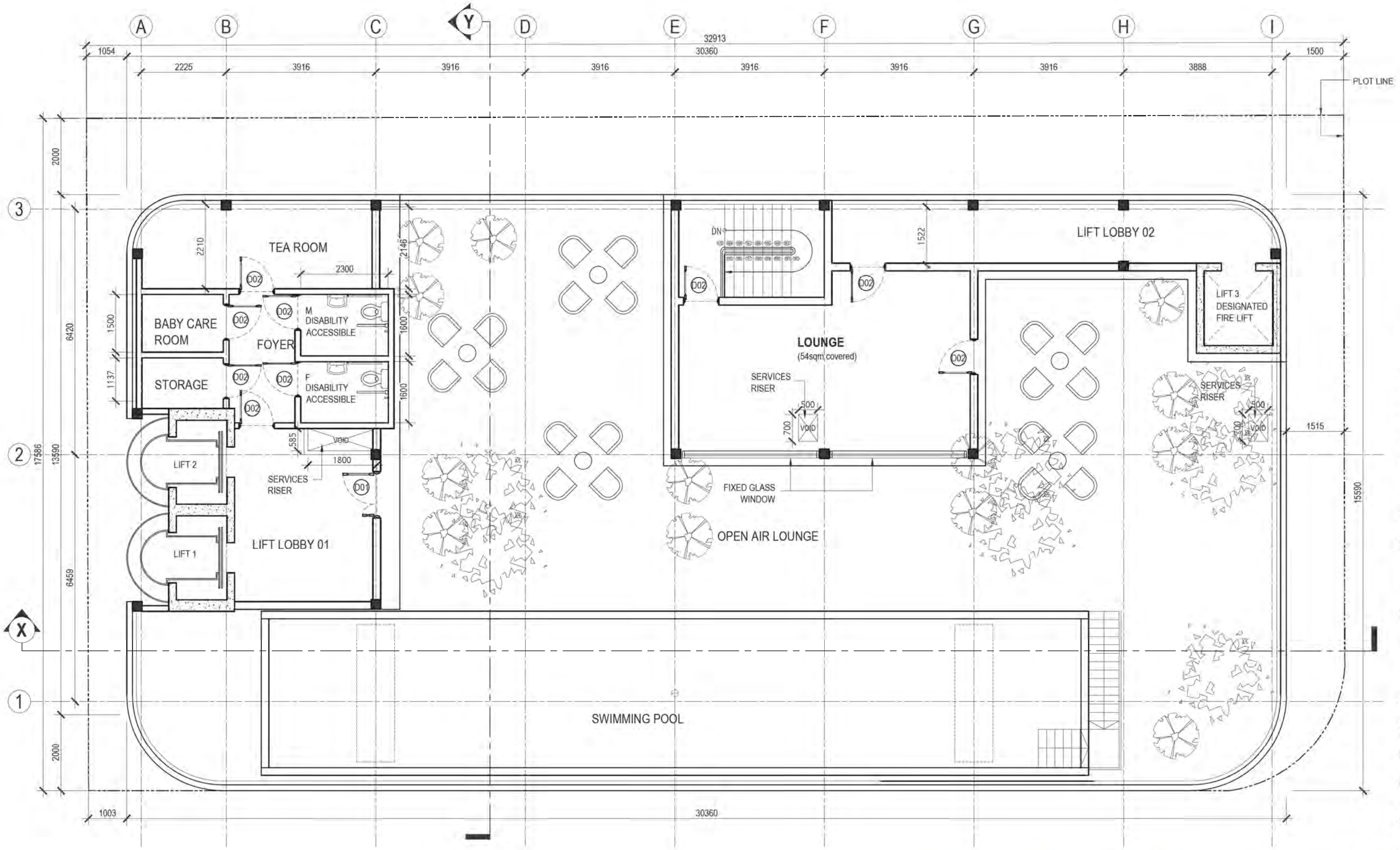
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



TERRACE LEVEL-T1
SCALE 1:100

NORTH
0m
5m
10m

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
TERRACE LEVEL - T1 (TERRACE FLOOR PLAN)

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-115

Revision Number :
R02

File Name :
306-11-115R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

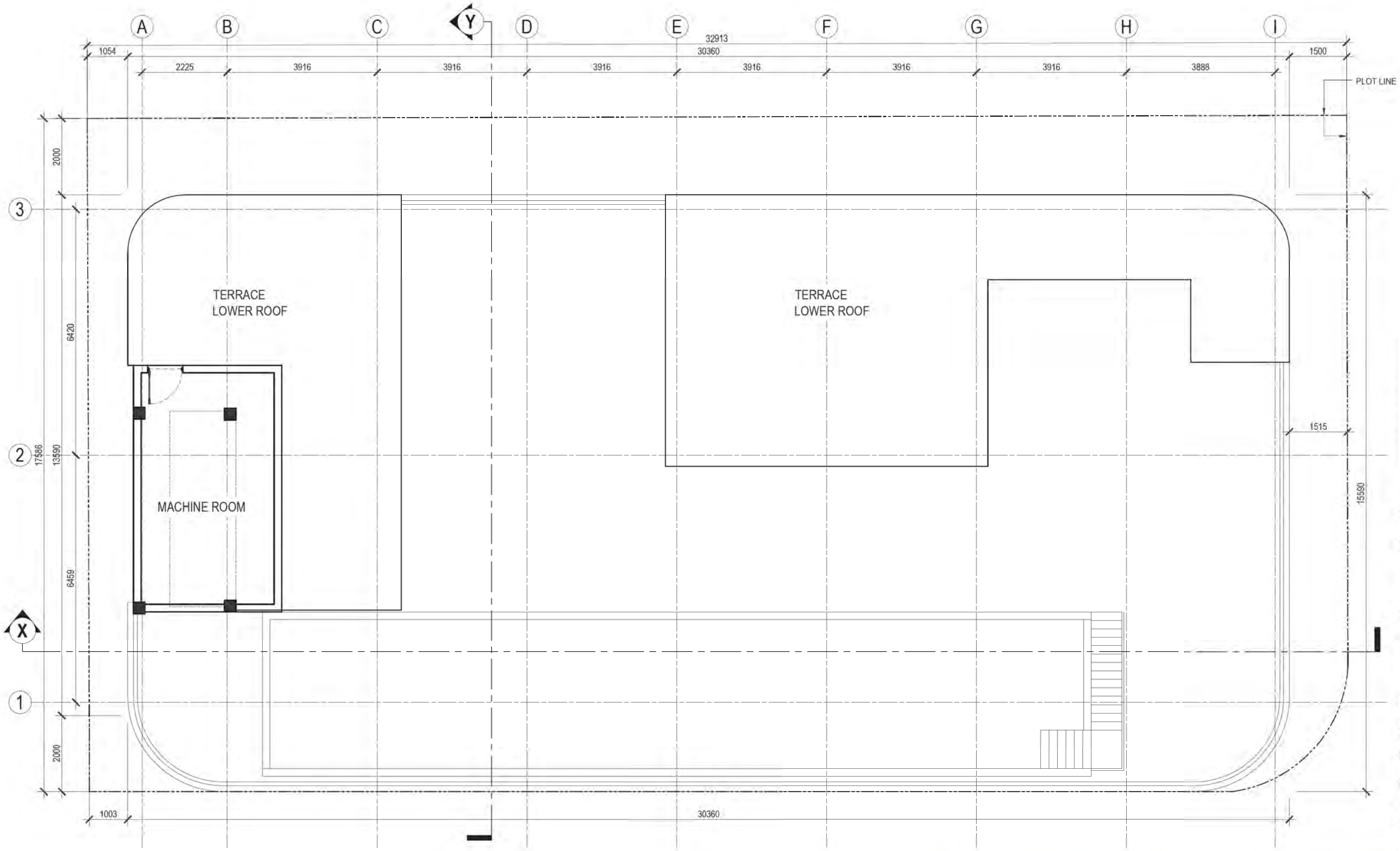
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

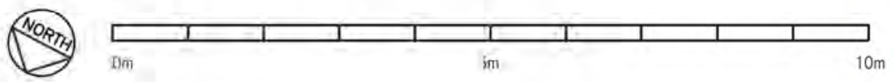
All dimensions to be checked on site

GENERAL NOTES



TERRACE ROOF LEVEL -RF1

SCALE 1:100



APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title
TERRACE ROOF LEVEL RF1

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By : **LAESHA**
Date : **NOVEMBER 2023**
Checked By : **THALAAL**

Drawing Number : **11-116**

Revision Number : **R02**

File Name :
306-11-116R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

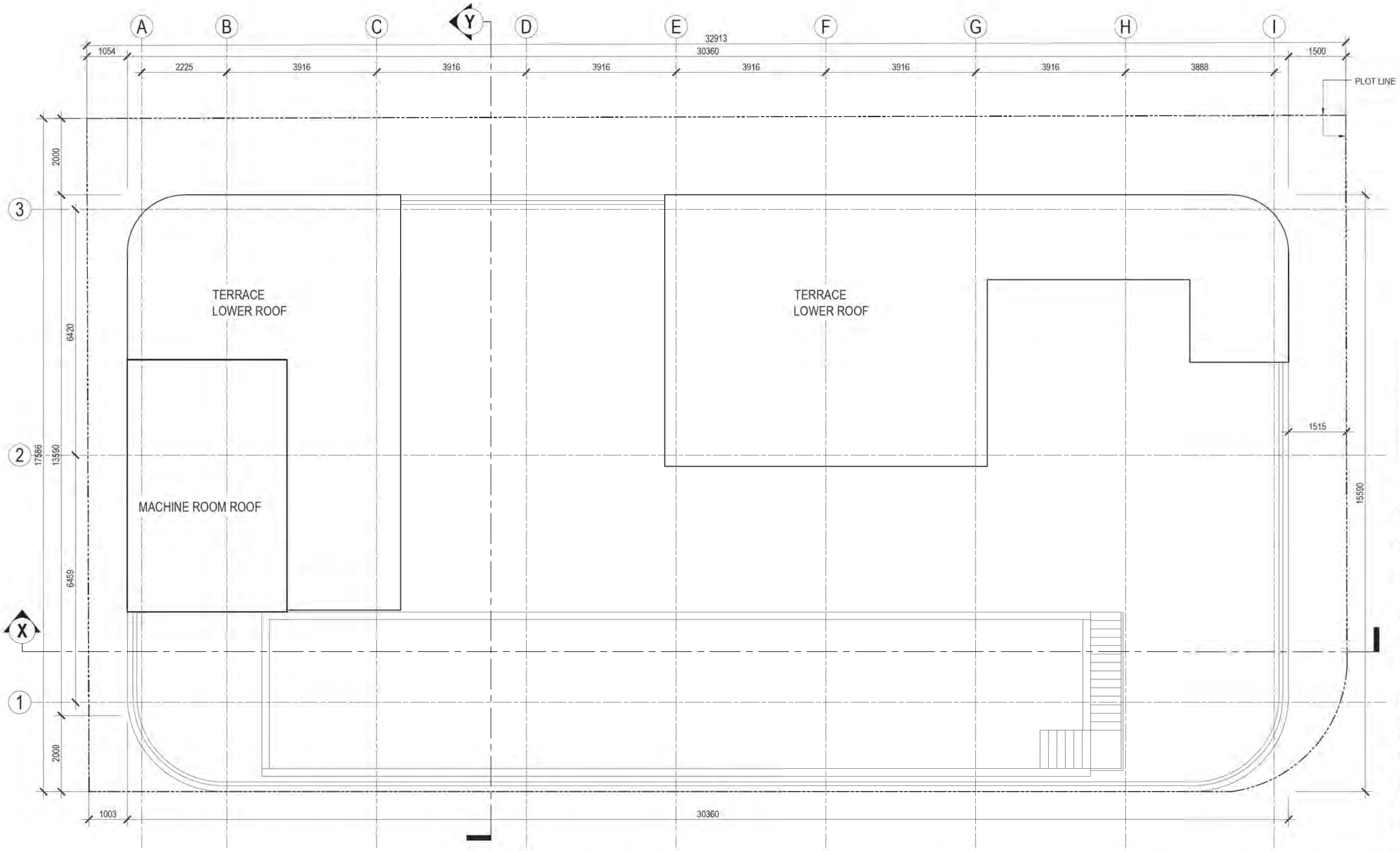
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

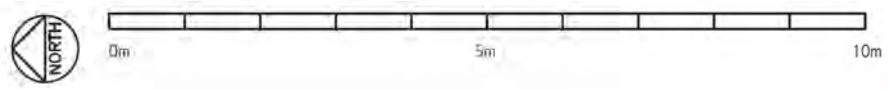
All dimensions to be checked on site

GENERAL NOTES



MACHINE ROOM ROOF LEVEL -RF2

SCALE 1:100



Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed **VALIDITY: 23.09.23 - 04.09.25**
Accredited No: BPR2023022B1 **B1-2023-022-001**

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef **VALIDITY: 23.09.23 - 04.09.25**
Accredited No: BPR2023010A1 **A1-2023-010-001**

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
MACHINE ROOM ROOF
LEVEL - RF2

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA

Date :
NOVEMBER 2023

Checked By :
THALAAL

Drawing Number :
11-117

Revision Number :
R02

File Name :
306-11-117R02.dwg

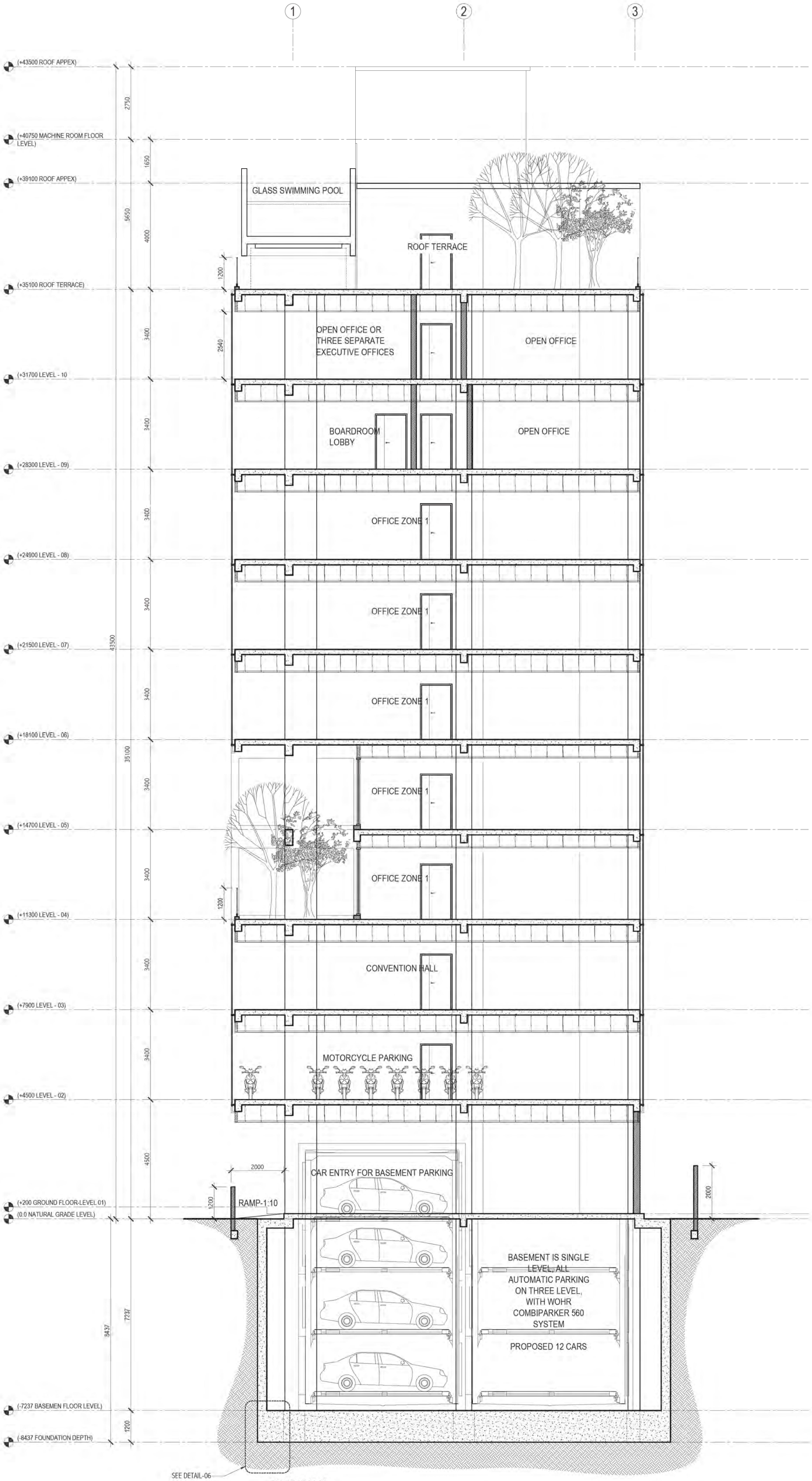
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



SECTION-Y
SCALE 1:100

APPROVED
HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL
R03	06-02-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
SECTION Y

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-201

Revision Number :
R03

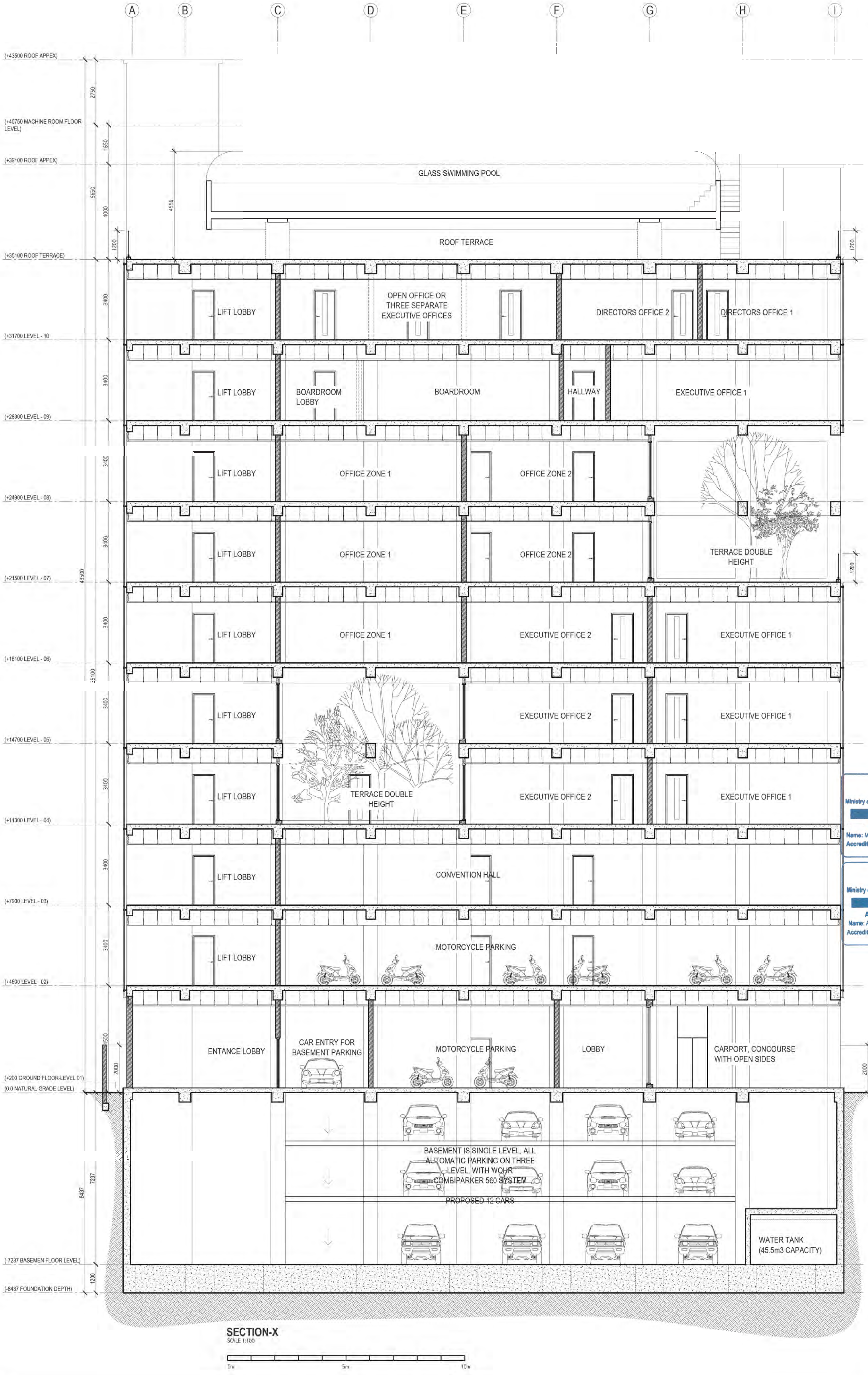
File Name :
306-11-201R03.dwg

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site.



SECTION-X

SCALE 1:100

GENERAL NOTES

APPROVED
HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL
R03	06-02-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
SECTION X

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-202

Revision Number :
R03

File Name :
306-11-202R03.dwg

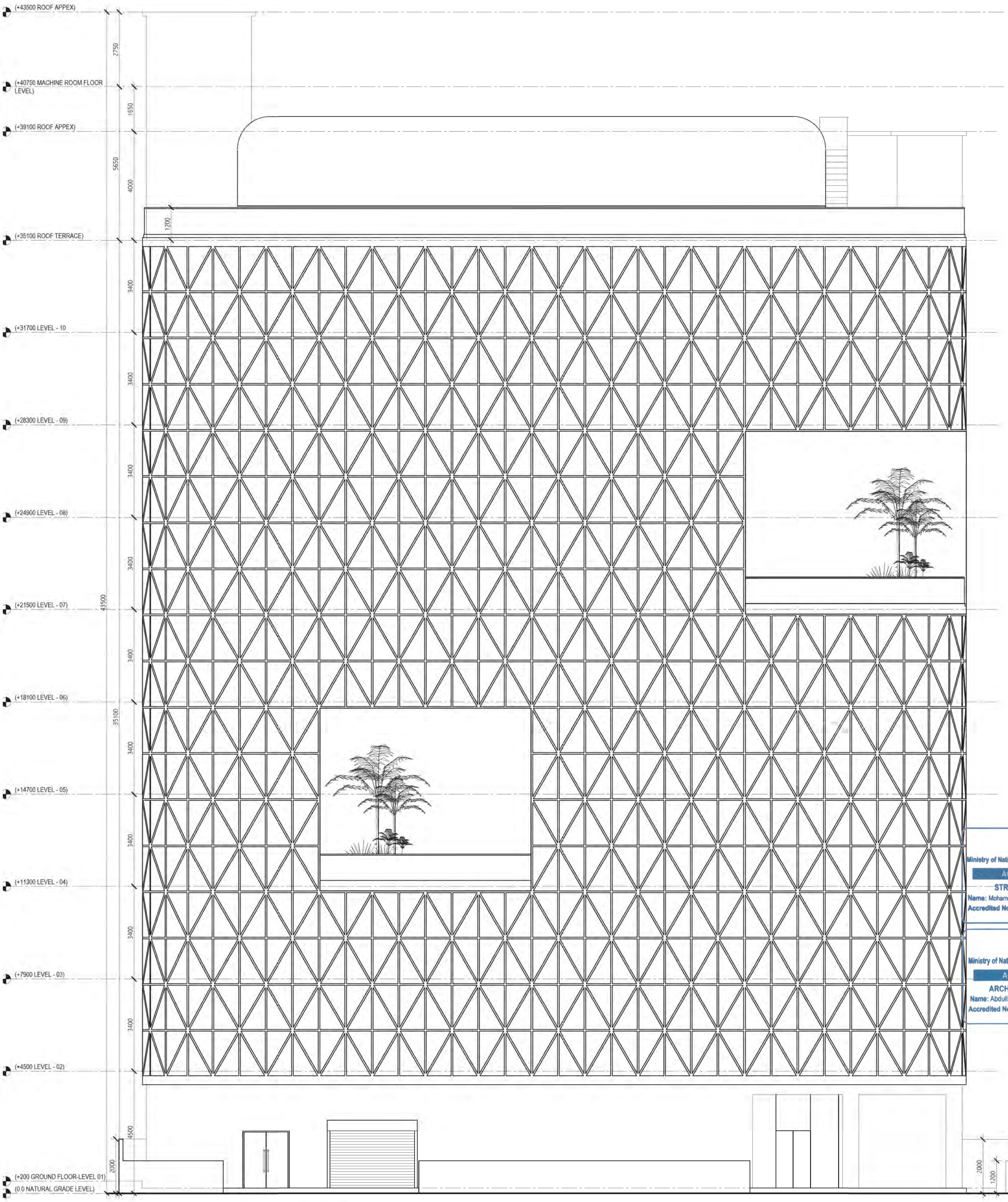
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site.

GENERAL NOTES



FRONT ELEVATION- E1
SCALE 1:100

0m 5m 10m

APPROVED
HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	06-02-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX
Drawing Title :
FRONT ELEVATION E1

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Checked By :
THALAAL
Date :
NOVEMBER 2023

Drawing Number :
11-301

Revision Number :
R02

File Name :
306-11-301R02.dwg

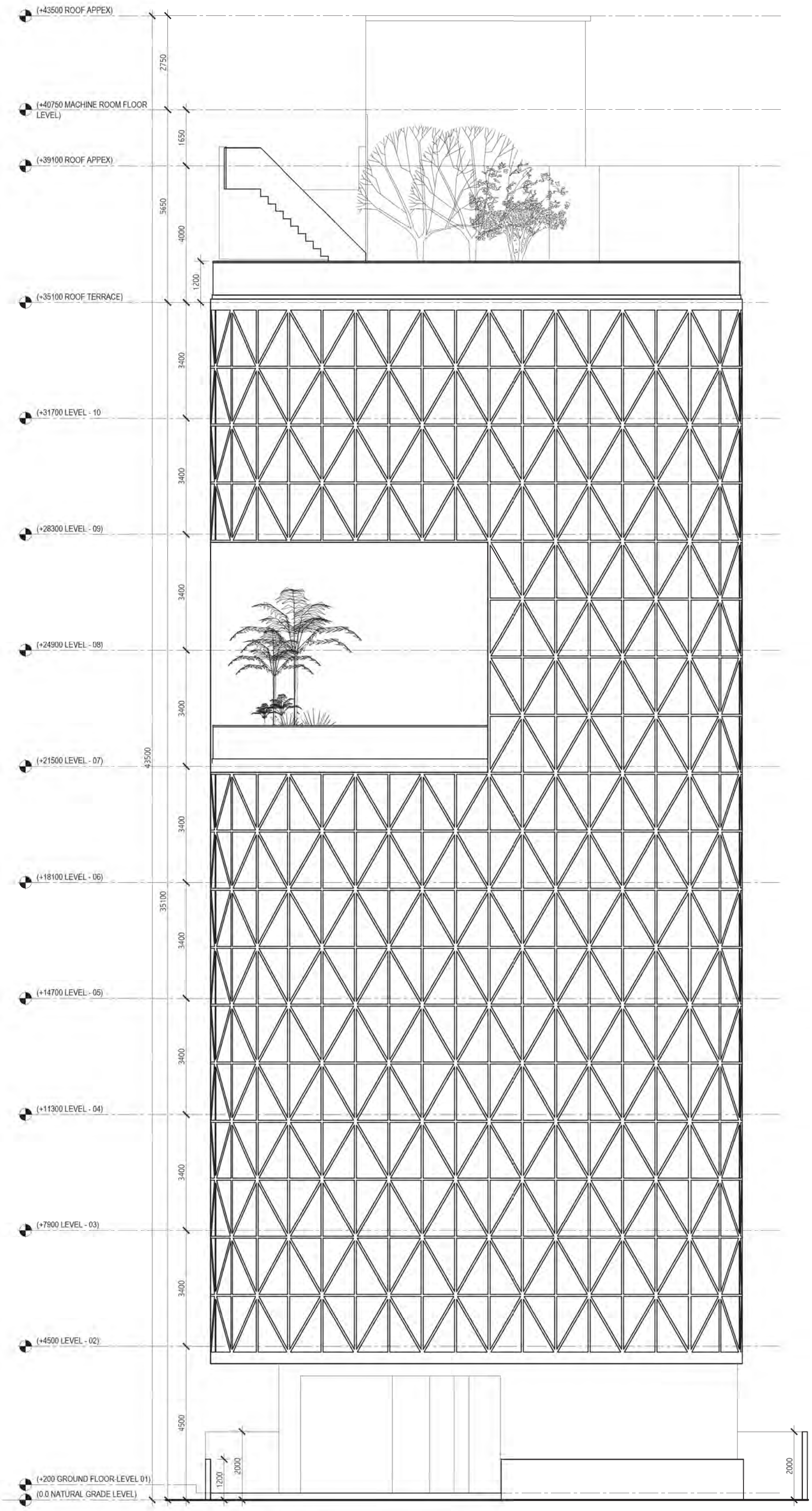
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

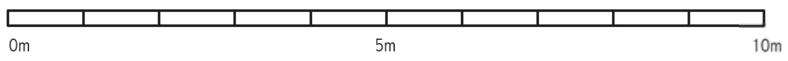
GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site.

GENERAL NOTES



SIDE ELEVATION-E2
SCALE 1:100



APPROVED
HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL
R02	17-01-24	LAESHA	THALAAL
R03	06-02-24	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
SIDE ELEVATION E2

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By : LAESHA
Date : NOVEMBER 2023
Checked By : THALAAL

Drawing Number :
11-302

Revision Number :
R03

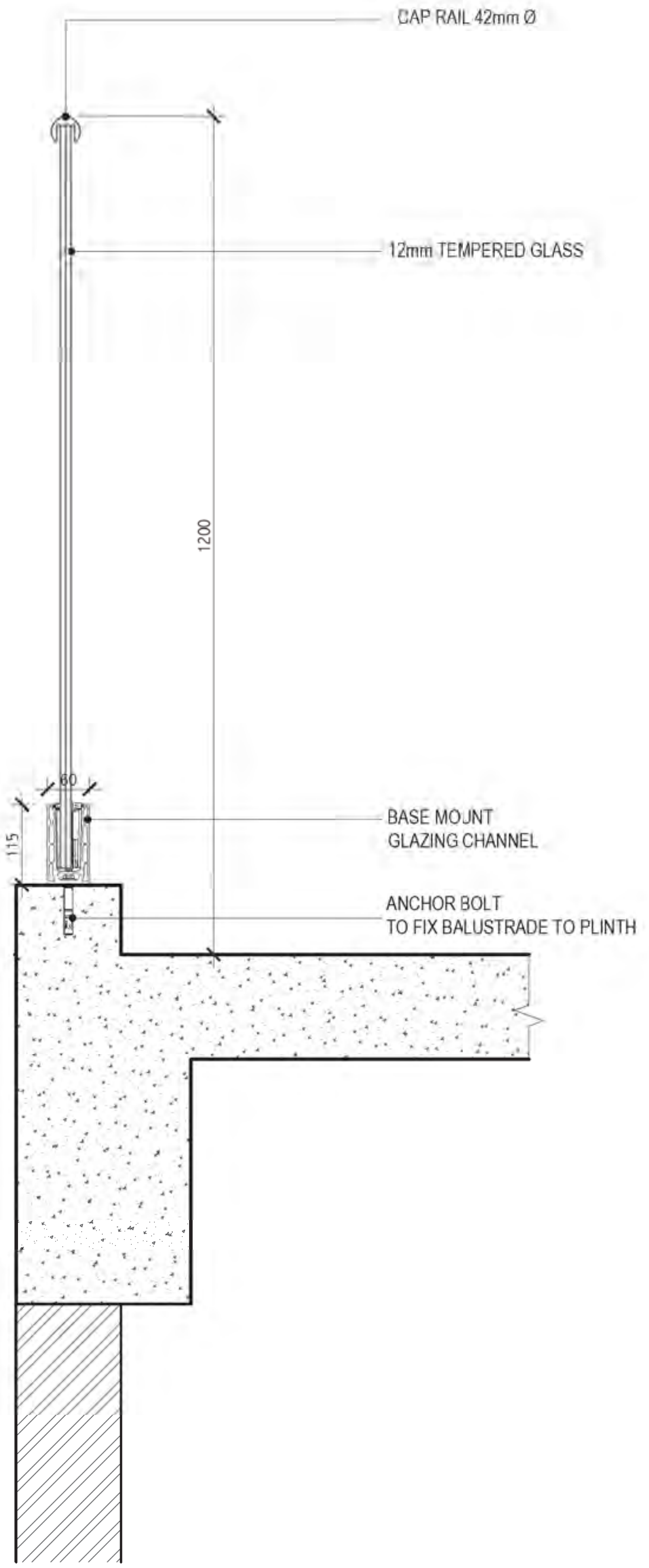
File Name :
306-11-302R03.dwg

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

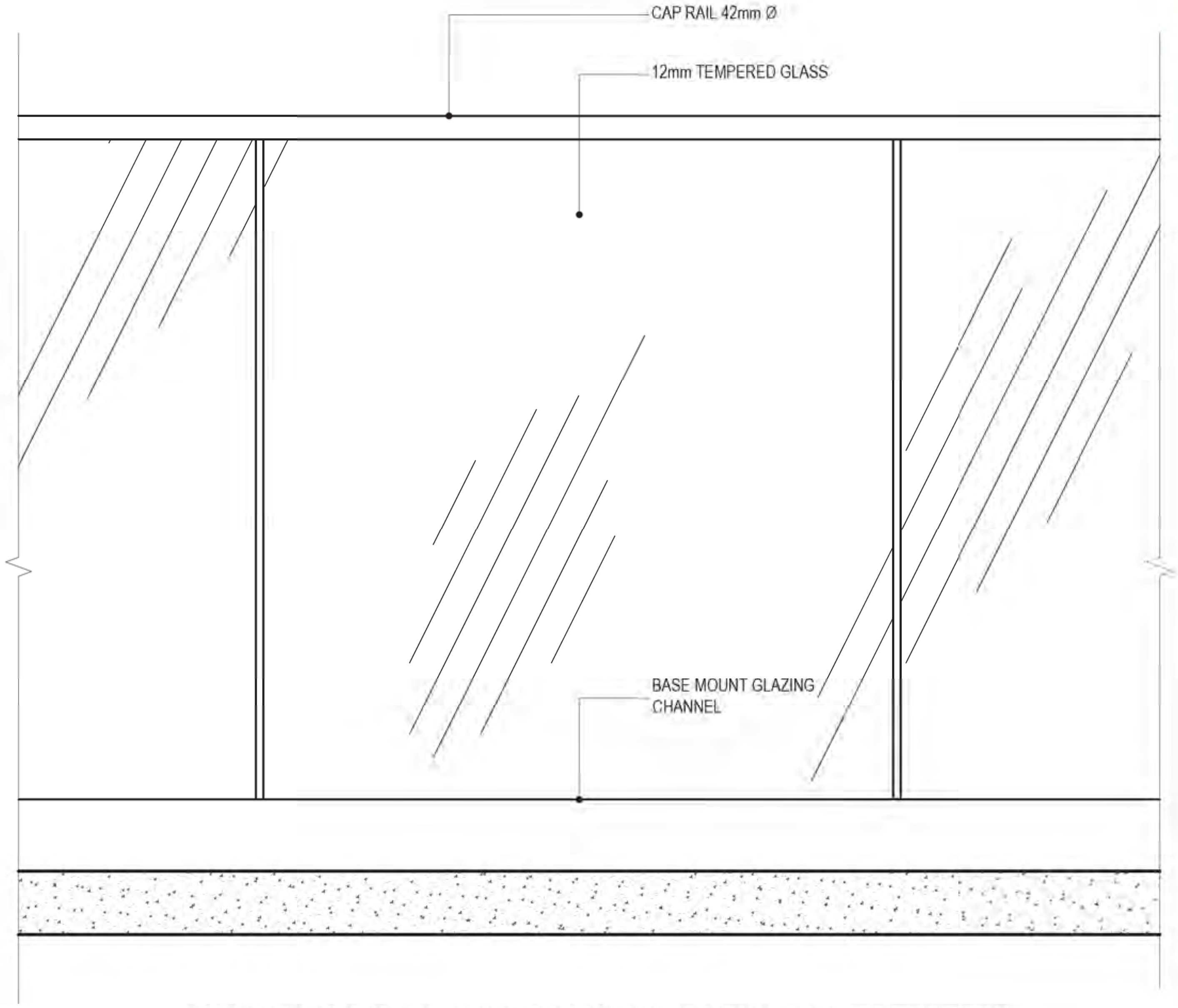
GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site.



CHANNEL MOUNT -FRAMELESS GLASS BALUSTRADE(SECTION)

SCALE 1:10



CHANNEL MOUNT -FRAMELESS GLASS BALUSTRADE(ELEVATION)

SCALE 1:10

GENERAL NOTES

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
DETAIL 02
BALCONY RAILING DETAIL

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-502

Revision Number :
R01

File Name :
306-11-502R01.dwg

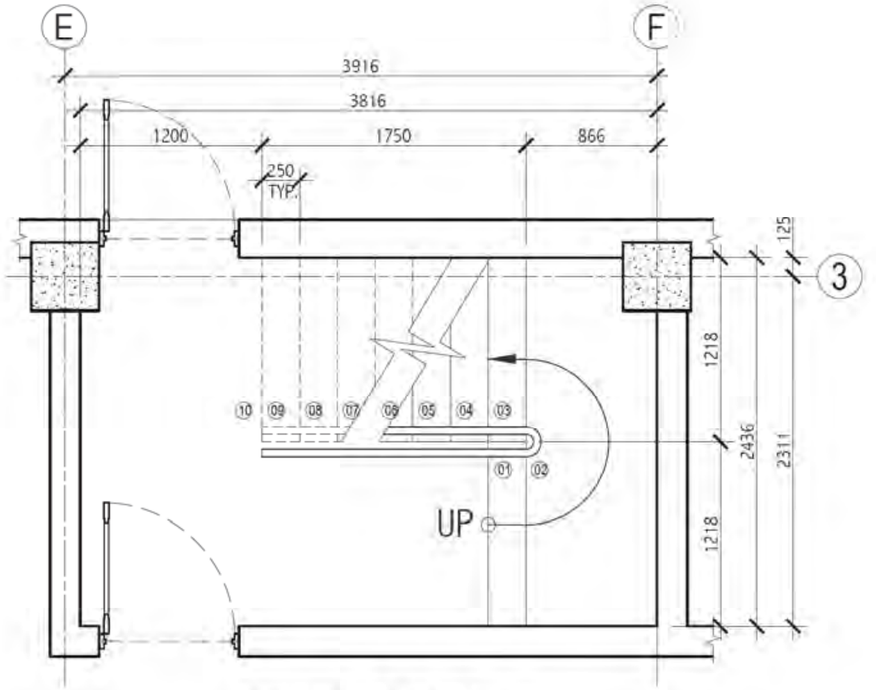
APPROVED
HOUSING DEVELOPMENT CORPORATION

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

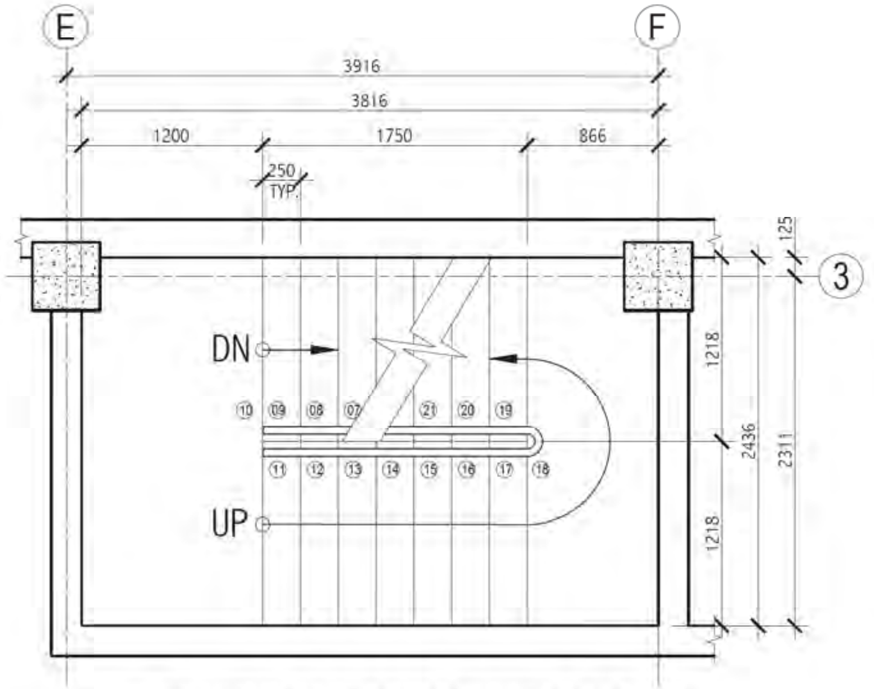
Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

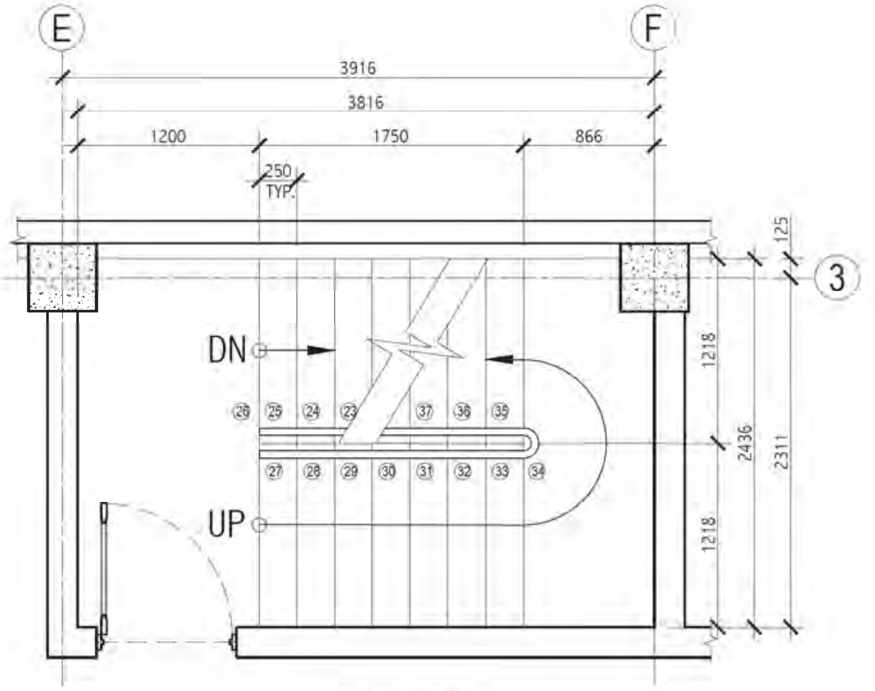
All dimensions to be checked on site



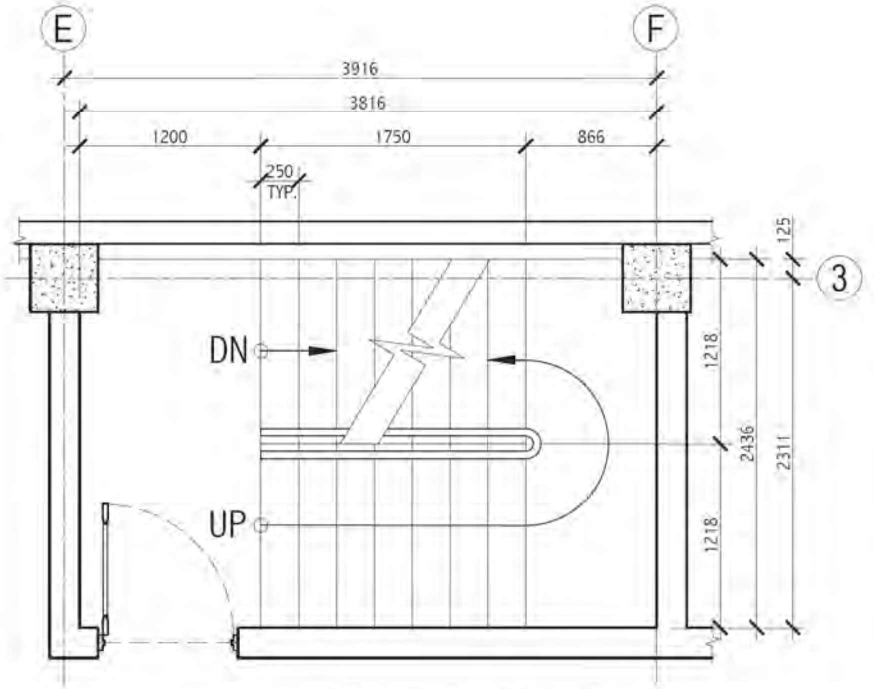
GROUND FLOOR



GROUND FLOOR TO FIRST FLOOR



FIRST FLOOR



FIRST FLOOR TO TERRACE

MAIN STAIR DETAIL FLOOR PLAN

SCALE 1:50

GENERAL NOTES

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title
MAIN STAIR PLAN

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By : LAESHA
Date : NOVEMBER 2023
Checked By : THALAAL

Drawing Number :
11-503

Revision Number :
R00

File Name :
306-11-503R00.dwg

APPROVED
HOUSING DEVELOPMENT CORPORATION

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

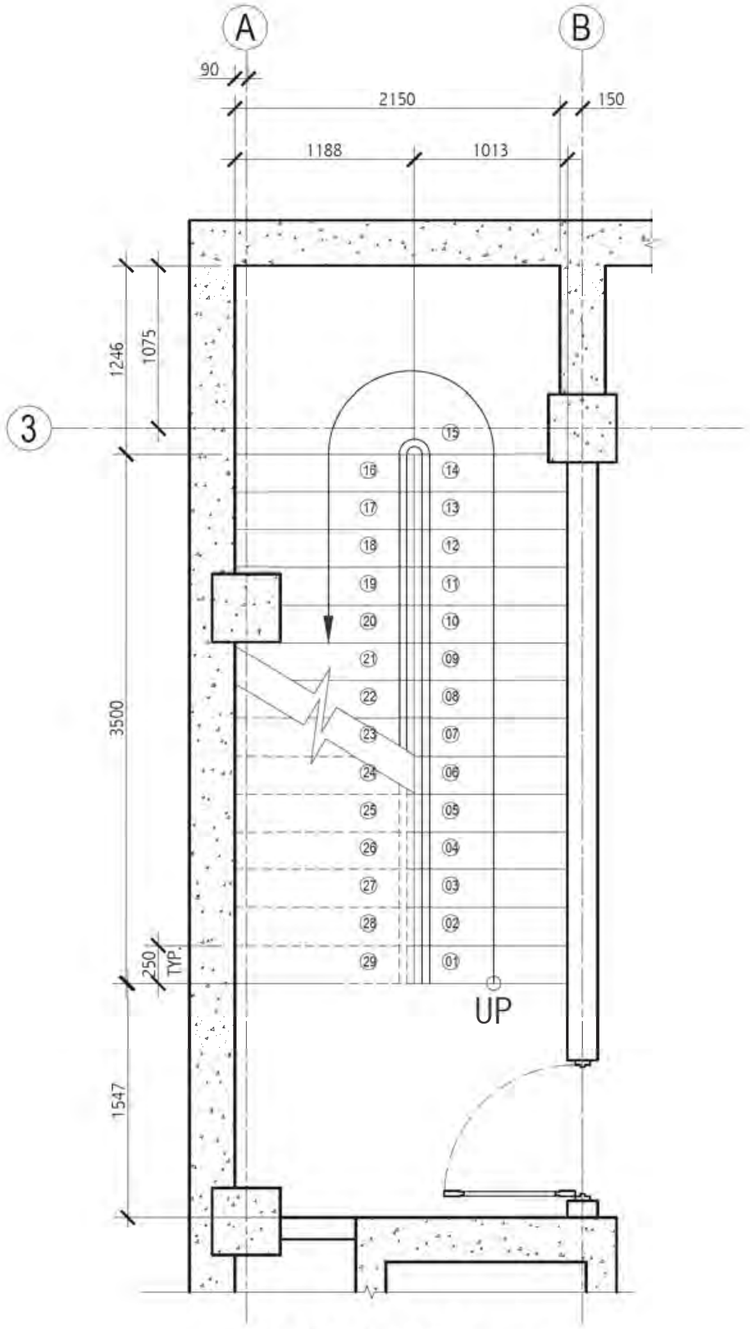
GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

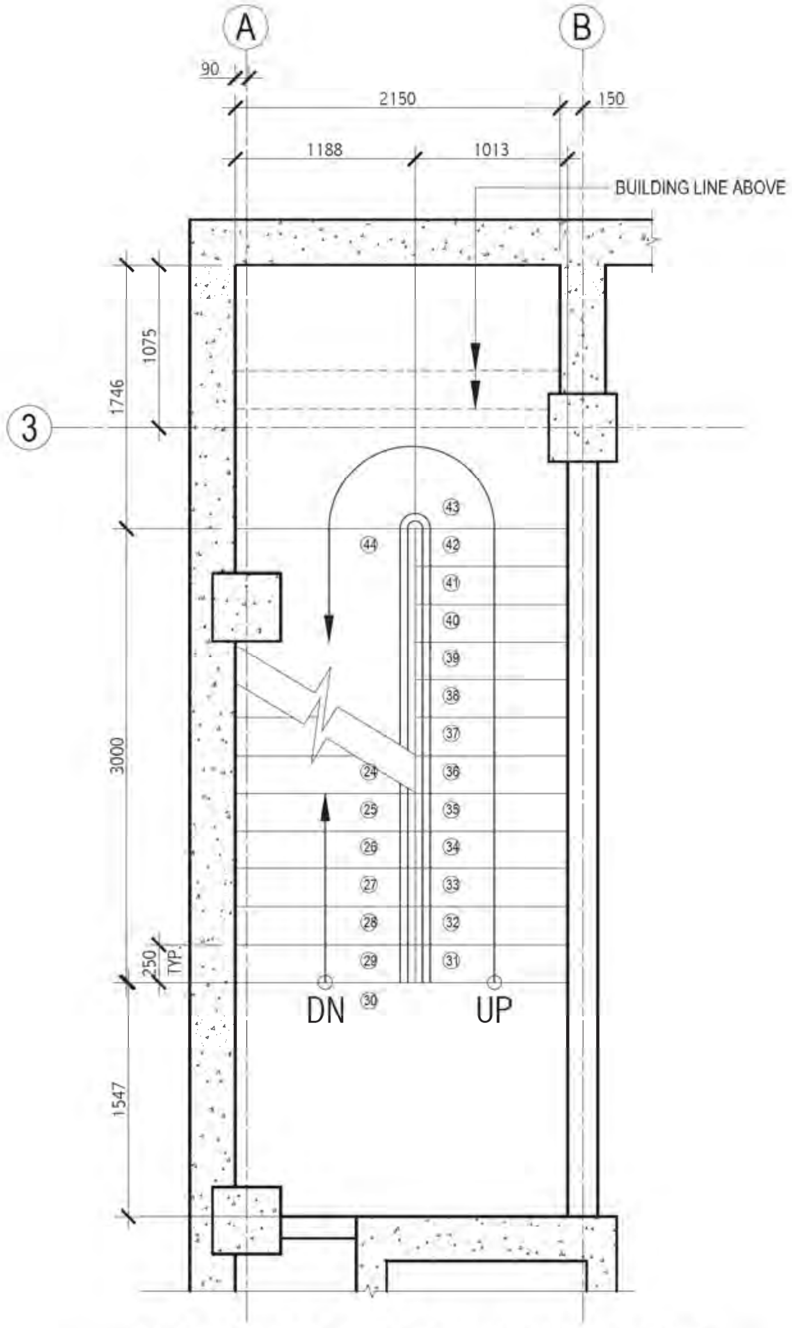
GENERAL NOTES

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

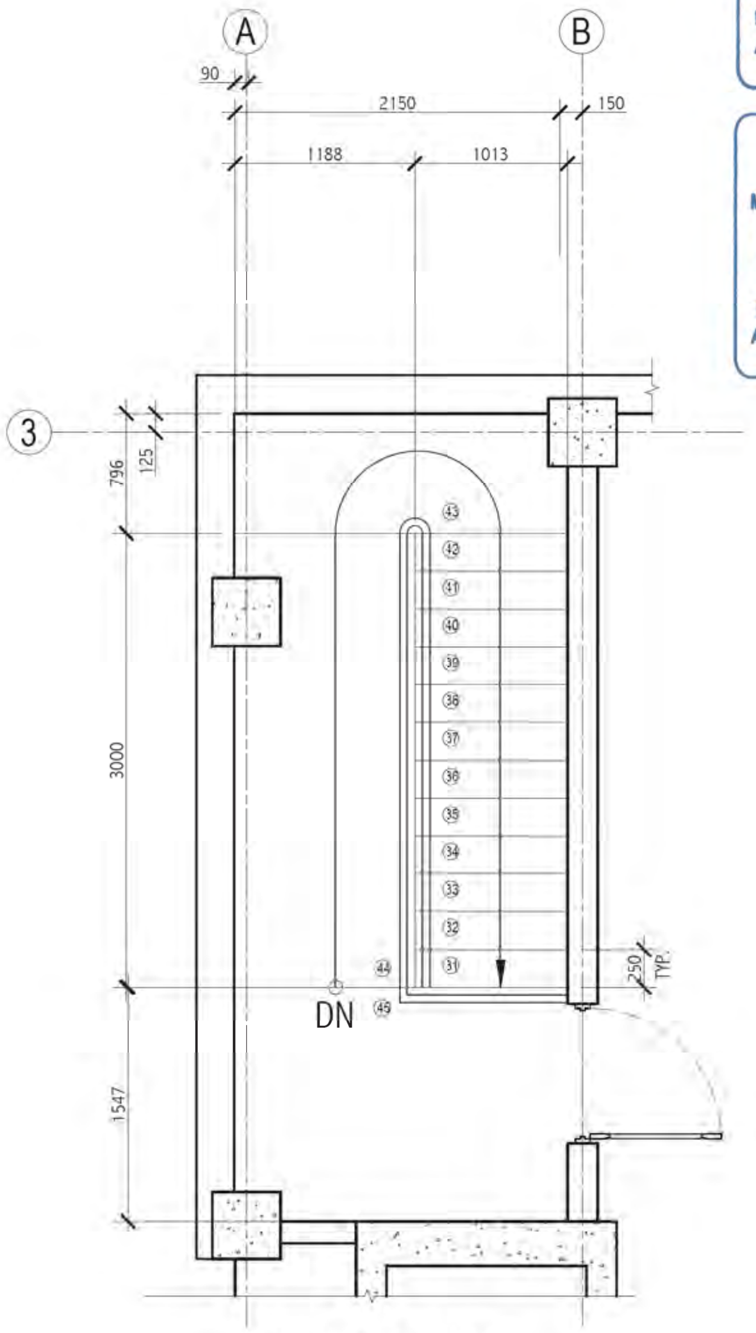
Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001



BASEMENT LEVEL



BASEMENT LEVEL TO GROUND FLOOR



GROUND FLOOR

BASEMENT STAIR DETAIL FLOOR PLAN

SCALE 1:50

Revision	Date	Drawn By	Checked By

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
BASEMENT STAIR PLAN

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA

Date :
NOVEMBER 2023

Checked By :
THALAAL

Drawing Number :
11-504

Revision Number :
R00

File Name :
306-11-504R00.dwg

APPROVED
HOUSING DEVELOPMENT CORPORATION

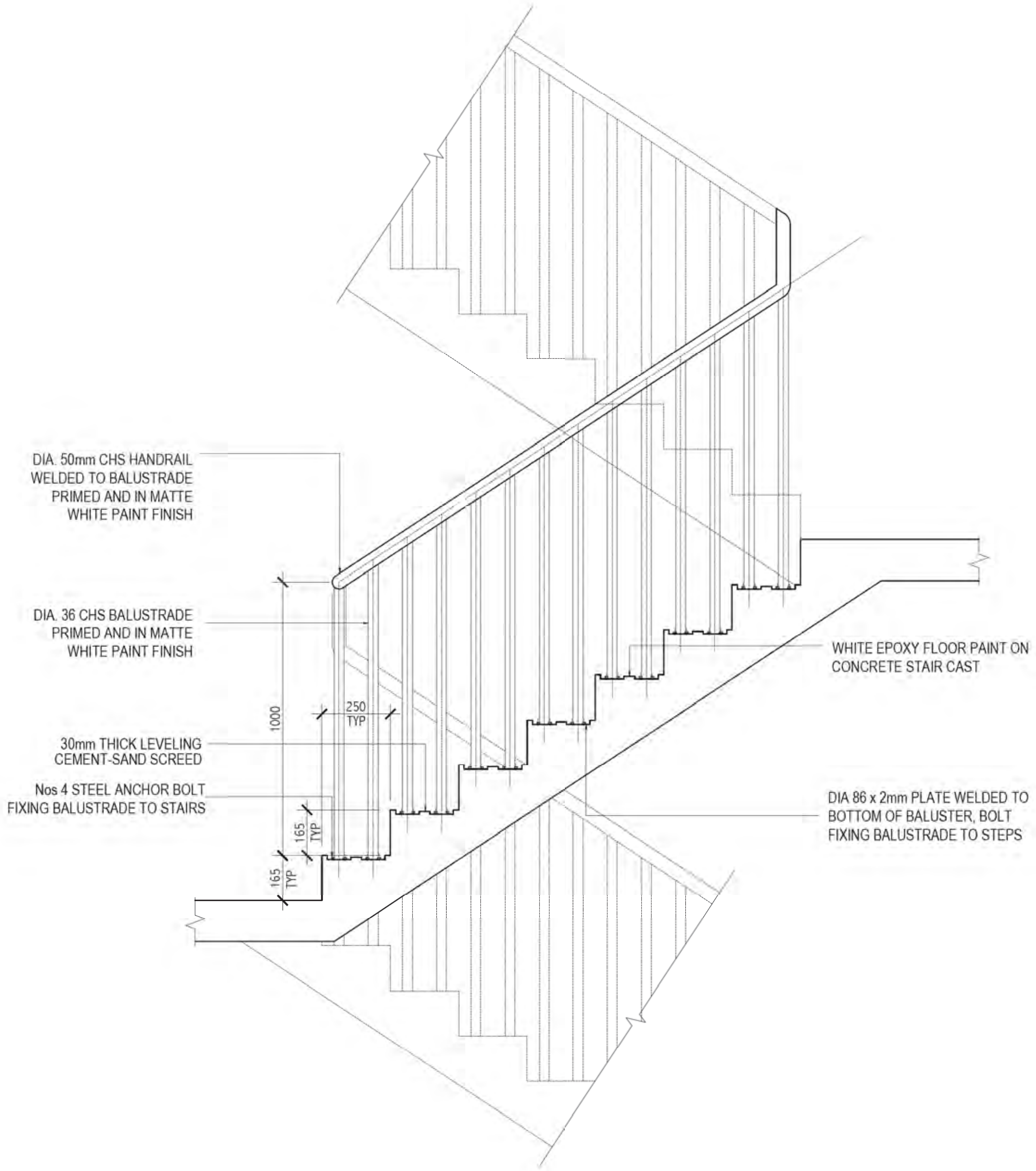
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

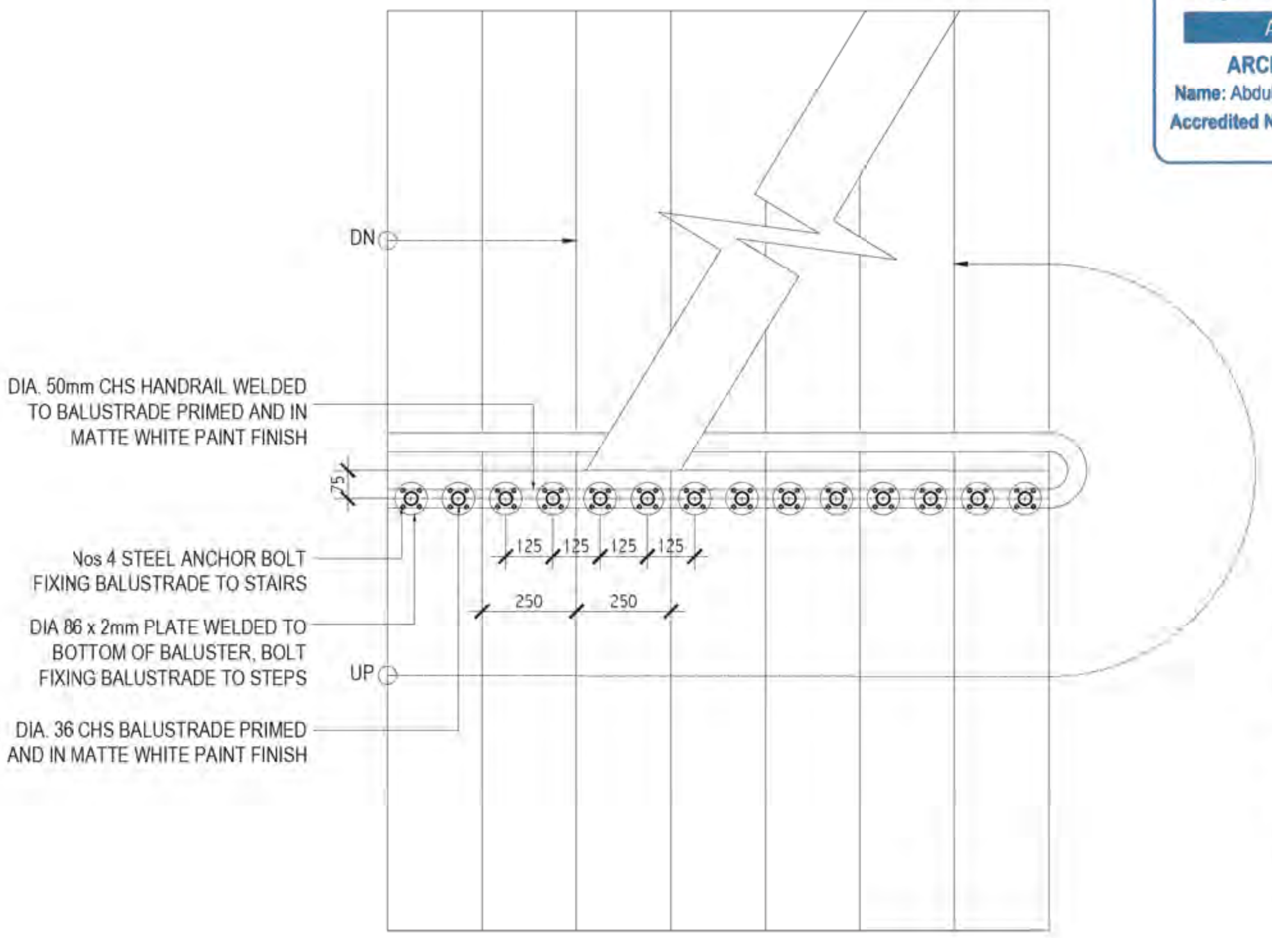
Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES





STAIR BALUSTRADE DETAILS
SCALE 1:20

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
TYPICAL STAIR
BALUSTRADE DETAILS

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-505

Revision Number :
R00

File Name :
306-11-505R00.dwg

APPROVED
HOUSING DEVELOPMENT CORPORATION

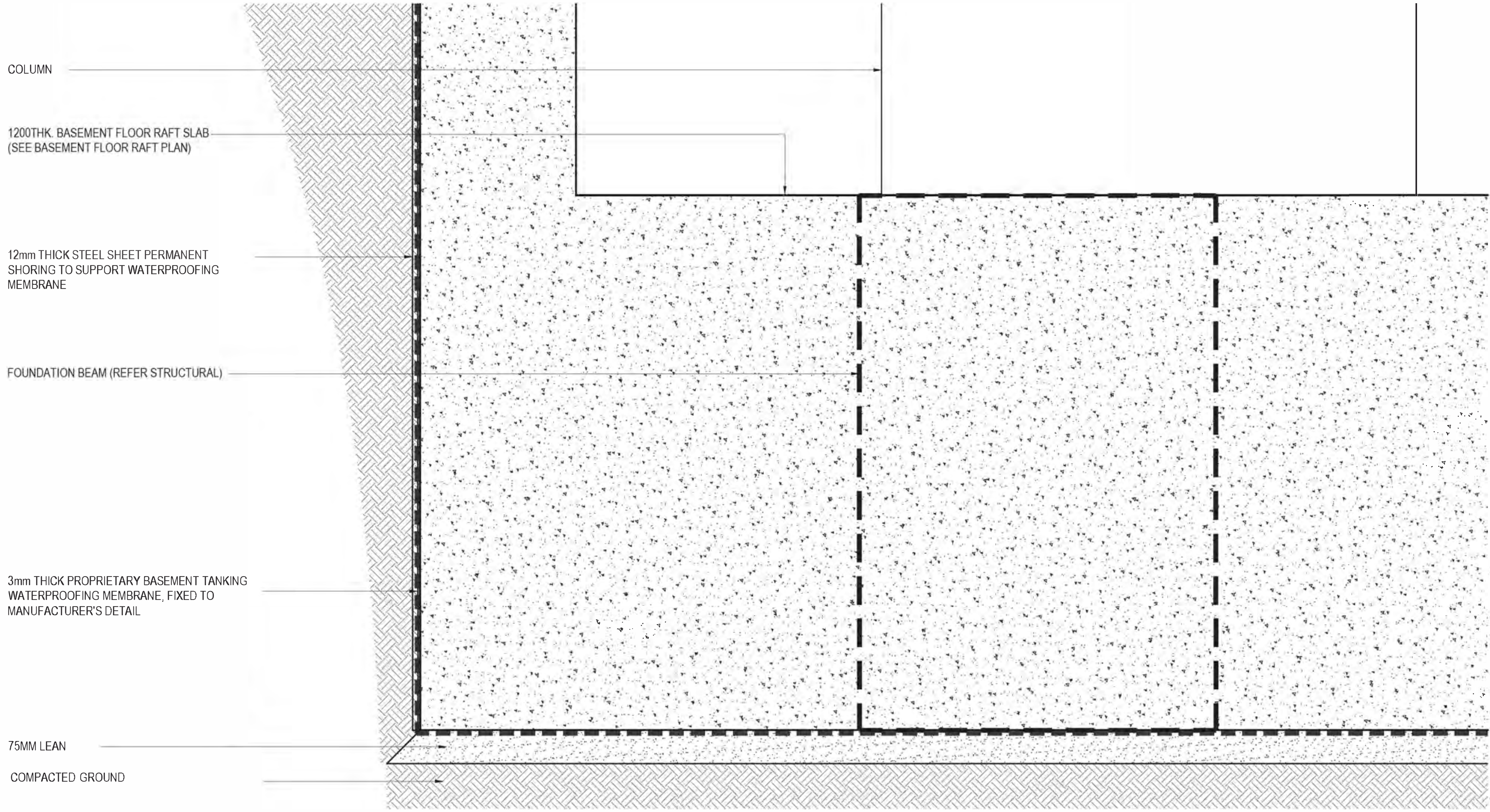
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



DETAIL-06-FOUNDATION DETAIL

SCALE 1:10

APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
DETAIL 06
FOUNDATION DETAILS

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-506

Revision Number :
R00

File Name :
306-11-506R00.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

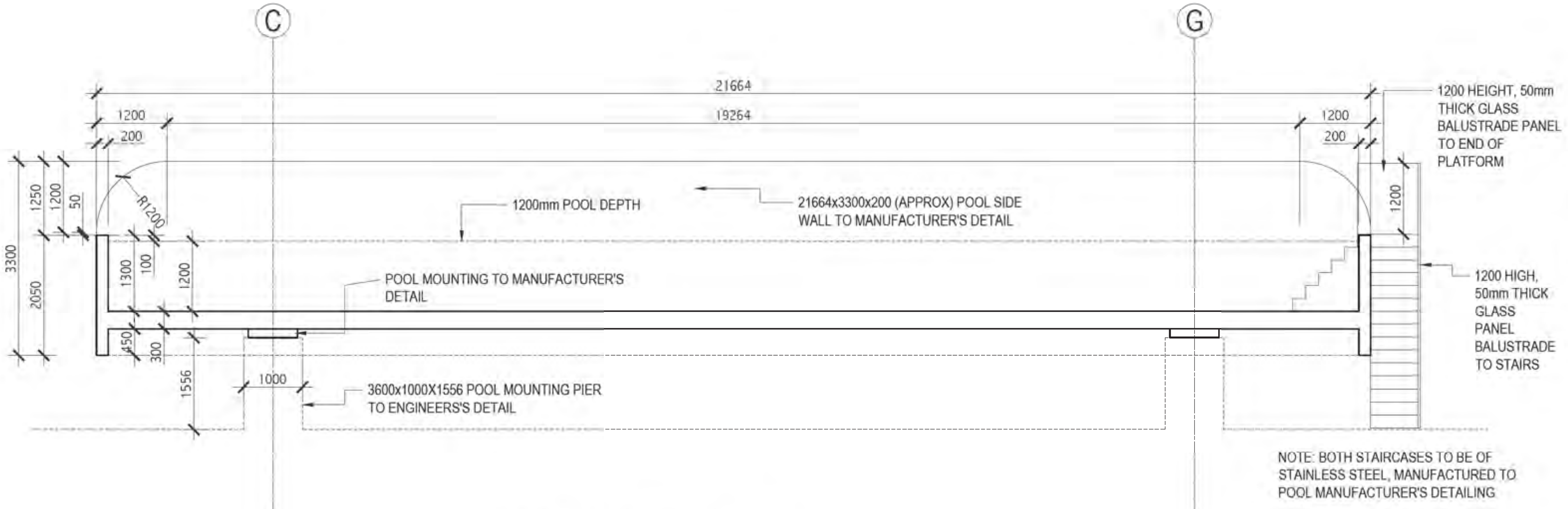
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

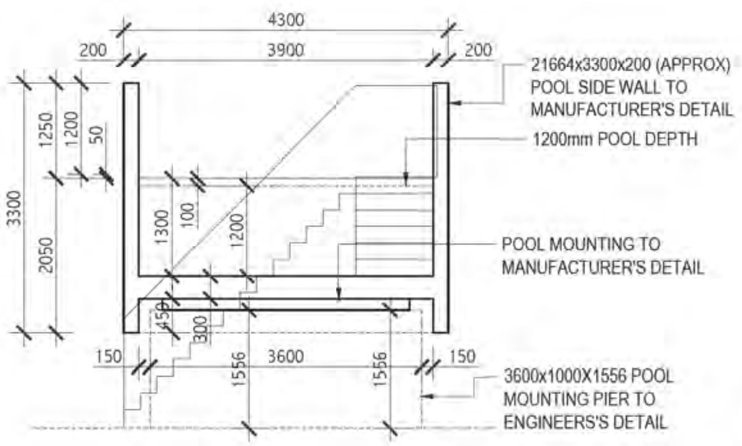
All dimensions to be checked on site.

GENERAL NOTES

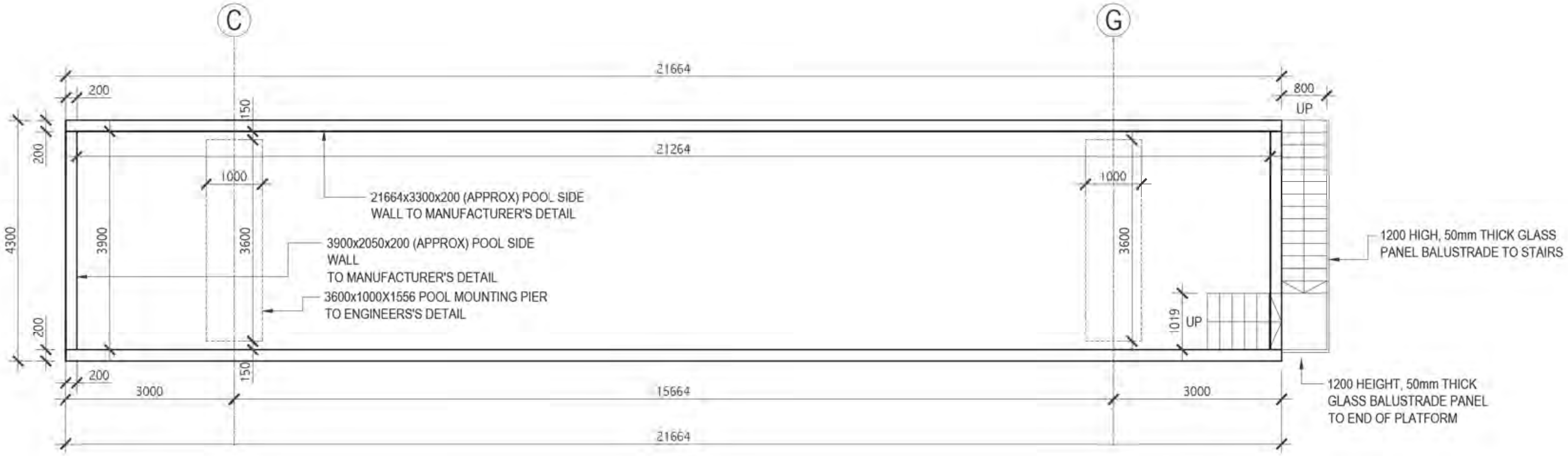


NOTE: BOTH STAIRCASES TO BE OF STAINLESS STEEL, MANUFACTURED TO POOL MANUFACTURER'S DETAILING

POOL LONG SECTION
SCALE 1:100



POOL CROSS SECTION
SCALE 1:100



POOL CONCEPT PLAN
SCALE 1:100

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
POOL DETAILS

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA

Date :
DECEMBER 2023

Checked By :
THALAAL

Drawing Number :
11-509

Revision Number :
R00

File Name :
306-11-509R00.dwg

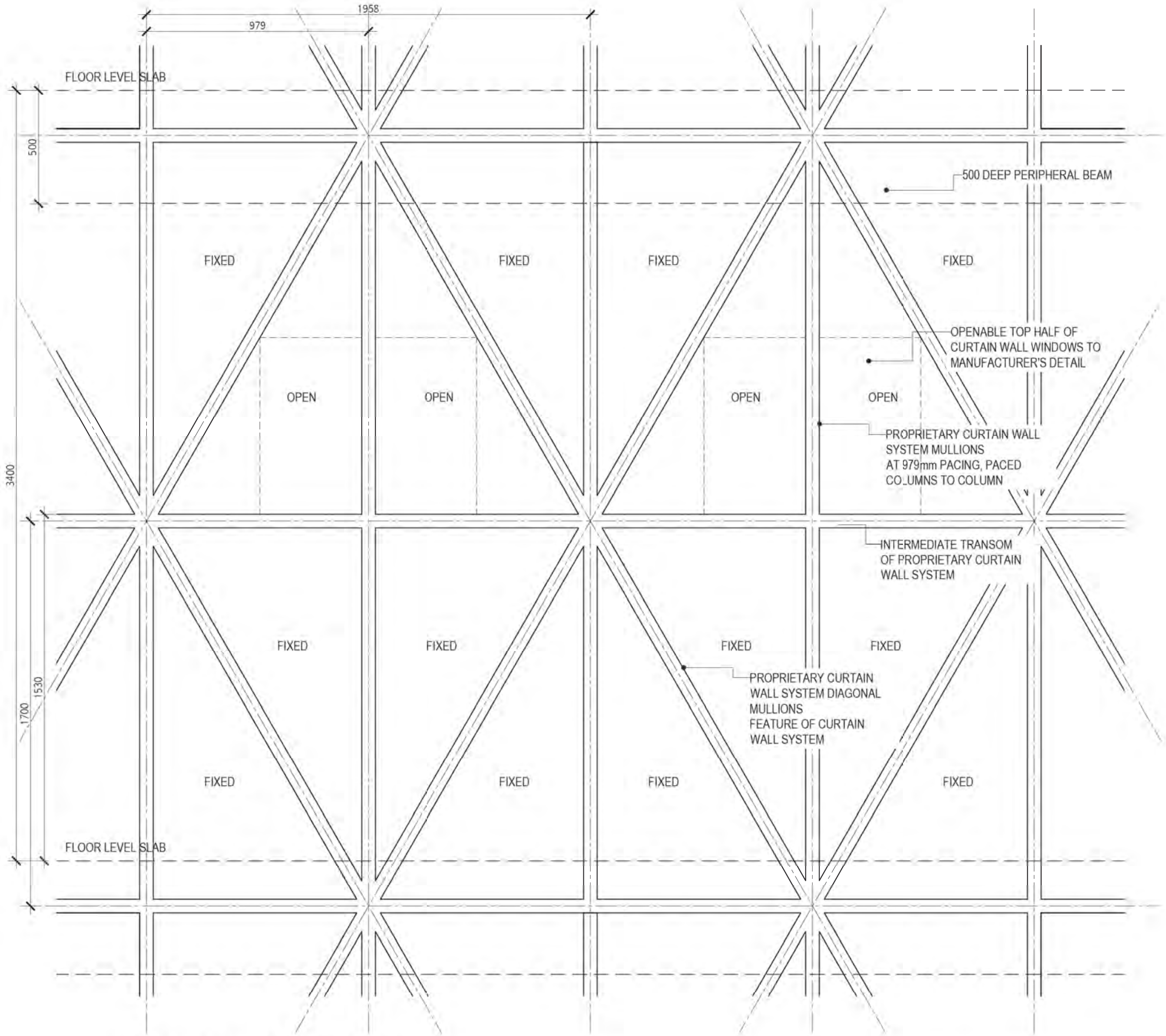
Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

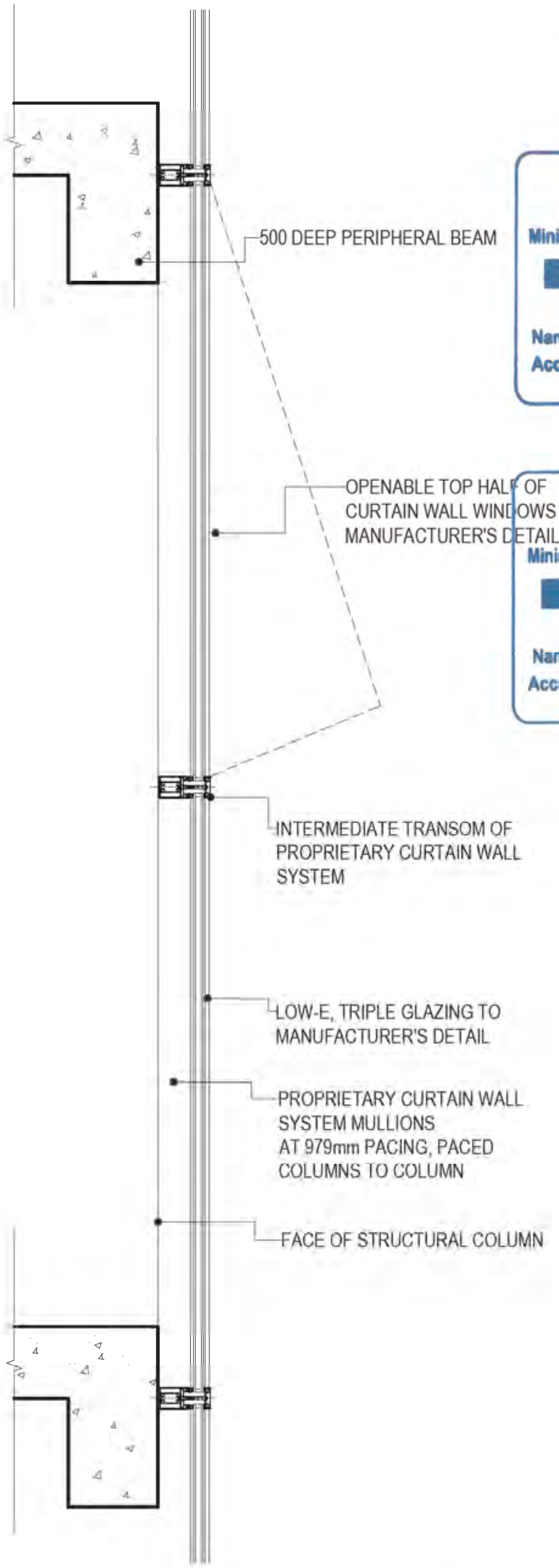
Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD



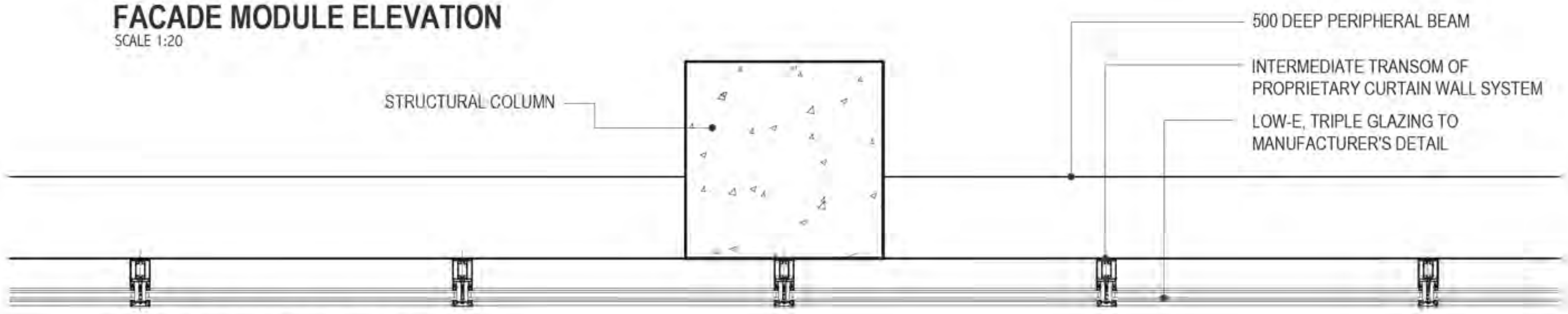
FACADE MODULE ELEVATION

SCALE 1:20



FACADE MODULE SECTION

SCALE 1:20



FACADE MODULE PLAN

SCALE 1:20

GENERAL NOTES

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	14-12-23	LAESHA	THALAAL

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
DETAIL 01
FACADE MODULE DETAIL

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA

Date :
NOVEMBER 2023

Checked By :
THALAAL

Drawing Number :
11-501

Revision Number :
R01

File Name :
306-11-501R01.dwg

APPROVED
HOUSING DEVELOPMENT CORPORATION

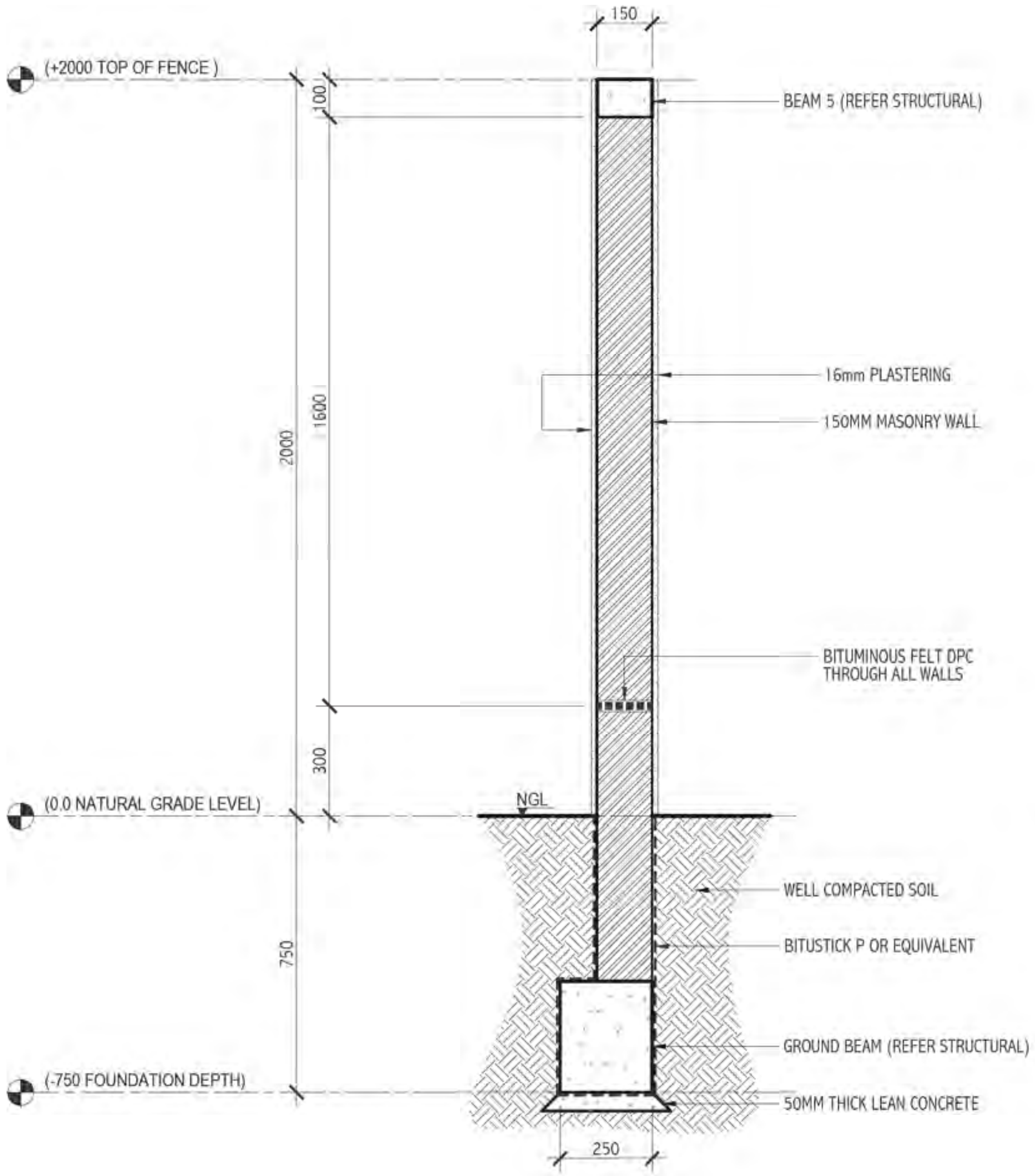
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

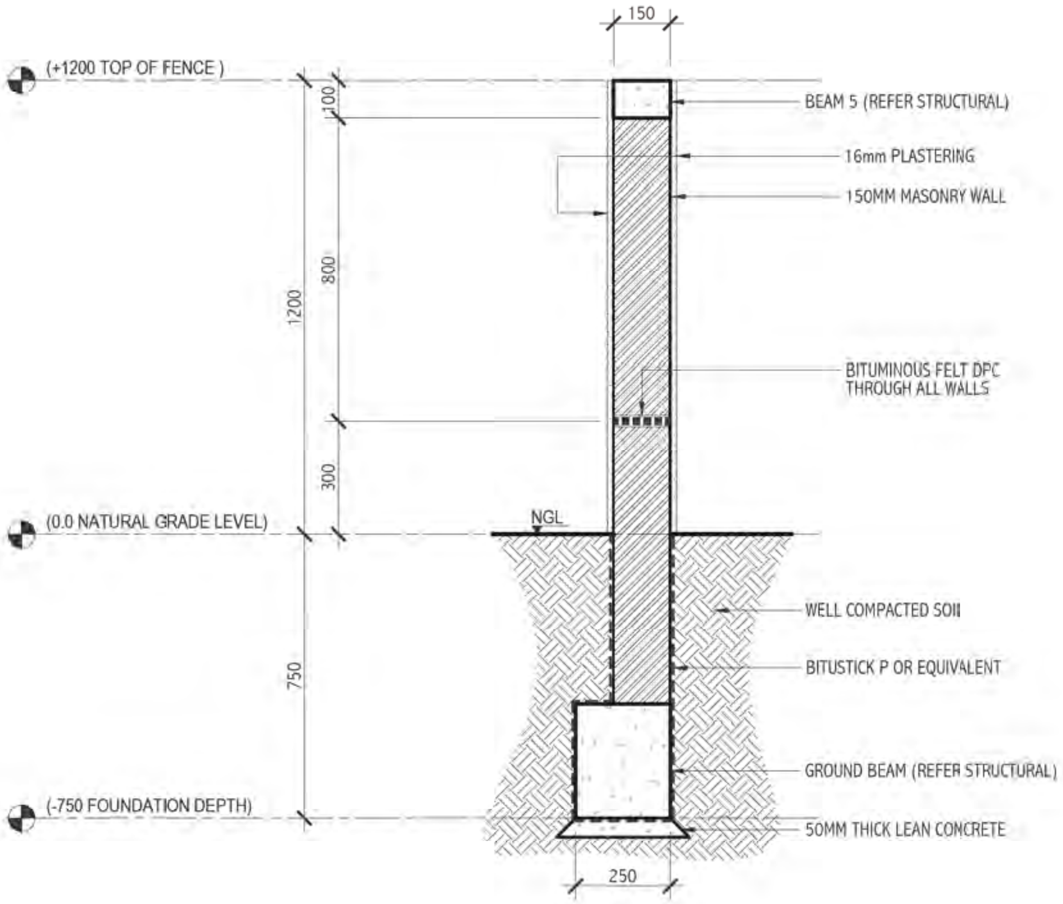
All dimensions to be checked on site

GENERAL NOTES



2M BOUNDARY WALL DETAIL

SCALE 1:20



1.2M BOUNDARY WALL DETAIL

SCALE 1:20

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
BOUNDARY WALL DETAIL

Scale :
1:100

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
FEBRUARY 2024
Checked By :
THALAAL

Drawing Number :
11-511

Revision Number :
R00

File Name :
306-11-511R00.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

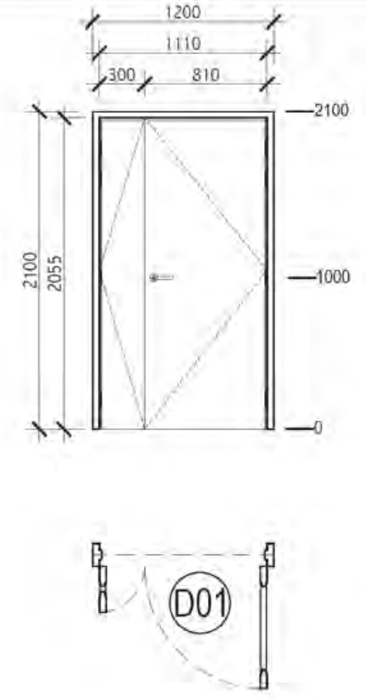
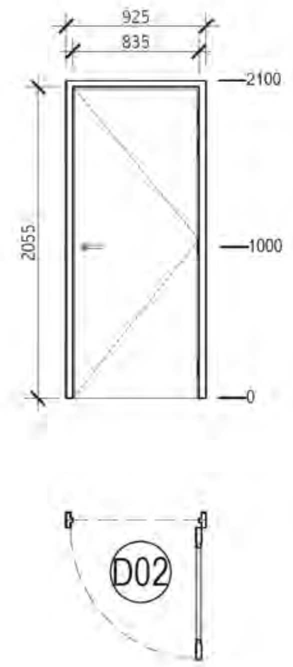
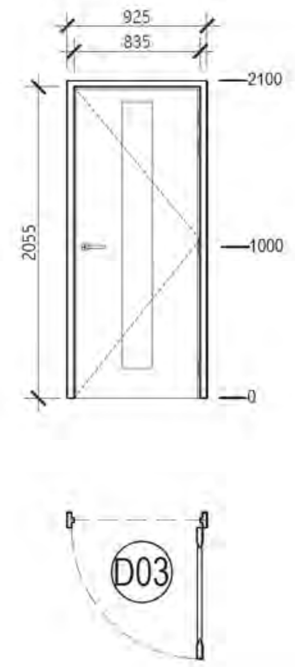
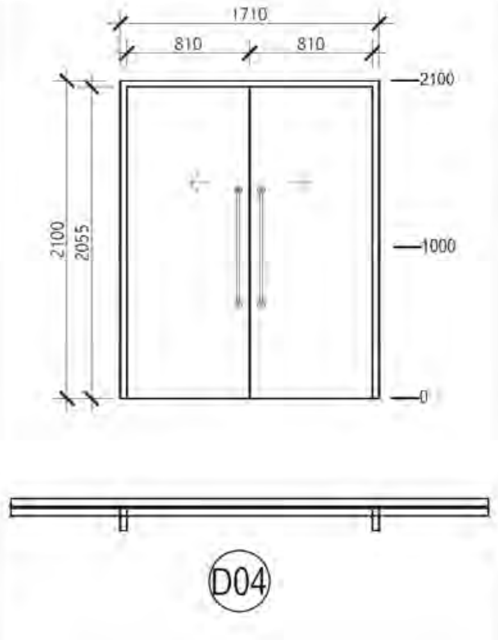
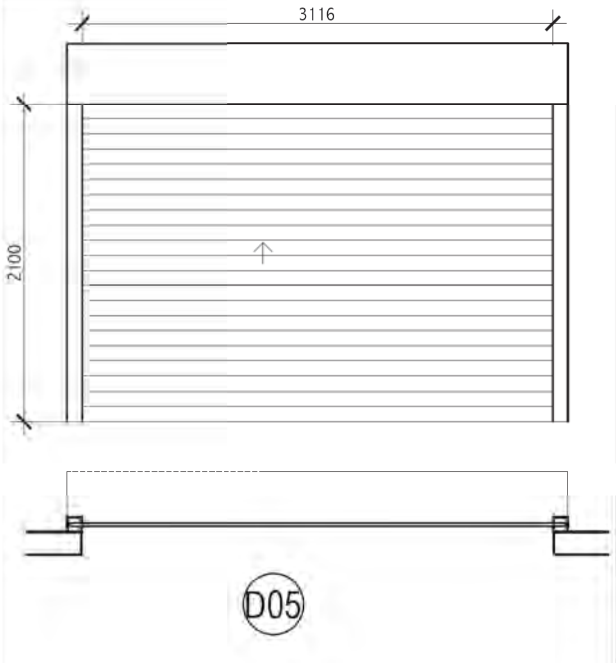
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES

ELEVATION SYMBOL PLAN					
LOCATION	HALL ENTRANCE DOOR SET	TOILET DOOR & SERVICES DOOR	OFFICE AREA DOOR	GROUND FLOOR MAIN ENTRANCE	GARAGE DOOR (ROLLER SHUTTER)
JAMB	ELECTRO-GALVANISED METAL, IN POLYURETHANE PAINT FINISH	ELECTRO-GALVANISED METAL, IN POLYURETHANE PAINT FINISH	ELECTRO-GALVANISED METAL, IN POLYURETHANE PAINT FINISH	ELECTRO-GALVANISED METAL, IN POLYURETHANE PAINT FINISH	ELECTRO-GALVANISED METAL, IN POLYURETHANE PAINT FINISH
FRAME	ELECTRO-GALVANISED METAL, IN POLYURETHANE PAINT FINISH	ELECTRO-GALVANISED METAL, IN POLYURETHANE PAINT FINISH	ELECTRO-GALVANISED METAL, IN POLYURETHANE PAINT FINISH	ELECTRO-GALVANISED METAL, IN POLYURETHANE PAINT FINISH	ELECTRO-GALVANISED METAL, IN POLYURETHANE PAINT FINISH
CORE	SOLID CORE	SOLID CORE	SOLID CORE	LAMINATED GLASS SLIDING DOOR	SOLID CORE
PANEL	45mm THICK	45mm THICK	45mm THICK, DOUBLE GLAZED SEE-THROUGH PANEL	THICKNESS: TO MANUFACTURERS' DETAIL	45mm THICK
FINISH	HIGH PRESSURE LAMINATE, WHITE	HIGH PRESSURE LAMINATE, WHITE	HIGH PRESSURE LAMINATE, WHITE	VOID	HIGH PRESSURE LAMINATE, WHITE
LINTEL	VOID	VOID	VOID	VOID	VOID
HINGE	STAINLESS STEEL, Nos 4 PER LEAF	STAINLESS STEEL, Nos 4 PER LEAF	STAINLESS STEEL, Nos 4 PER LEAF	STAINLESS STEEL, DOOR SLIDE MECHANISM	STAINLESS STEEL, Nos 4 PER LEAF
LOCK	LOCK SET	LOCK SET	LOCK SET	LOCK SET, SPECIAL MADE HANDLE x Nos 4	LOCK SET
CLOSER	CLOSER REQUIRED	CLOSER REQUIRED	CLOSER REQUIRED	CLOSER REQUIRED	CLOSER REQUIRED
STOP	DOOR STOP REQUIRED	DOOR STOP REQUIRED	DOOR STOP REQUIRED	DOOR STOP REQUIRED	DOOR STOP REQUIRED
FIRE RATING	VOID	VOID	VOID	VOID	VOID
ACOUSTIC PROPERTIES	40dB	40dB	40dB	VOID	VOID
ADDITIONAL INFORMATION	VOID	Anti-bacterial finish, PVC protection plate on inner face	VOID	VOID	VOID

NOTE:

- SHOP DRAWINGS AND TECHNICAL SPECIFICATIONS FOR ALL ALUMINUM DOORS AND WINDOWS SHOWING DETAILS OF SECTIONS, ASSEMBLY, TYPE OF LOCKS, HINGES, BOLTS AND HANDLES SHOULD BE SUBMITTED BY THE CONTRACTOR FOR THE CONSULTANTS APPROVAL.
- ALL ELEVATIONS SHOWN FROM OUTSIDE
- FOR DOORS SEE SWINGS INDICATED ON FLOOR PLANS.
- ALL MEASUREMENTS TO BE CHECKED ON SITE.

SCHEDULE OF DOORS

SCALE 1:50

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
SCHEDULE OF DOORS -01

Scale :
1:50

Discipline :
ARCHITECTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
NOVEMBER 2023
Checked By :
THALAAL

Drawing Number :
11-602

Revision Number :
R00

File Name :
306-11-602R00.dwg

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

APPROVED
HOUSING DEVELOPMENT CORPORATION

Project: 306 - HAWKS OFFICE BUILDING

Client: HAWKS PVT LTD

Date: 28TH NOVEMBER 2023

SCHEDULE OF VENTILATION

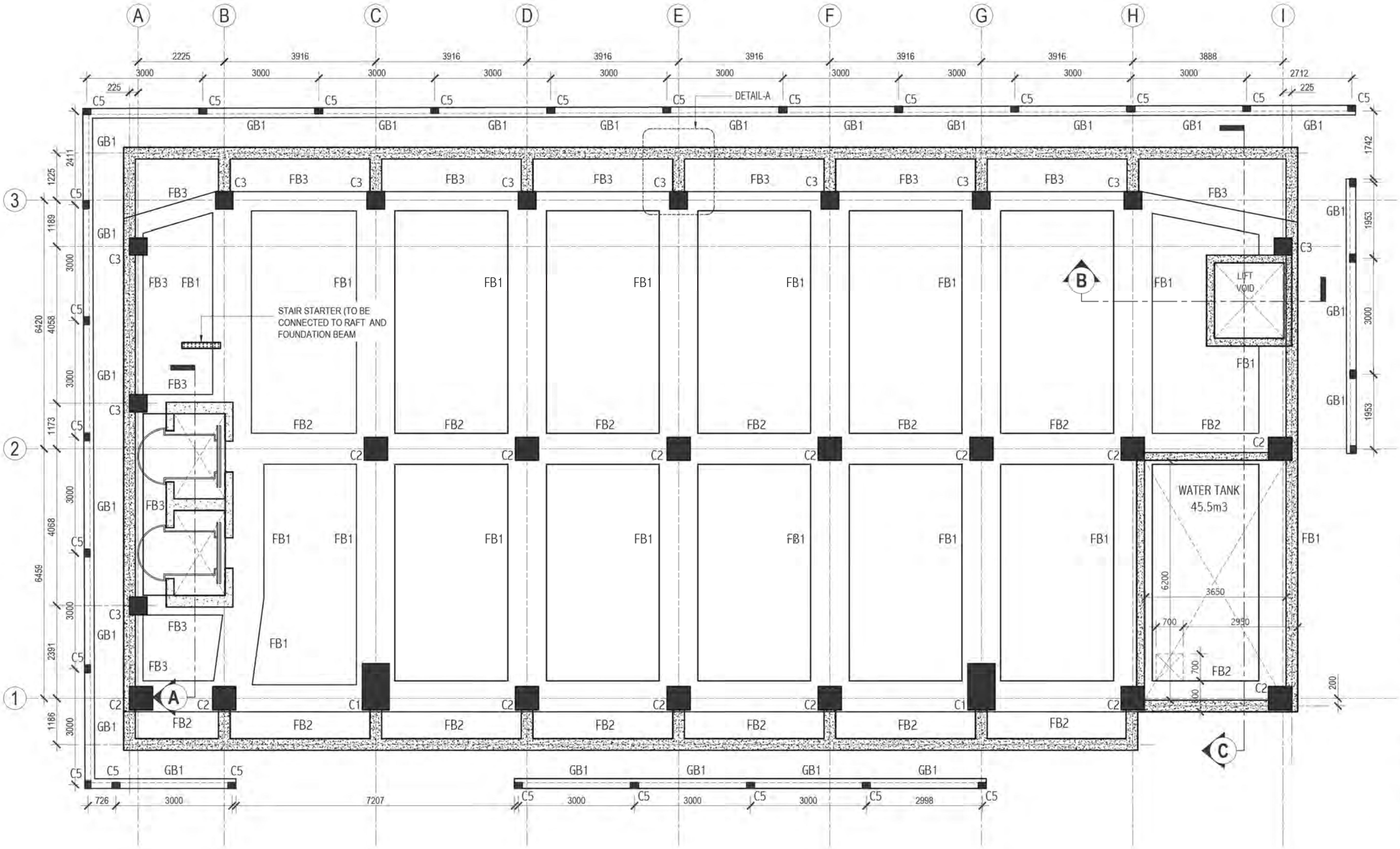
Room Name / number	*Room Areas (sqm) (specify centre to centre or clear)*	*Window (opening) number*	*Required opening area (sqm)*	*Designed opening area (sqm)*
BASEMENT LEVEL B1				
Basement Parking	401.58	-	40.16	MECH'VENT
LEVEL 01 (GROUND FLOOR LEVEL)				
Lift Lobby 01	30.33	-	3.03	MECH'VENT WITH AC
Lift Lobby 02	11.69	-	1.17	MECH'VENT WITH AC
Foyer	5.46	-	0.55	MECH'VENT WITH AC
Female Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Male Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Building Utilitie Space	16.00	-	1.60	MECH'VENT
Level 01 Parking	121.60	-	12.16	MECH'VENT
Carport/Carlift	24.63	-	2.46	MECH'VENT
Waste Management	8.76	-	0.88	MECH'VENT
Entrance Lobby	77.20	-	7.72	MECH'VENT WITH AC
Carport, Concourse with open sides	47.20	-	4.72	MECH'VENT
LEVEL 02 (FIRST FLOOR LEVEL)				
Lift Lobby 01	30.33	-	3.03	MECH'VENT WITH AC
Lift Lobby 02	11.69	-	1.17	MECH'VENT WITH AC
Foyer	5.46	-	0.55	MECH'VENT WITH AC
Female Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Male Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Tea Room	13.13	-	1.31	MECH'VENT WITH AC
Baby Room	3.15	-	0.32	MECH'VENT WITH AC
Storage	2.56	-	0.26	MECH'VENT WITH AC
Level 02 Parking	316.46	-	31.65	MECH'VENT
LEVEL 03 (SECOND FLOOR LEVEL)				
Lift Lobby 01	30.33	-	3.03	MECH'VENT WITH AC
Lift Lobby 02	11.69	-	1.17	MECH'VENT WITH AC
Foyer	5.46	-	0.55	MECH'VENT WITH AC
Female Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Male Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Tea Room	13.13	-	1.31	MECH'VENT WITH AC
Baby Room	3.15	-	0.32	MECH'VENT WITH AC

Storage	2.56	-	0.26	MECH'VENT WITH AC
Convention Hall	316.46	-	31.65	MECH'VENT WITH AC
LEVEL 04 (THIRD FLOOR LEVEL)				
Lift Lobby 01	30.33	-	3.03	MECH'VENT WITH AC
Lift Lobby 02	11.69	-	1.17	MECH'VENT WITH AC
Foyer	5.46	-	0.55	MECH'VENT WITH AC
Female Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Male Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Tea Room	13.13	-	1.31	MECH'VENT WITH AC
Baby Room	3.15	-	0.32	MECH'VENT WITH AC
Storage	2.56	-	0.26	MECH'VENT WITH AC
Office Zone 1&2	145.11	-	14.51	MECH'VENT WITH AC
Executive Office 1	64.36	-	6.44	MECH'VENT WITH AC
Executive Office 2	64.06	-	6.41	MECH'VENT WITH AC
LEVEL 05 (FOURTH FLOOR LEVEL)				
Lift Lobby 01	30.33	-	3.03	MECH'VENT WITH AC
Lift Lobby 02	11.69	-	1.17	MECH'VENT WITH AC
Foyer	5.46	-	0.55	MECH'VENT WITH AC
Female Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Male Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Tea Room	13.13	-	1.31	MECH'VENT WITH AC
Baby Room	3.15	-	0.32	MECH'VENT WITH AC
Storage	2.56	-	0.26	MECH'VENT WITH AC
Office Zone 1&2	145.11	-	14.51	MECH'VENT WITH AC
Executive Office 1	64.36	-	6.44	MECH'VENT WITH AC
Executive Office 2	64.06	-	6.41	MECH'VENT WITH AC
LEVEL 06 (FIFTH FLOOR LEVEL)				
Lift Lobby 01	30.33	-	3.03	MECH'VENT WITH AC
Lift Lobby 02	11.69	-	1.17	MECH'VENT WITH AC
Foyer	5.46	-	0.55	MECH'VENT WITH AC
Female Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Male Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Tea Room	13.13	-	1.31	MECH'VENT WITH AC
Baby Room	3.15	-	0.32	MECH'VENT WITH AC
Storage	2.56	-	0.26	MECH'VENT WITH AC
Office Zone 1&2	145.11	-	14.51	MECH'VENT WITH AC

Executive Office 1	64.36	-	6.44	MECH'VENT WITH AC
Executive Office 2	64.06	-	6.41	MECH'VENT WITH AC
LEVEL 07 (SIXTH FLOOR LEVEL)				
Lift Lobby 01	30.33	-	3.03	MECH'VENT WITH AC
Lift Lobby 02	11.69	-	1.17	MECH'VENT WITH AC
Foyer	5.46	-	0.55	MECH'VENT WITH AC
Female Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Male Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Tea Room	13.13	-	1.31	MECH'VENT WITH AC
Baby Room	3.15	-	0.32	MECH'VENT WITH AC
Storage	2.56	-	0.26	MECH'VENT WITH AC
Office Zone 1	114.44	-	11.44	MECH'VENT WITH AC
Office Zone 2	97.86	-	9.79	MECH'VENT WITH AC
Executive Office 01	32.07	-	3.21	MECH'VENT WITH AC
LEVEL 08 (SEVENTH FLOOR LEVEL)				
Lift Lobby 01	30.33	-	3.03	MECH'VENT WITH AC
Lift Lobby 02	11.69	-	1.17	MECH'VENT WITH AC
Foyer	5.46	-	0.55	MECH'VENT WITH AC
Female Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Male Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Tea Room	13.13	-	1.31	MECH'VENT WITH AC
Baby Room	3.15	-	0.32	MECH'VENT WITH AC
Storage	2.56	-	0.26	MECH'VENT WITH AC
Office Zone 1	114.44	-	11.44	MECH'VENT WITH AC
Office Zone 2	97.86	-	9.79	MECH'VENT WITH AC
Executive Office 01	32.07	-	3.21	MECH'VENT WITH AC
LEVEL 09 (EIGHTH FLOOR LEVEL)				
Lift Lobby 01	30.33	-	3.03	MECH'VENT WITH AC
Lift Lobby 02	11.69	-	1.17	MECH'VENT WITH AC
Foyer	5.46	-	0.55	MECH'VENT WITH AC
Female Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Male Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Tea Room	13.13	-	1.31	MECH'VENT WITH AC
Baby Room	3.15	-	0.32	MECH'VENT WITH AC
Storage	2.56	-	0.26	MECH'VENT WITH AC
Open Office	71.06	-	7.11	MECH'VENT WITH AC

Boardroom Foyer	6.22	-	0.62	MECH'VENT WITH AC
Boardroom & Lobby	93.18	-	9.32	MECH'VENT WITH AC
Hallway	15.66	-	1.57	MECH'VENT WITH AC
Executive Office 1	79.13	-	7.91	MECH'VENT WITH AC
Executive Office 2	40.20	-	4.02	MECH'VENT WITH AC
LEVEL 10 (NINTH FLOOR LEVEL)				
Lift Lobby 01	30.33	-	3.03	MECH'VENT WITH AC
Lift Lobby 02	11.69	-	1.17	MECH'VENT WITH AC
Foyer	5.46	-	0.55	MECH'VENT WITH AC
Female Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Male Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Tea Room	13.13	-	1.31	MECH'VENT WITH AC
Baby Room	3.15	-	0.32	MECH'VENT WITH AC
Storage	2.56	-	0.26	MECH'VENT WITH AC
Open Office	48.74	-	4.87	MECH'VENT WITH AC
Open Office or Three Separate Executive	77.81	-	7.78	MECH'VENT WITH AC
Office Foyer & Hallway	32.81	-	3.28	MECH'VENT WITH AC
Lounge	49.93	-	4.99	MECH'VENT WITH AC
Directors Office 1	46.73	-	4.67	MECH'VENT WITH AC
Directors Office 2	48.13	-	4.81	MECH'VENT WITH AC
TERRACE LEVEL T1				
Lift Lobby 01	30.33	-	3.03	MECH'VENT WITH AC
Lift Lobby 02	11.69	-	1.17	MECH'VENT WITH AC
Foyer	5.46	-	0.55	MECH'VENT WITH AC
Female Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Male Disability Accessible Toilet	2.70	-	0.27	MECH'VENT
Tea Room	13.13	-	1.31	MECH'VENT WITH AC
Baby Room	3.15	-	0.32	MECH'VENT WITH AC
Storage	2.56	-	0.26	MECH'VENT WITH AC
Lounge	32.03	-	3.20	MECH'VENT WITH AC
Open Air Lounge	192.99	-	19.30	MECH'VENT WITH AC
MACHINE ROOM LEVEL				
Machine Room	24.65	-	2.47	MECH'VENT

GENERAL NOTES



FOUNDATION BEAM LAYOUT

SCALE 1:100

0m 5m 10m

APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF
R03	06/02/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
FOUNDATION BEAM PLAN

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : DILUSHA
Date : DECEMBER 2023
Checked By : SHAREEF
Design By : ZAYAAN

Drawing Number :
21-101

Revision Number :
R03

File Name :
306-21-101R03.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

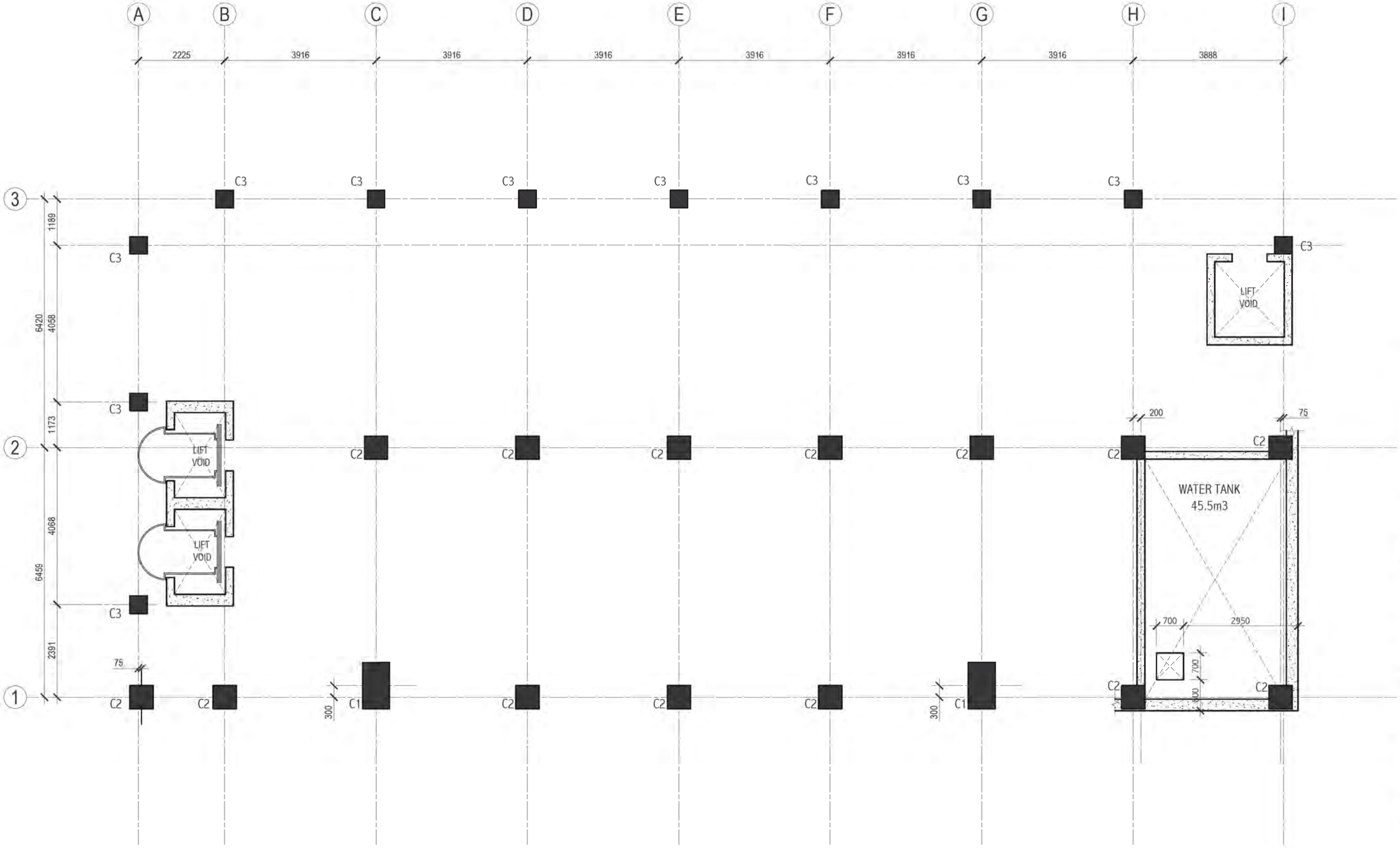
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site

GENERAL NOTES



GROUND FLOOR TO NINTH FLOOR COLUMN LAYOUT

SCALE 1:100

0m 5m 10m

APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
GROUND TO NINTH FLOOR COLUMN LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By :
DILUSHA

Date :
DECEMBER 2023

Checked By :
SHAREEF

Design By :
ZAYAAN

Drawing Number :
21-102

Revision Number :
R02

File Name :
306-21-102R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

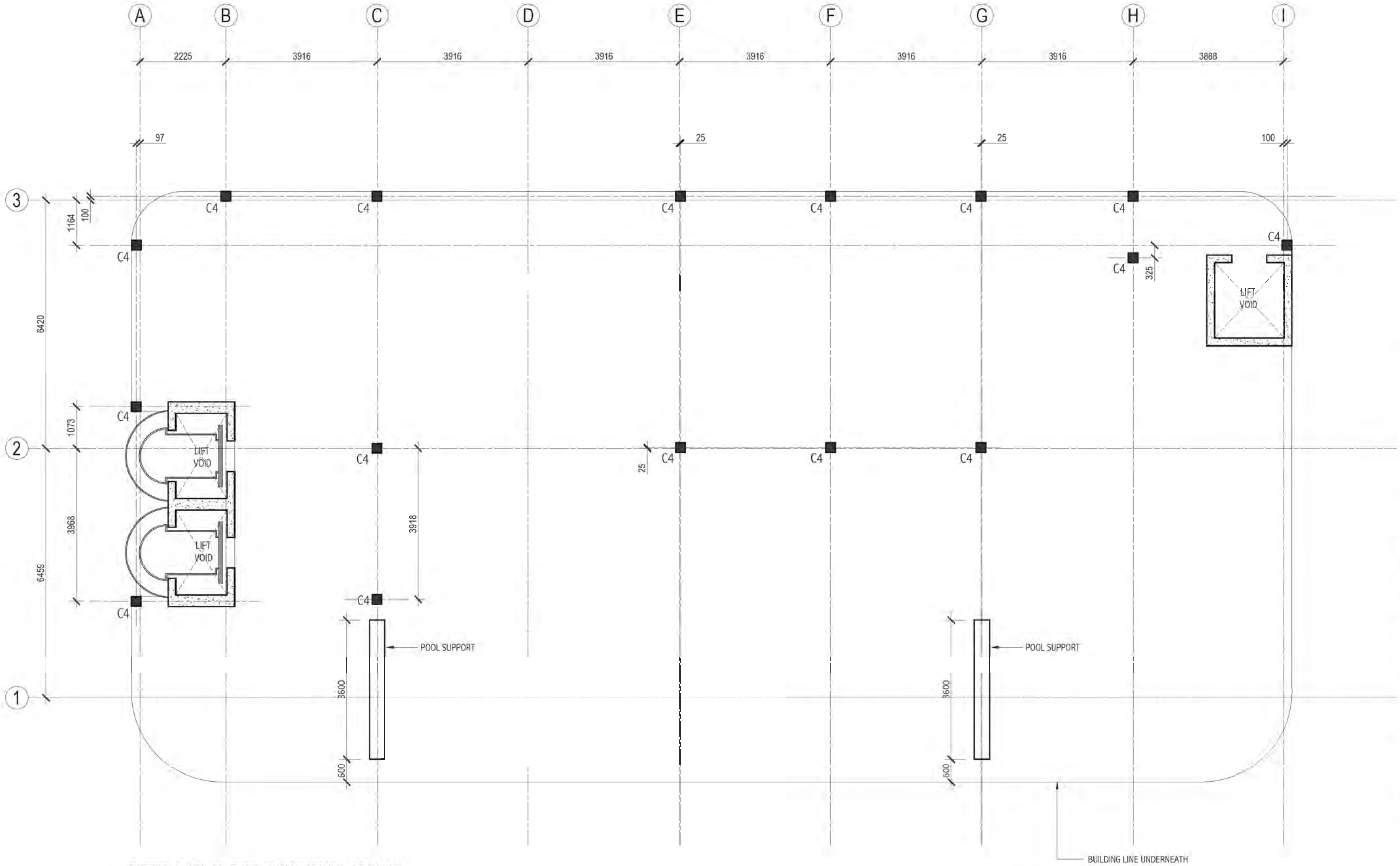
Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site



TERRACE FLOOR COLUMN LAYOUT

SCALE 1:100

0m 5m 10m

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

NOTE:
POOL MOUNTING PIER DESIGNED FOR A DEAD LOAD OF 12KN/M2 AND LIVE LOAD OF 3KN/M2

GENERAL NOTES

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
TERRACE FLOOR COLUMN LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : DILUSHA
Date : DECEMBER 2023
Checked By : SHAREEF
Design By : ZAYAAN

Drawing Number :
21-103

Revision Number :
R02

File Name :
306-21-103R02.dwg

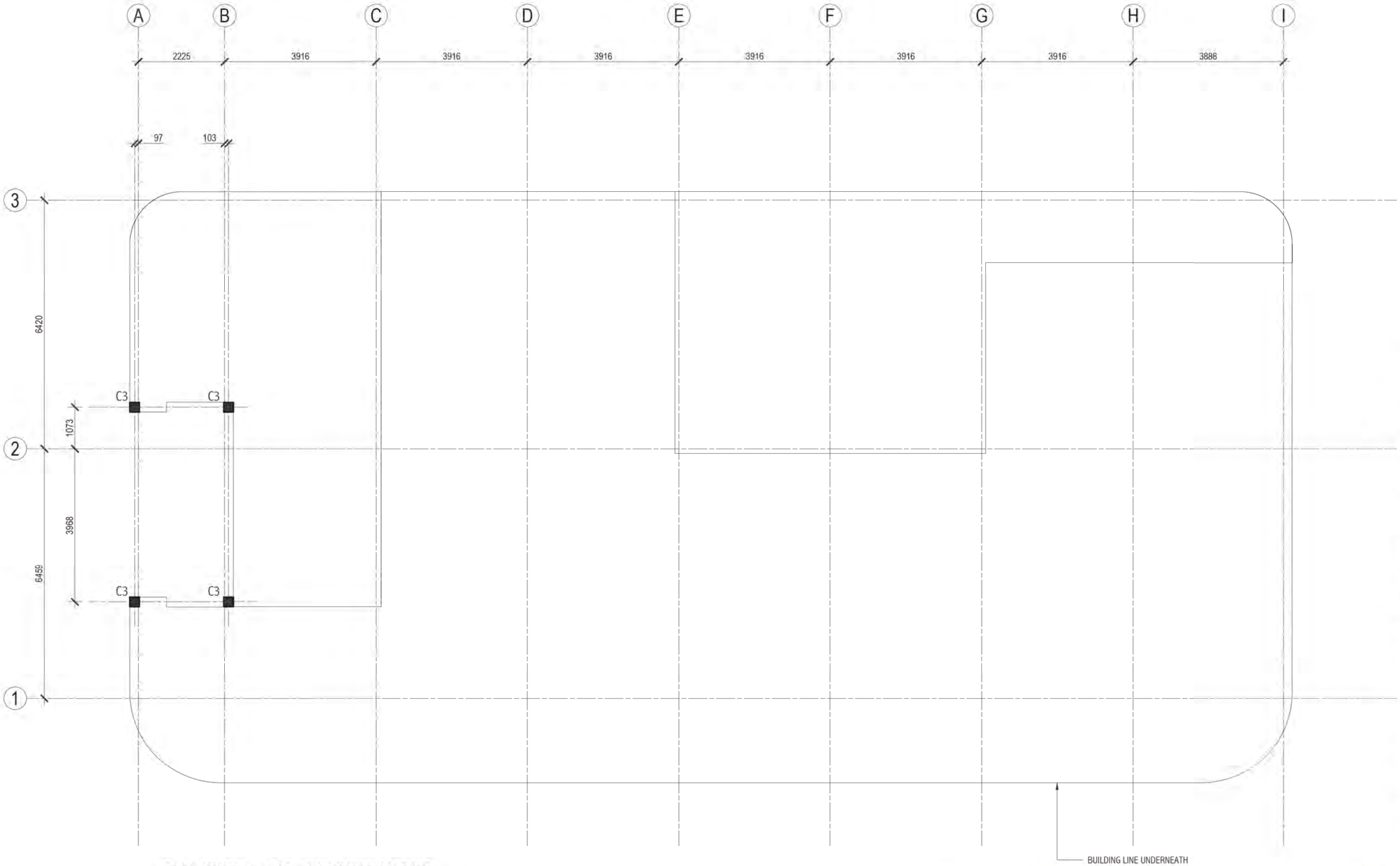
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



MACHINE ROOM COLUMN LAYOUT

SCALE 1:100

0m 5m 10m

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
MACHINE ROOM FLOOR
COLUMN LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By :
DILUSHA
Date :
DECEMBER 2023
Checked By :
SHAREEF
Design By :
ZAYAAN

Drawing Number :
21-104a

Revision Number :
R02

File Name :
306-21-104aR02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

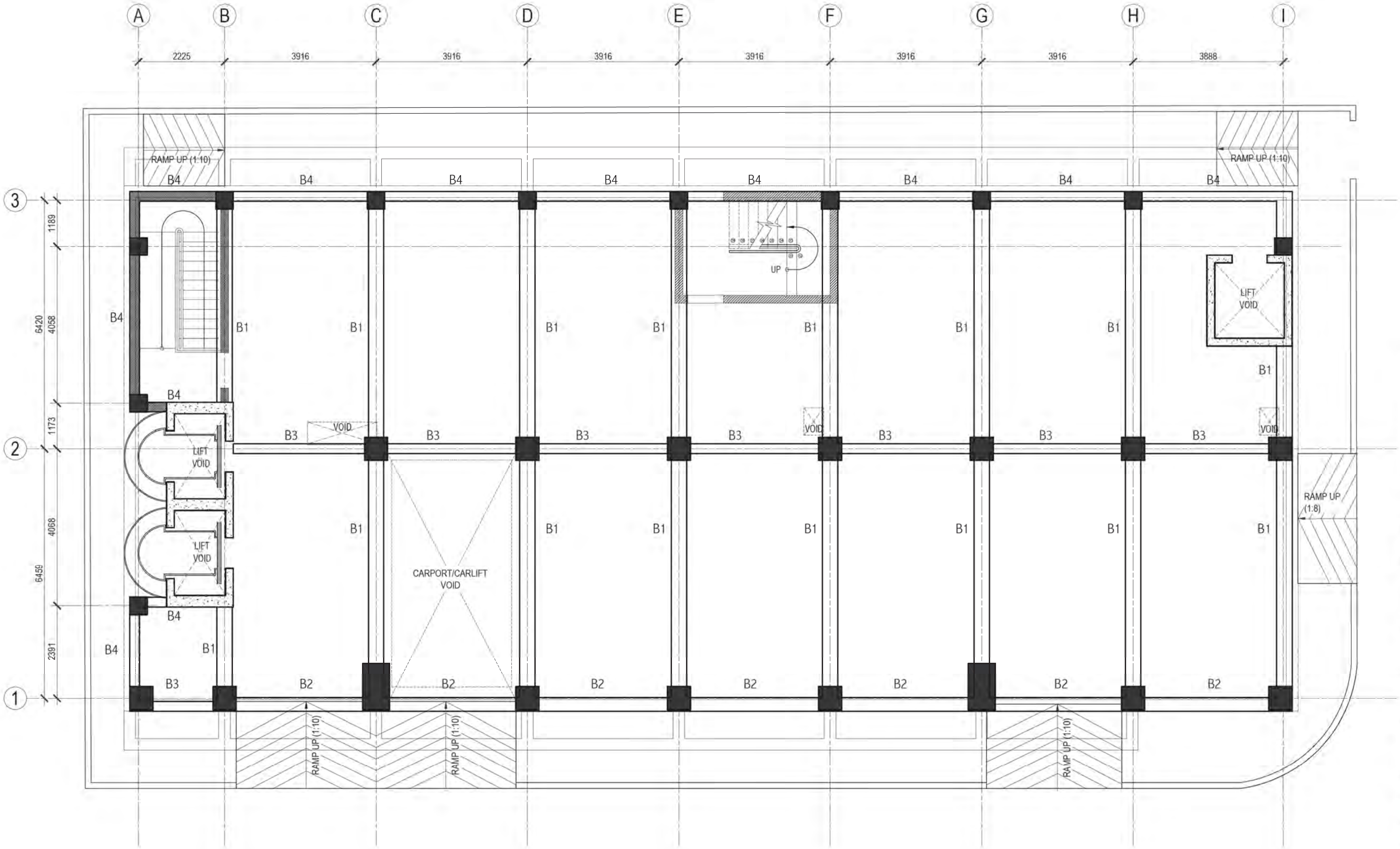
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



GROUND FLOOR BEAM LAYOUT

SCALE 1:100

0m 5m 10m

APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
GROUND FLOOR
BEAM LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By :
DILUSHA
Checked By :
SHAREEF

Date :
DECEMBER 2023
Design By :
ZAYAAN

Drawing Number :
21-104

Revision Number :
R02

File Name :
306-21-104R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

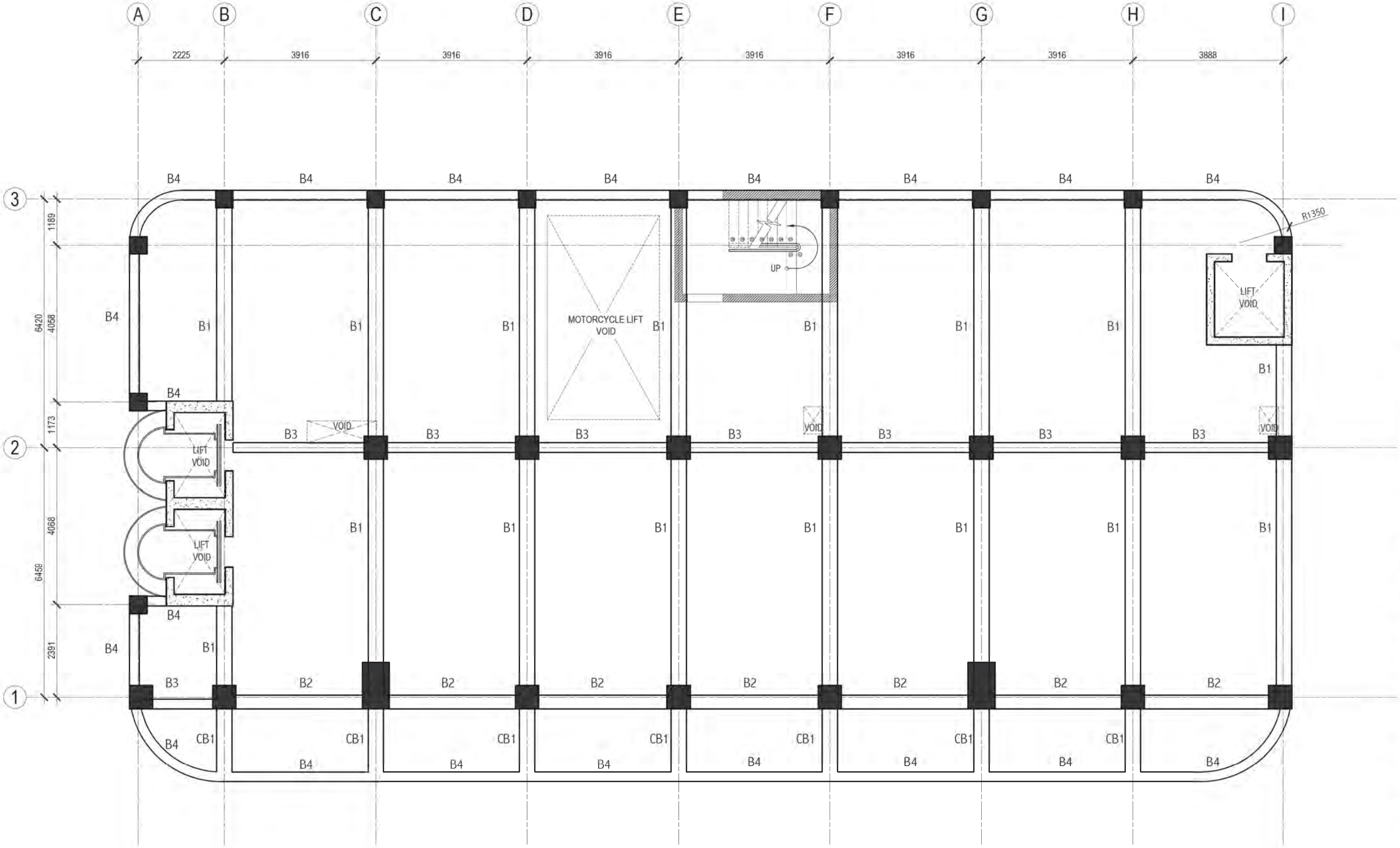
Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site



FIRST FLOOR BEAM LAYOUT

SCALE 1:100

0m 5m 10m

GENERAL NOTES

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
FIRST FLOOR BEAM LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By :
DILUSHA
Checked By :
SHAREEF

Date :
DECEMBER 2023
Design By :
ZAYAAN

Drawing Number :
21-105a

Revision Number :
R02

File Name :
306-21-105aR02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

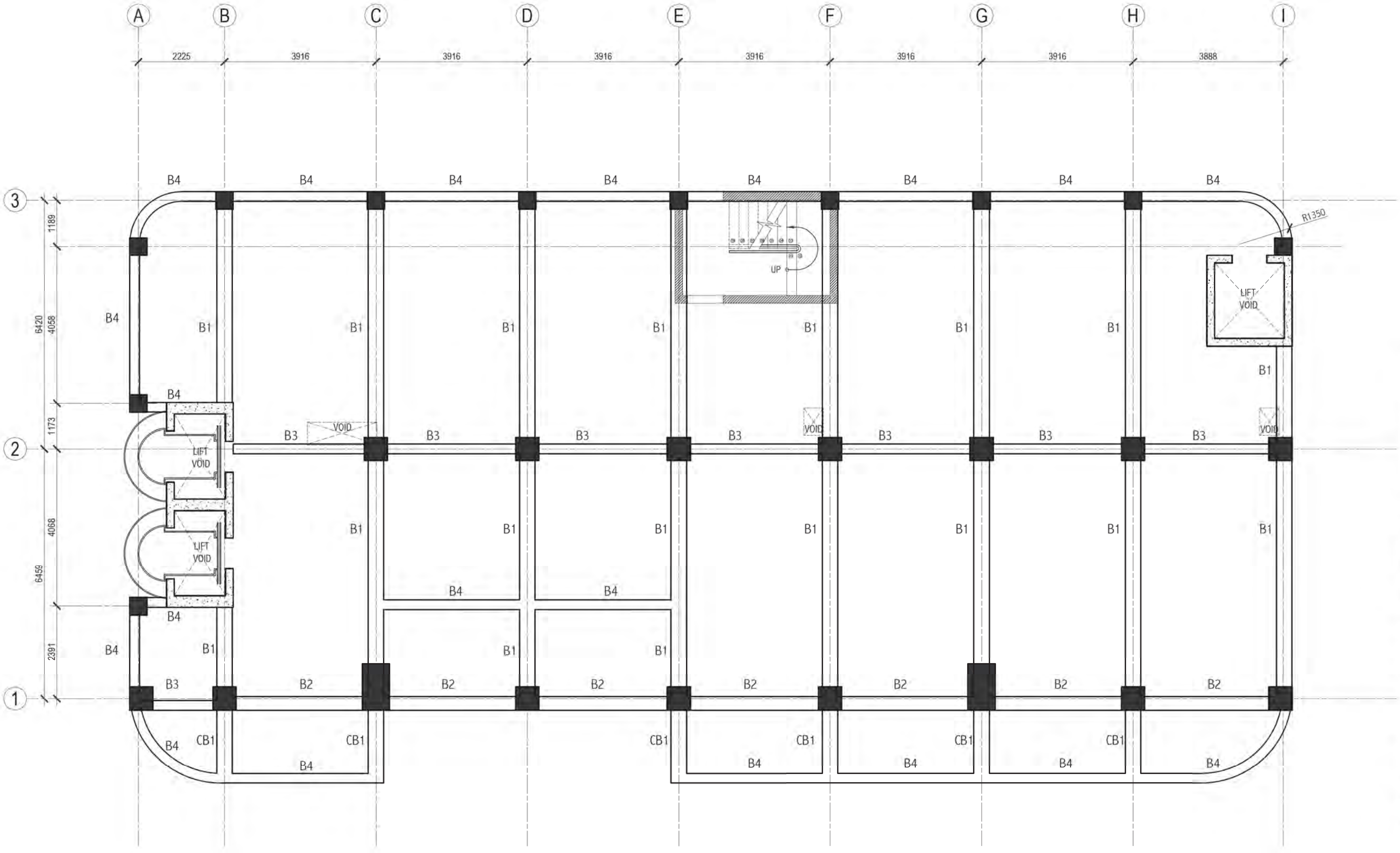
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

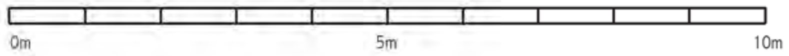
GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



FOURTH FLOOR BEAM LAYOUT
SCALE 1:100



APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX
Drawing Title :
FOURTH FLOOR
BEAM LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : DILUSHA
Date : DECEMBER 2023
Checked By : SHAREEF
Design By : ZAYAAN

Drawing Number :
21-105

Revision Number :
R02

File Name :
306-21-105R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

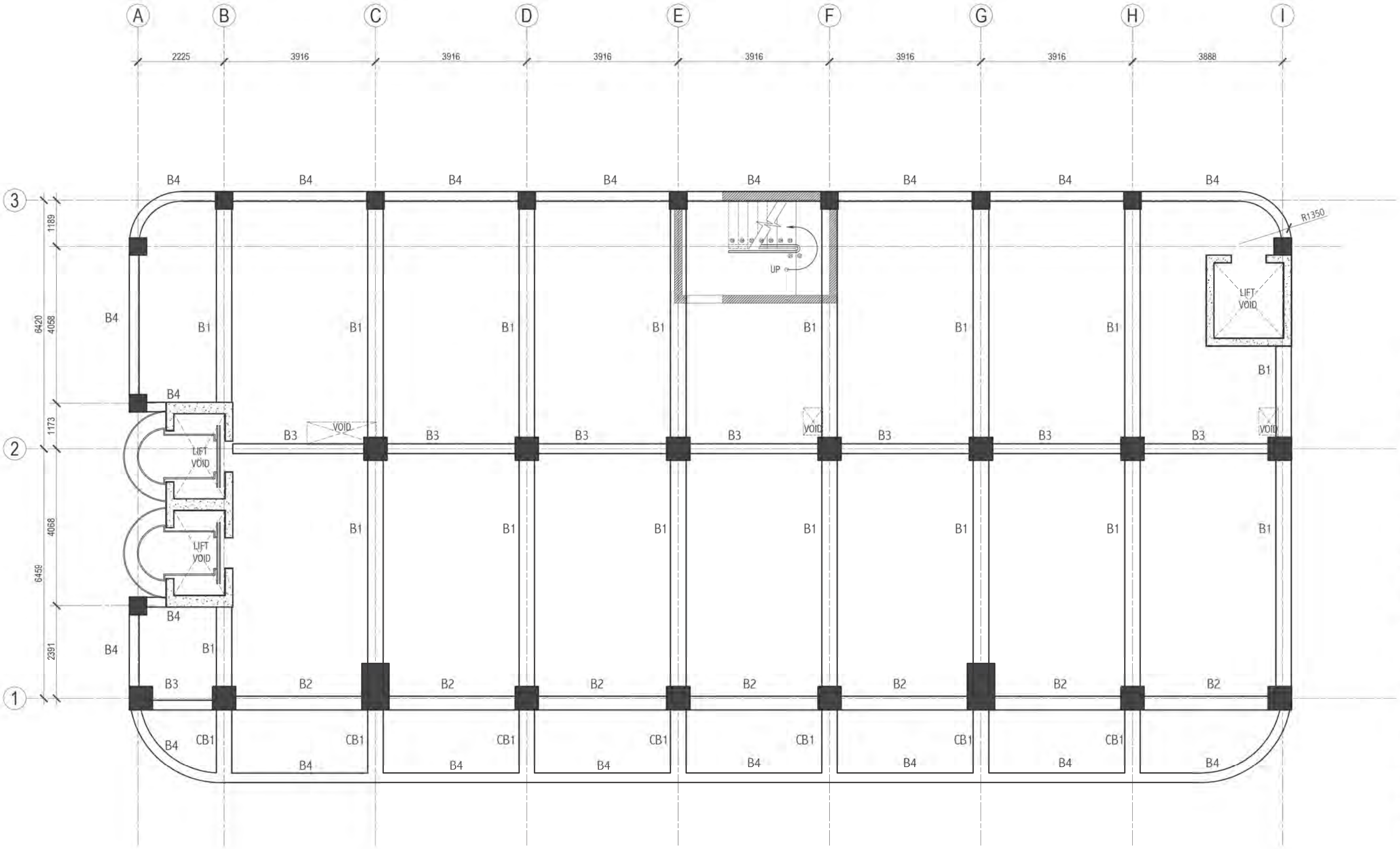
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site

GENERAL NOTES



2ND-3RD & 5TH-9TH FLOOR BEAM LAYOUT

SCALE 1:100

0m 5m 10m

APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF
R03	01/02/2024	LAESHA	SHAREEF

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
2ND-3RD & 5TH-9TH FLOOR
BEAM LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-106

Revision Number :
R03

File Name :
306-21-106R03.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

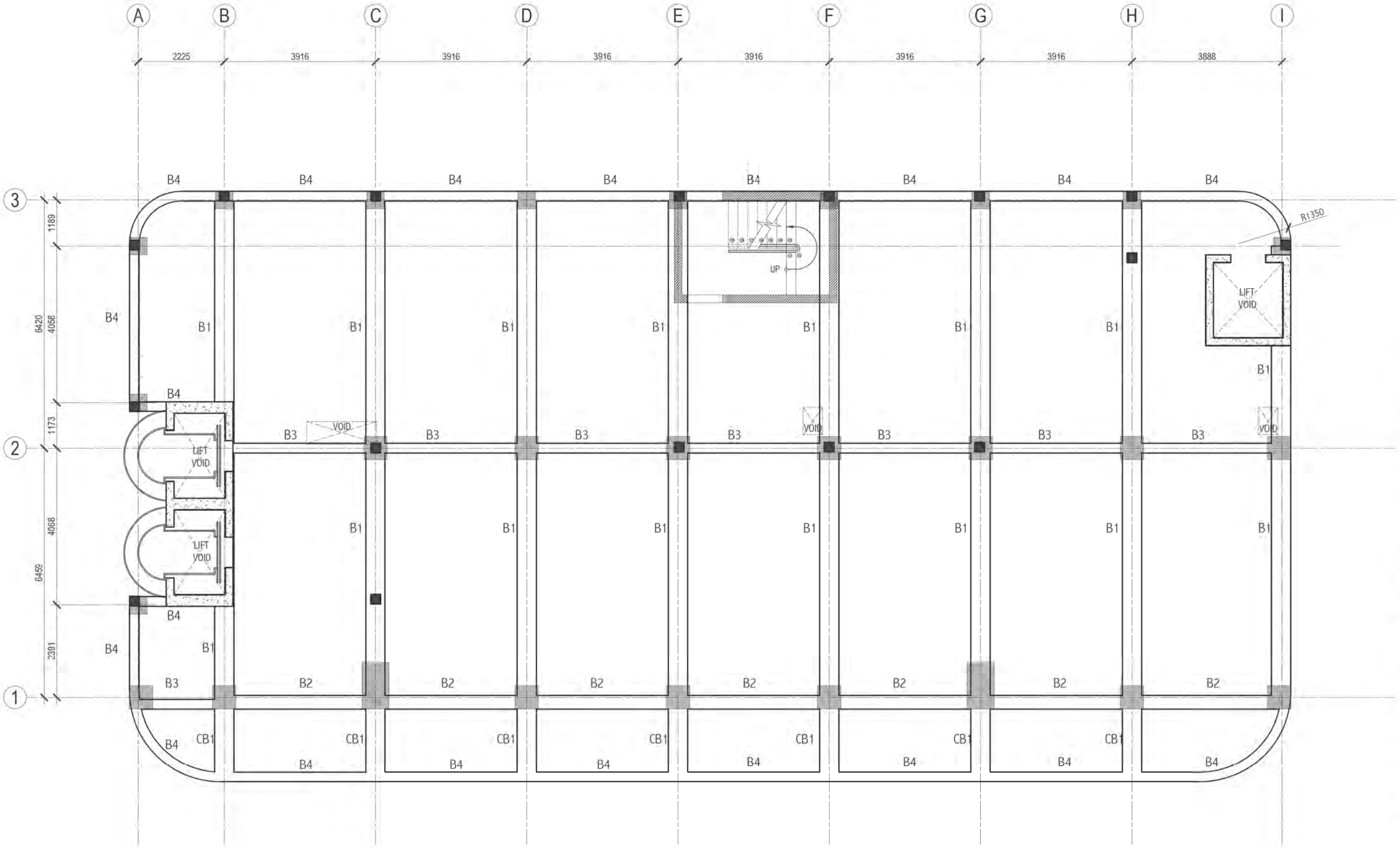
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



TERRACE FLOOR BEAM LAYOUT

SCALE 1:100

0m 5m 10m

APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF
R03	01/02/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
TERRACE FLOOR BEAM LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-107a

Revision Number :
R03

File Name :
306-21-107aR03.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

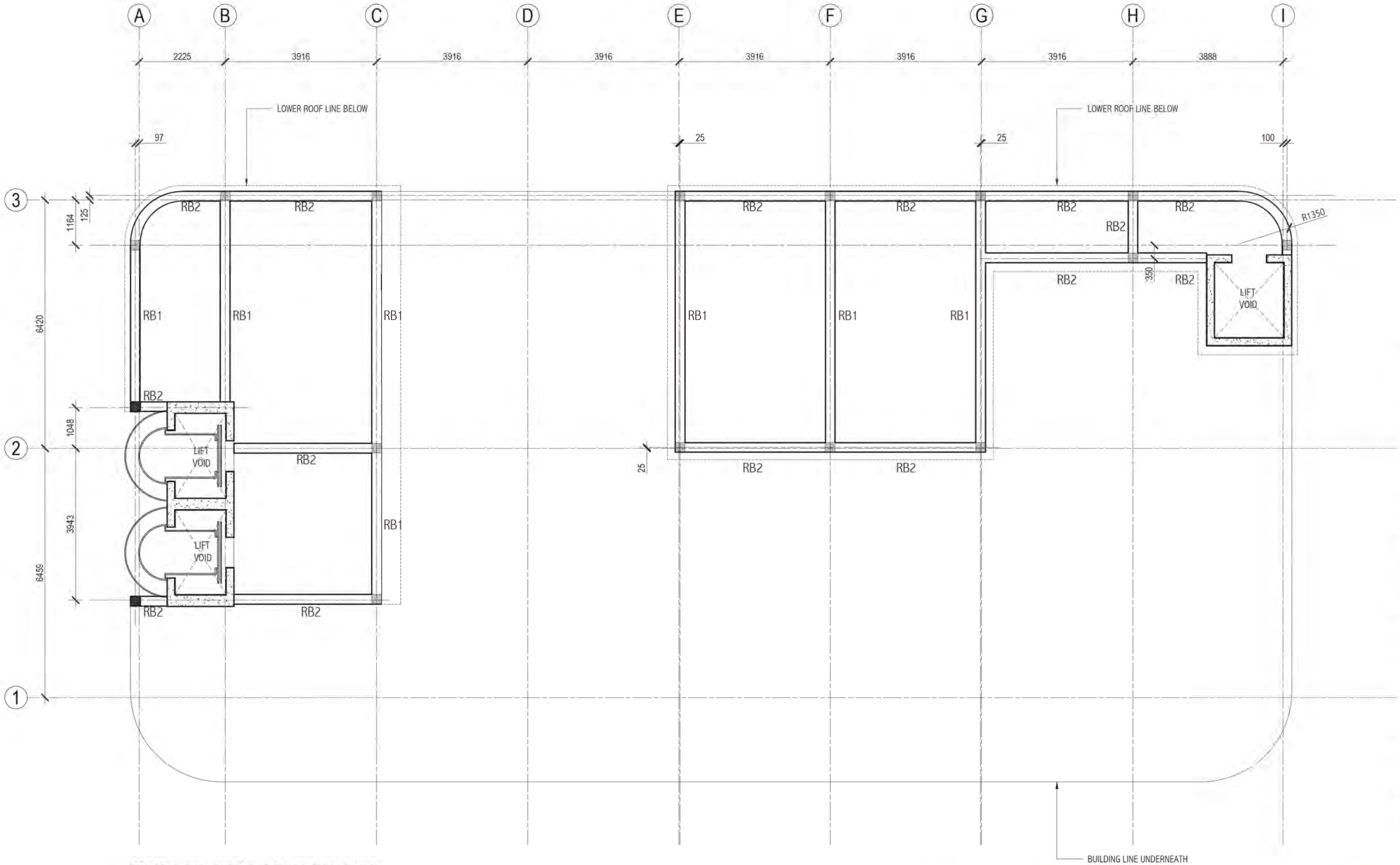
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

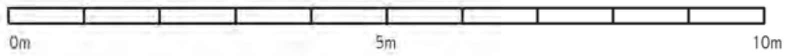
All dimensions to be checked on site

GENERAL NOTES



TERRACE ROOF BEAM LAYOUT

SCALE 1:100



APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
TERRACE ROOF BEAM LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By :
DILUSHA

Date :
DECEMBER 2023

Checked By :
SHAREEF

Design By :
ZAYAAN

Drawing Number :
21-107

Revision Number :
R02

File Name :
306-21-107R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

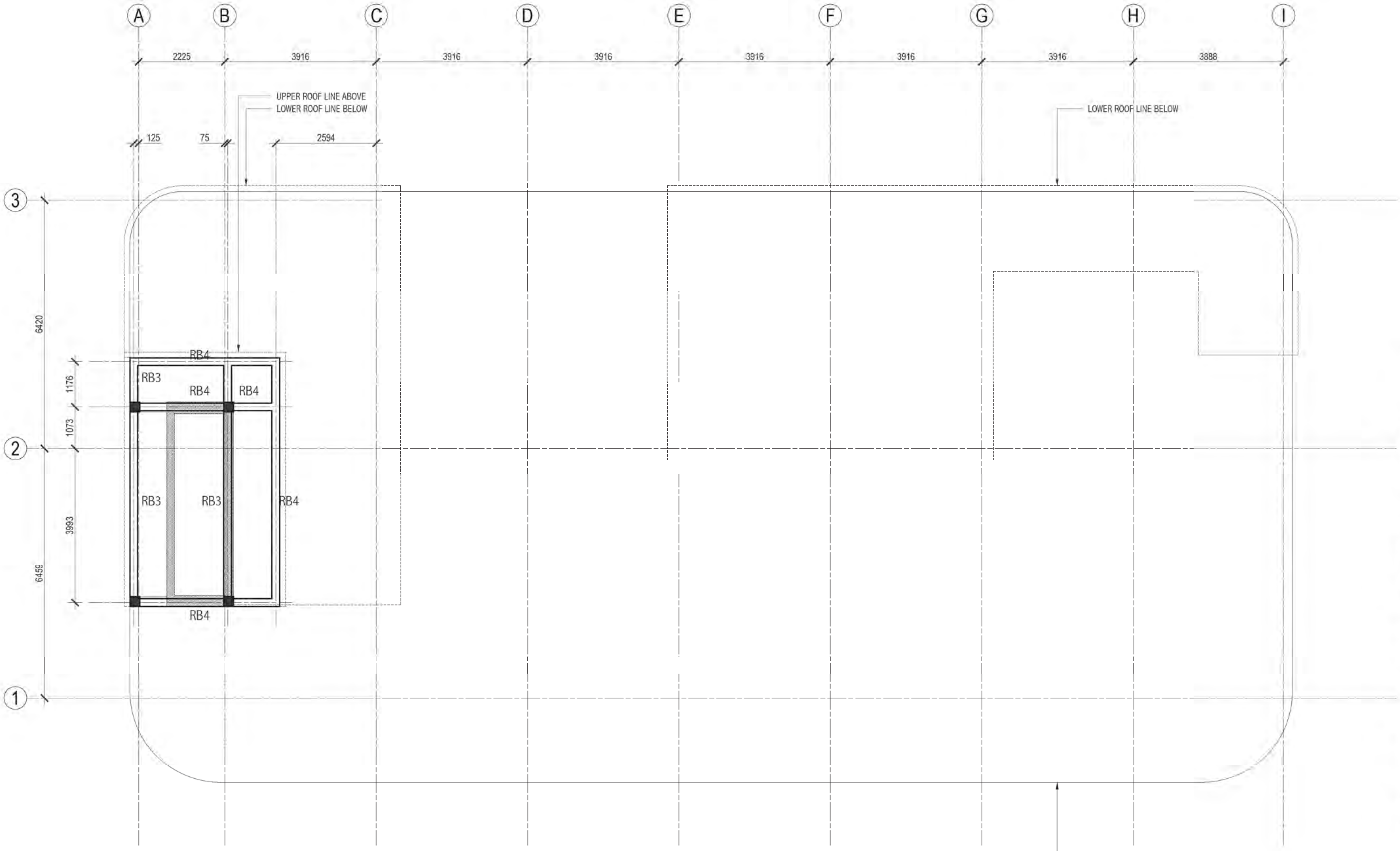
GEDOR CONSULTING PVT. LTD

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

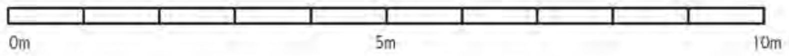
All dimensions to be checked on site

GENERAL NOTES



MACHINE ROOM FLOOR BEAM LAYOUT

SCALE 1:100



APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
MACHINE ROOM FLOOR BEAM LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-108

Revision Number :
R02

File Name :
306-21-108R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

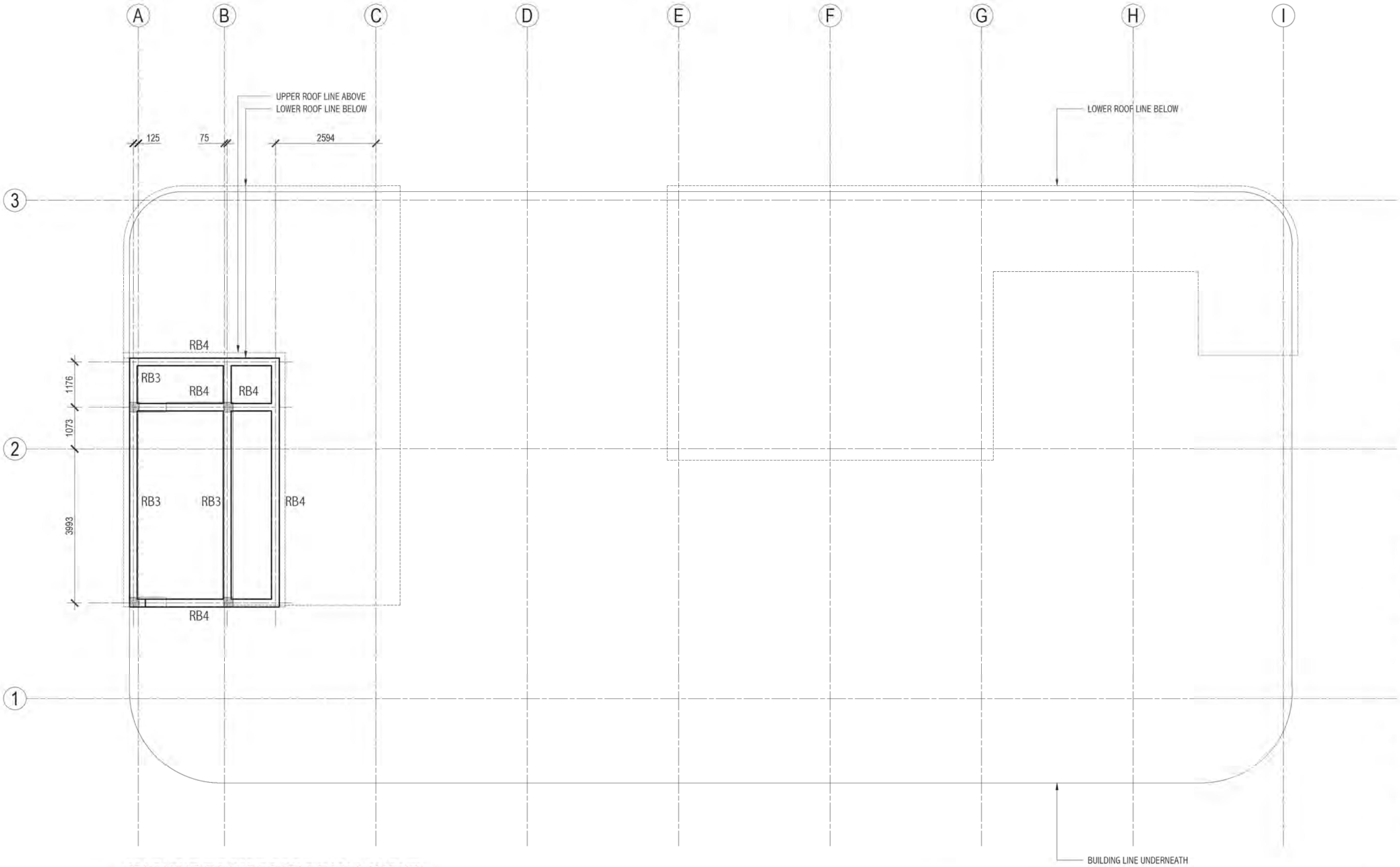
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



MACHINE ROOM ROOF BEAM LAYOUT
SCALE 1:100

0m
5m
10m

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
MACHINE ROOM ROOF BEAM LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By :
DILUSHA

Date :
DECEMBER 2023

Checked By :
SHAREEF

Design By :
ZAYAAN

Drawing Number :
21-109

Revision Number :
R02

File Name :
306-21-109R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

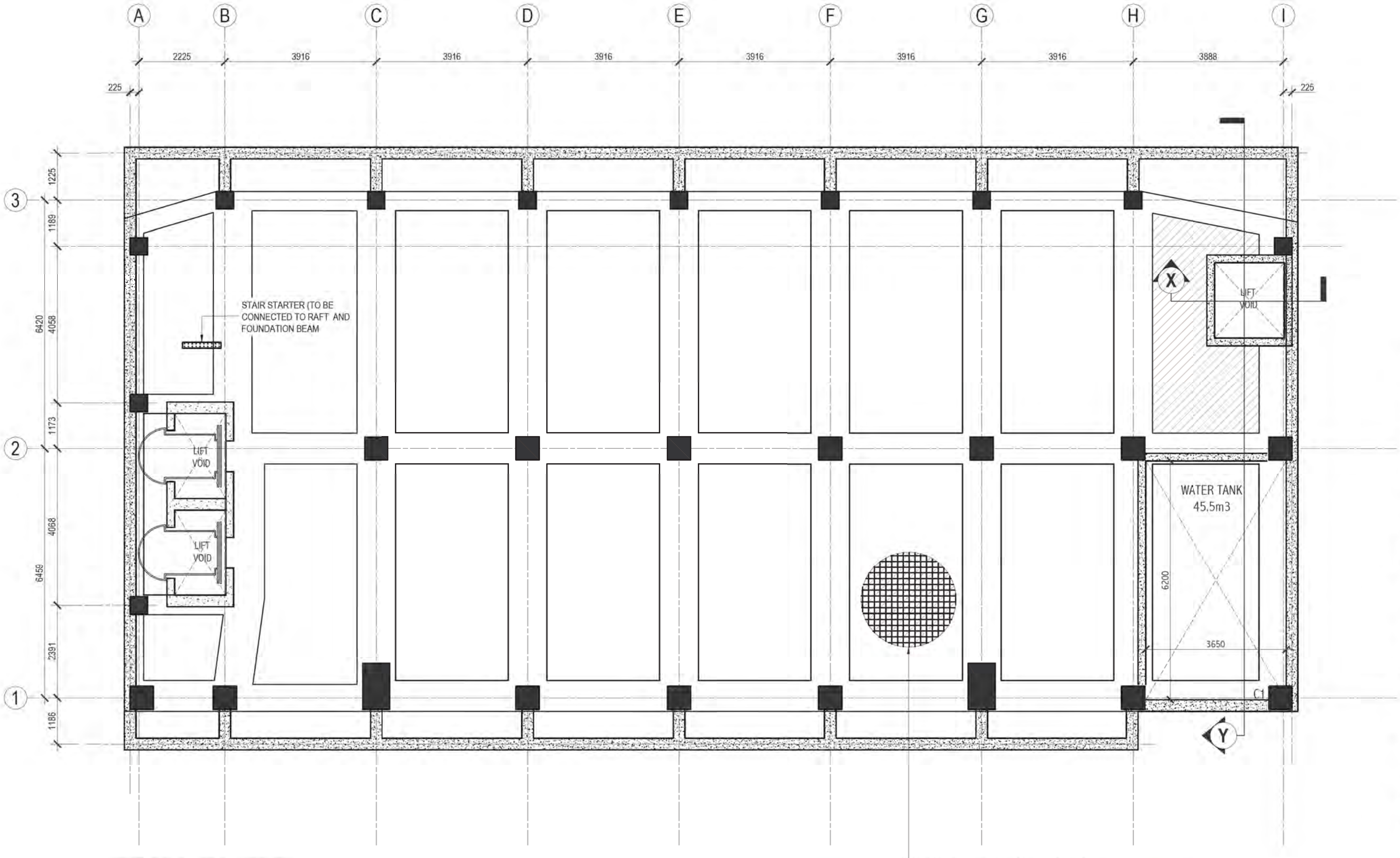
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



RAFT SLAB LAYOUT

SCALE 1:100

0m 5m 10m

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed **VALIDITY: 23.09.23 - 04.09.25**
Accredited No: BPR2023022B1 **B1-2023-022-001**

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef **VALIDITY: 23.09.23 - 04.09.25**
Accredited No: BPR2023010A1 **A1-2023-010-001**

NOTE:
B.W. = BOTH WAYS
C/C = CENTER TO CENTER

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX
Drawing Title :
RAFT SLAB LAYOUT

Scale :
1:100
Discipline :
STRUCTURAL
Stage :
SUBMISSION
Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**
Drawing Number : **21-110**
Revision Number : **R02**
File Name : 306-21-110R02.dwg

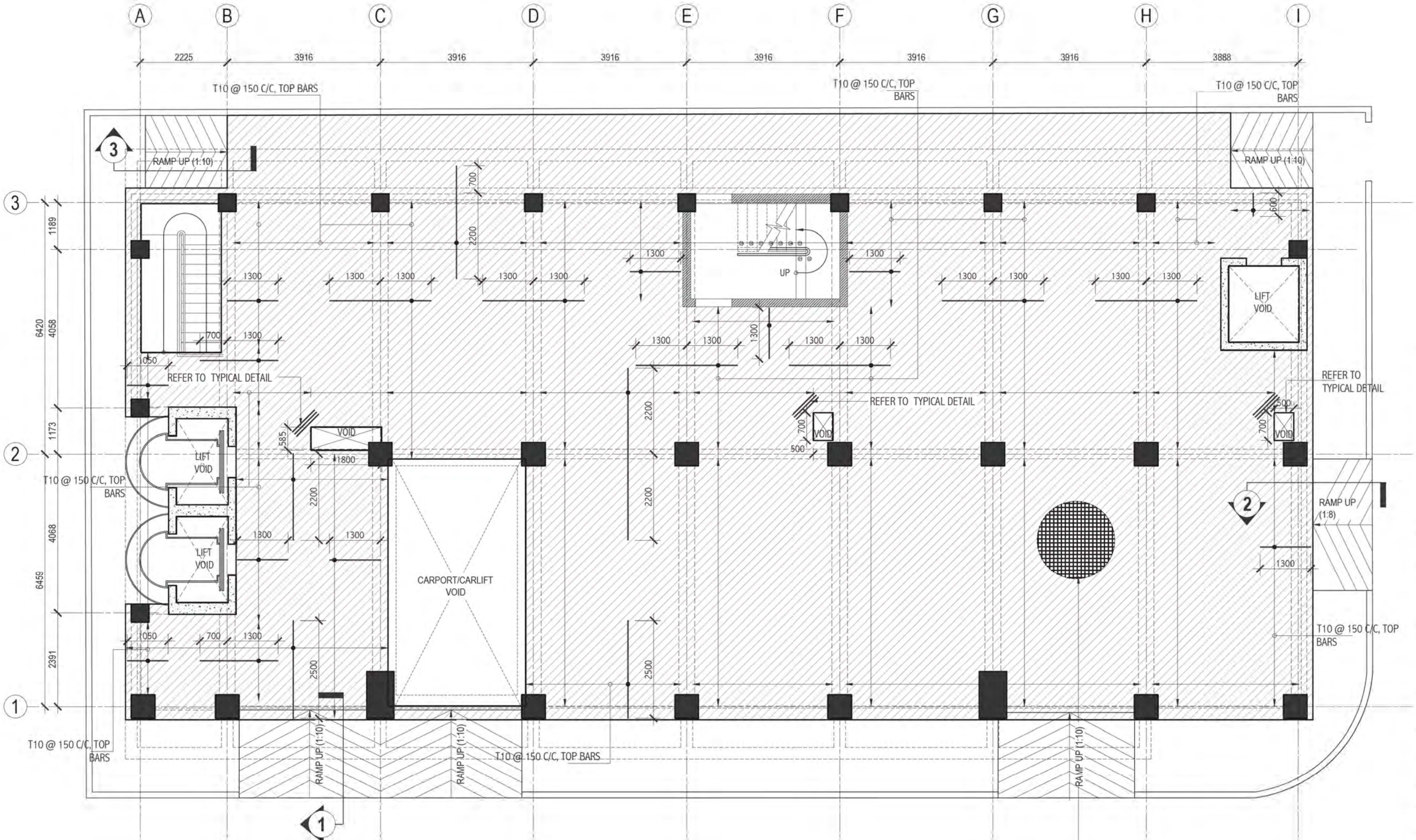
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site

GENERAL NOTES



175 THK. CONCRETE FLOOR SLAB WITH
T10 @ 150 C/C, B.W. BOTTOM BARS

GROUND FLOOR SLAB LAYOUT
SCALE 1:100

0m 5m 10m

NOTE:
B.W. = BOTH WAYS
C/C = CENTER TO CENTER

APPROVED
HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed **VALIDITY: 23.09.23 - 04.09.25**
Accredited No: BPR2023022B1 **B1-2023-022-001**

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef **VALIDITY: 23.09.23 - 04.09.25**
Accredited No: BPR2023010A1 **A1-2023-010-001**

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
GROUND FLOOR
SLAB LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-111

Revision Number :
R02

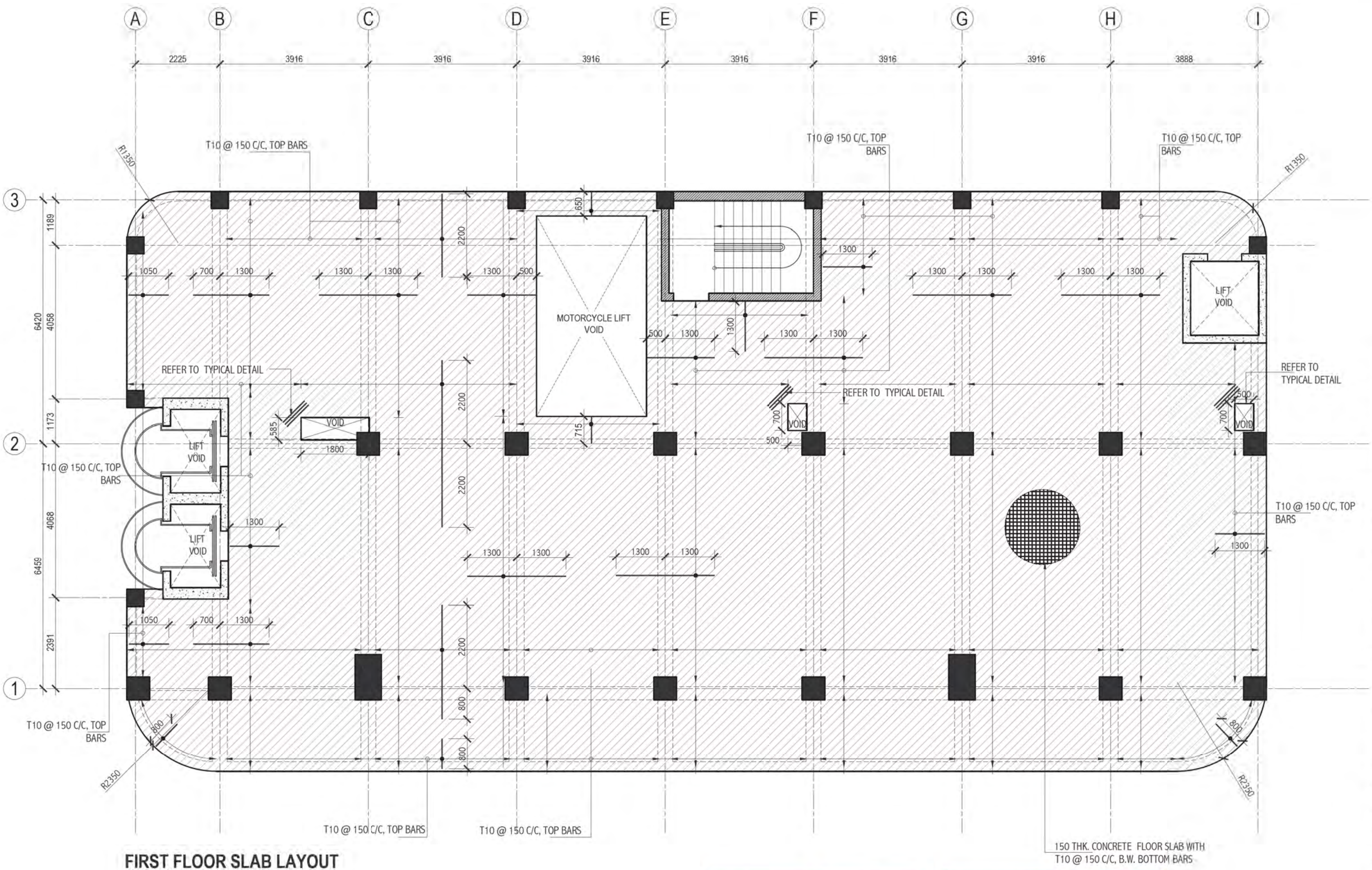
File Name :
306-21-111R02.dwg

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site



FIRST FLOOR SLAB LAYOUT

SCALE 1:100

0m 5m 10m

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

NOTE:
B.W. = BOTH WAYS
C/C = CENTER TO CENTER

GENERAL NOTES

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
FIRST FLOOR SLAB LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : DILUSHA
Date : DECEMBER 2023
Checked By : SHAREEF
Design By : ZAYAAN

Drawing Number :
21-112a

Revision Number :
R02

File Name :
306-21-112aR02.dwg

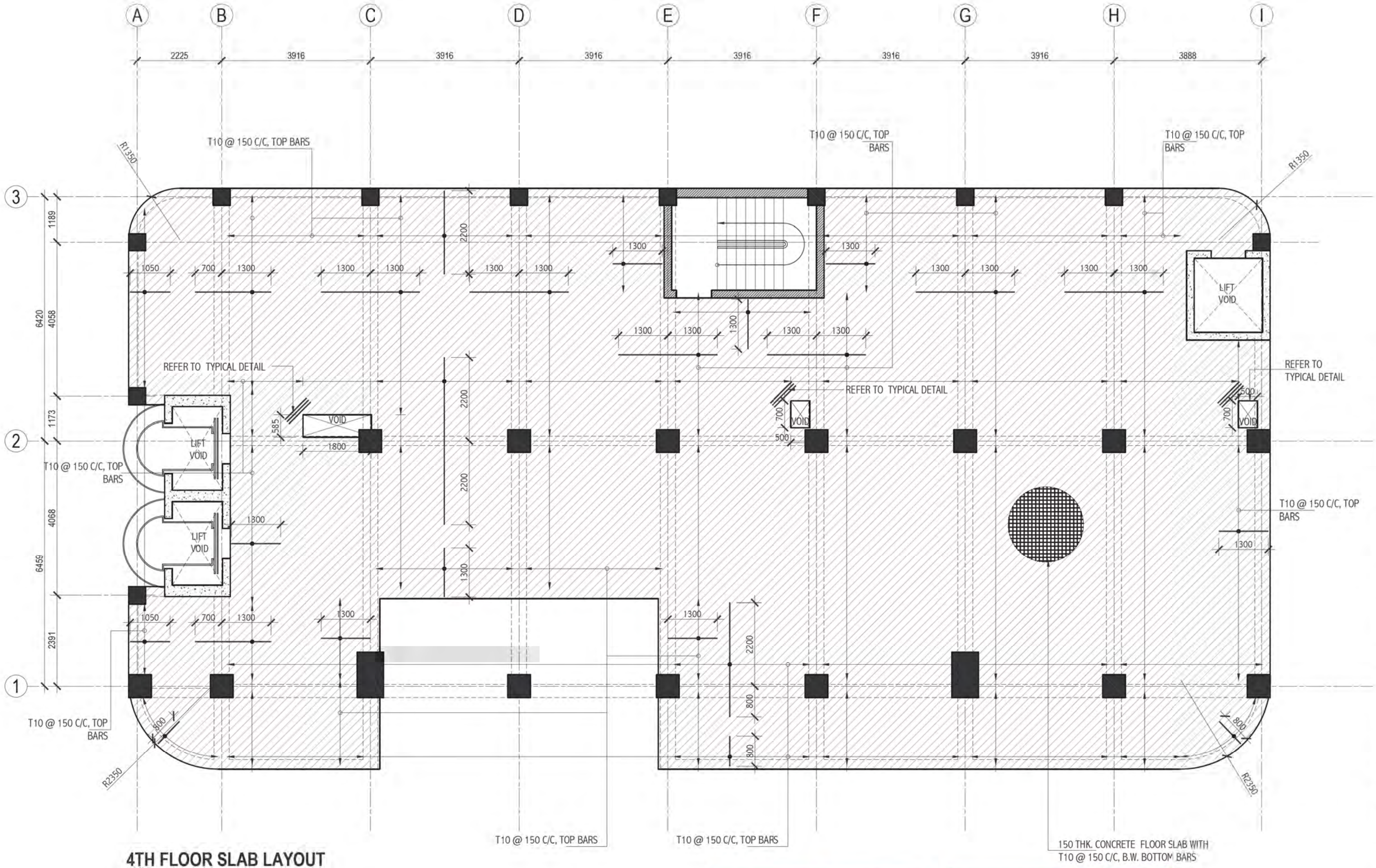
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

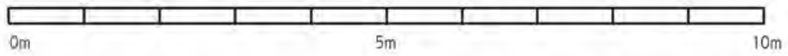
All dimensions to be checked on site

GENERAL NOTES



4TH FLOOR SLAB LAYOUT

SCALE 1:100



Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

NOTE:
B.W. = BOTH WAYS

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
4TH FLOOR
SLAB LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By :
DILUSHA
Checked By :
SHAREEF

Date :
DECEMBER 2023
Design By :
ZAYAAN

Drawing Number :
21-112

Revision Number :
R02

File Name :
306-21-112R02.dwg

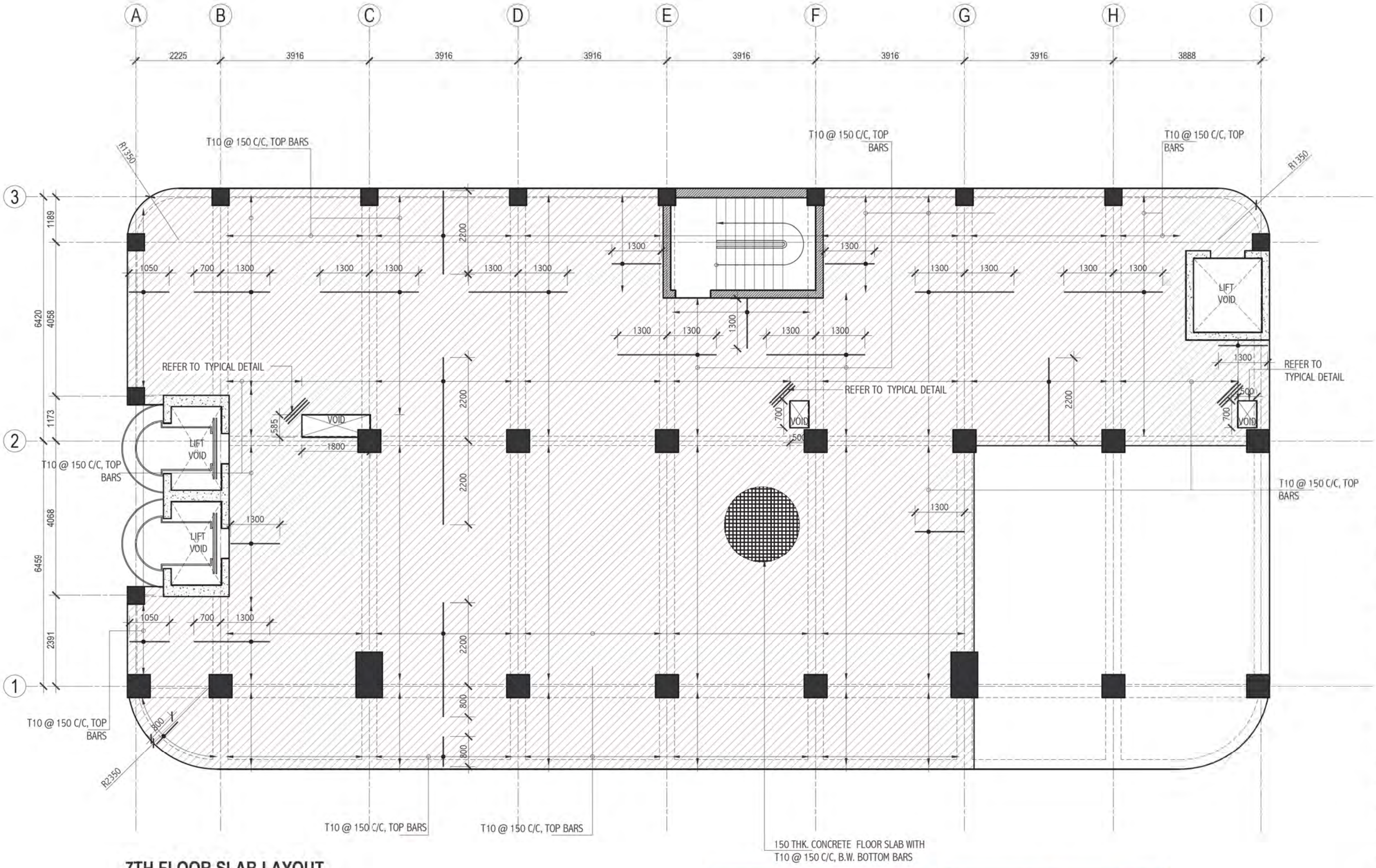
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

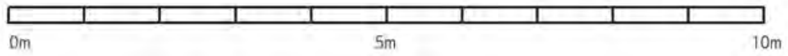
GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



7TH FLOOR SLAB LAYOUT
SCALE 1:100



Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed **VALIDITY:** 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef **VALIDITY:** 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

NOTE:
B.W. = BOTH WAYS
C/C = CENTER TO CENTER

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
7TH FLOOR
SLAB LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-113

Revision Number :
R02

File Name :
306-21-113R02.dwg

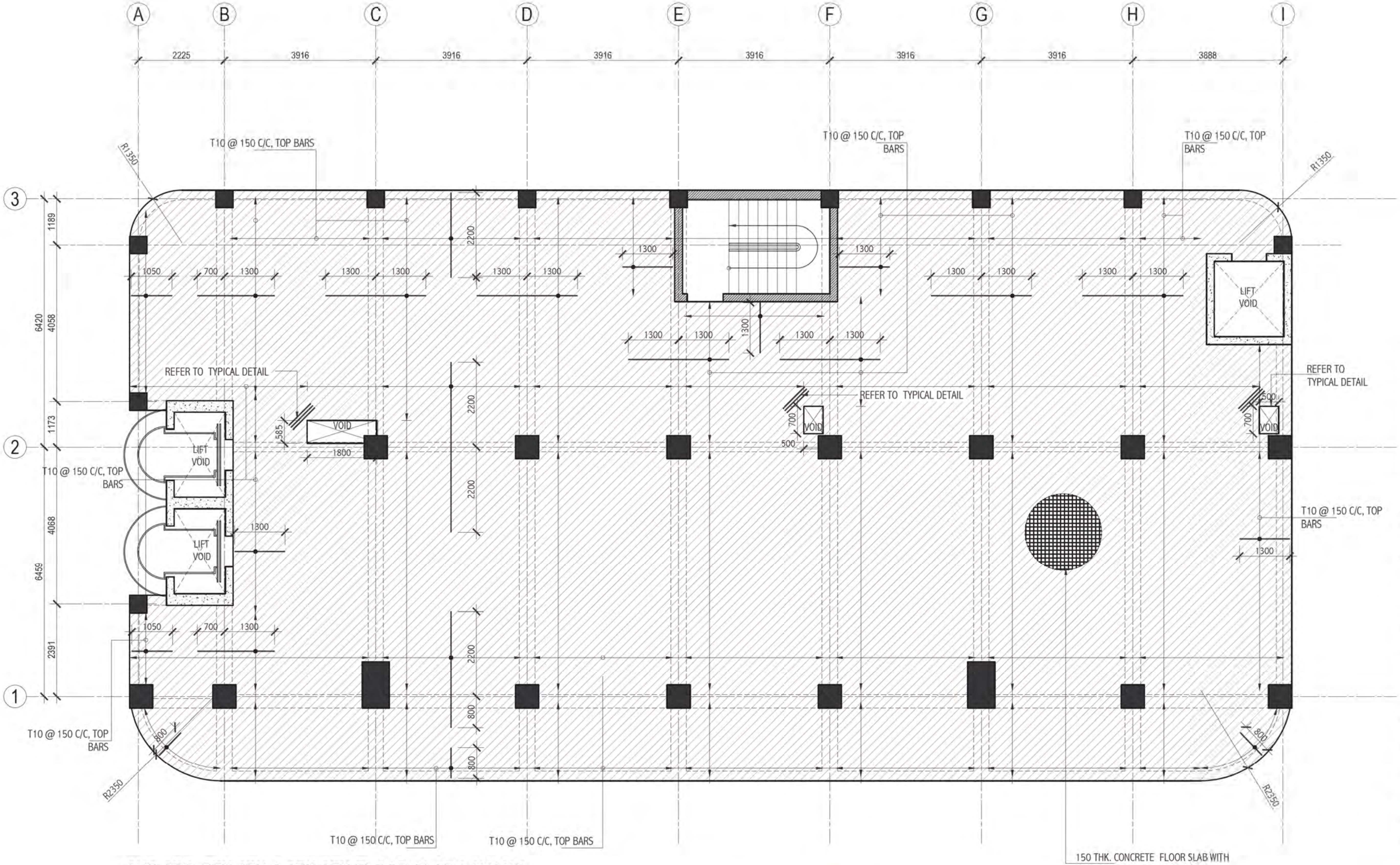
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



2ND-3RD, 5TH-6TH & 8TH-9TH FLOOR SLAB LAYOUT
SCALE 1:100

0m
5m
10m

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
2ND-3RD, 5TH-6TH &
8TH-9TH FLOOR SLAB
LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : DILUSHA
Date : DECEMBER 2023
Checked By : SHAREEF
Design By : ZAYAAN

Drawing Number :
21-114

Revision Number :
R02

File Name :
306-21-114R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

NOTE:
B.W. = BOTH WAYS
C/C = CENTER TO CENTER

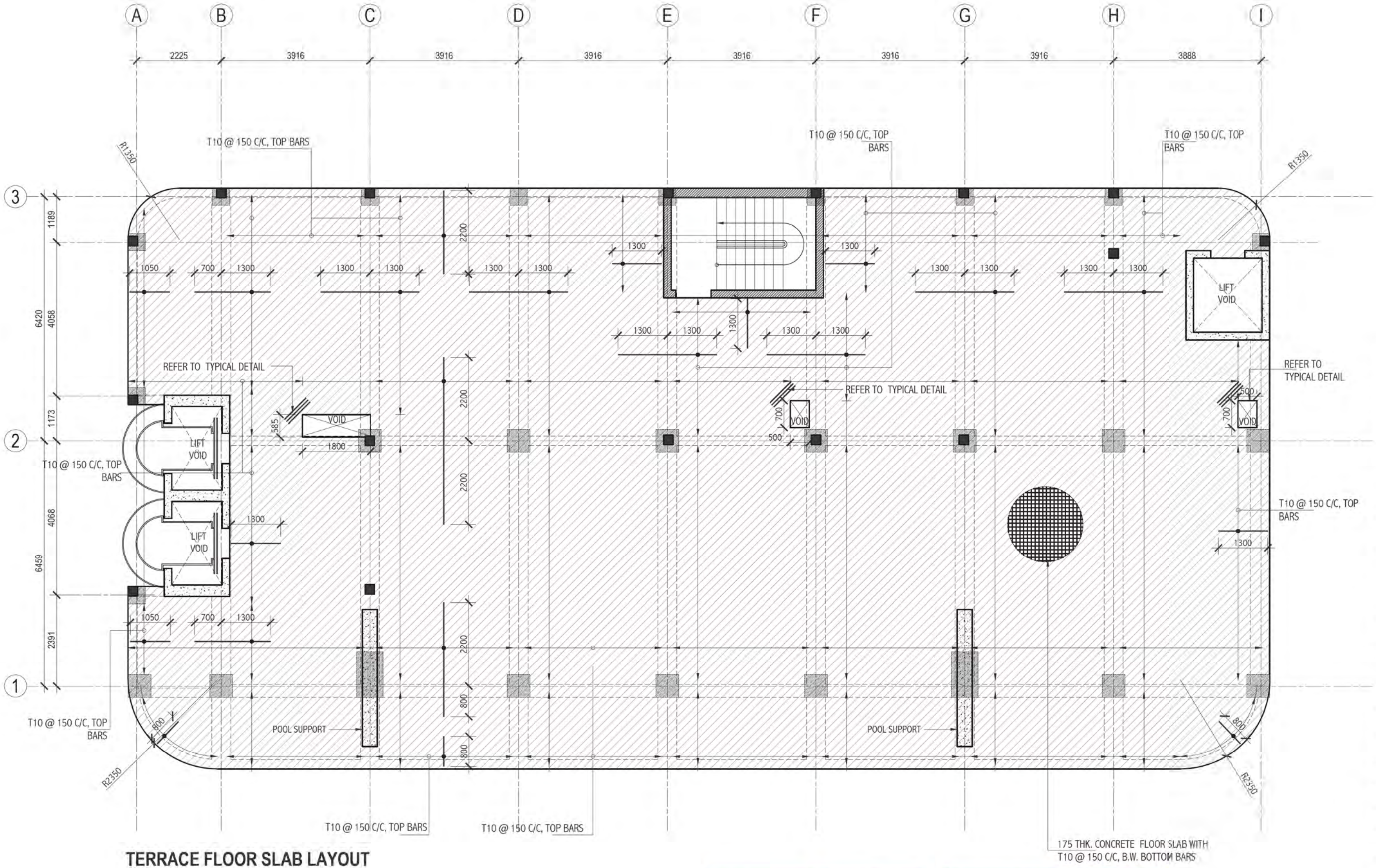
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



TERRACE FLOOR SLAB LAYOUT

SCALE 1:100

0m 5m 10m

NOTE:
B.W. = BOTH WAYS
C/C = CENTER TO CENTER

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
TERRACE FLOOR SLAB LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-115a

Revision Number :
R02

File Name :
306-21-115aR02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

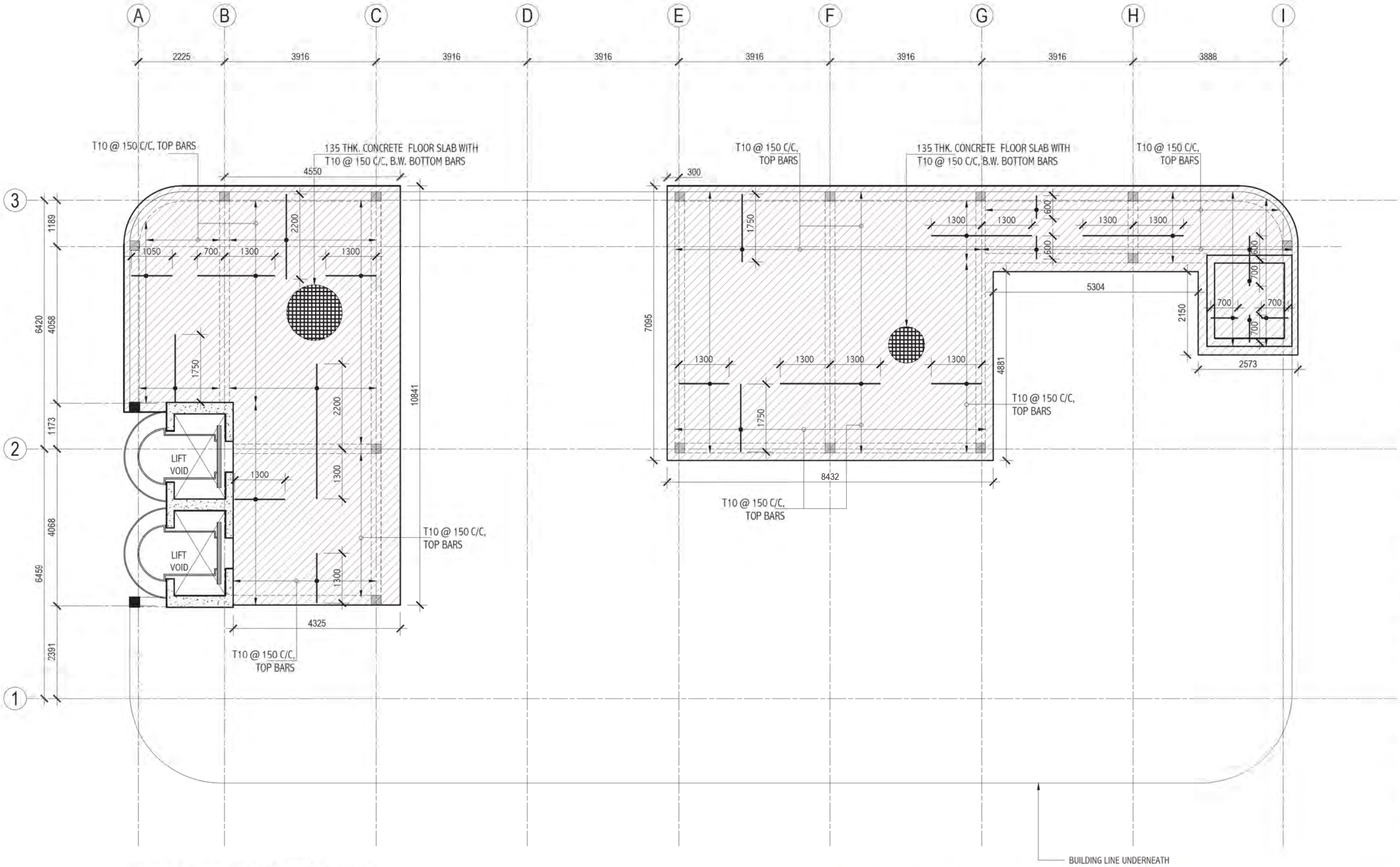
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



TERRACE ROOF SLAB LAYOUT
SCALE 1:100

0m 5m 10m

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
TERRACE ROOF
SLAB LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number : **21-115**

Revision Number :
R02

File Name :
306-21-115R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

NOTE:
B.W. = BOTH WAYS
C/C = CENTER TO CENTER

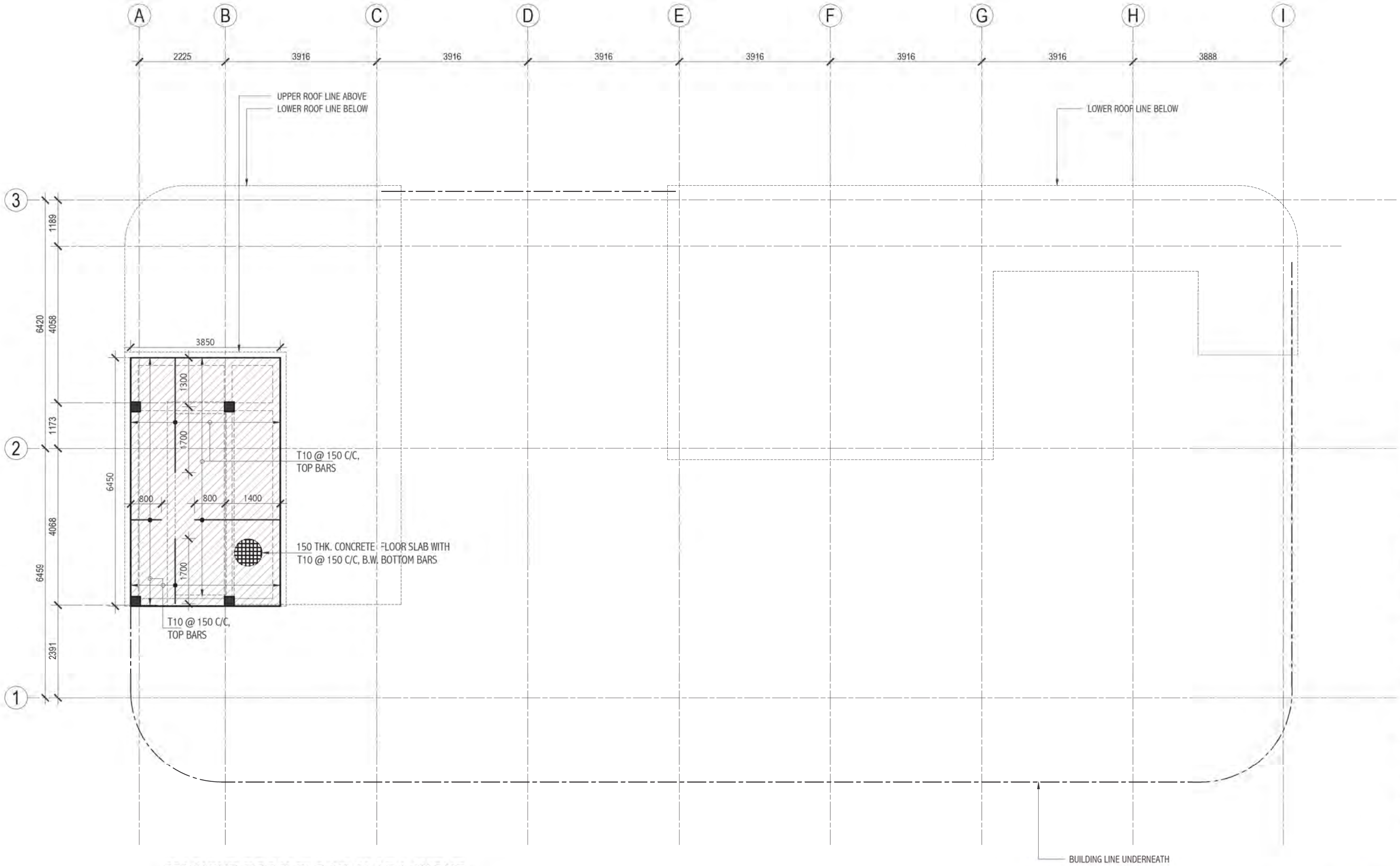
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

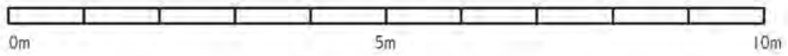
GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES



MACHINE ROOM FLOOR SLAB LAYOUT
SCALE 1:100



APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
MACHINE ROOM FLOOR SLAB LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By :
DILUSHA
Date :
DECEMBER 2023
Checked By :
SHAREEF
Design By :
ZAYAAN

Drawing Number :
21-116

Revision Number :
R02

File Name :
306-21-116R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

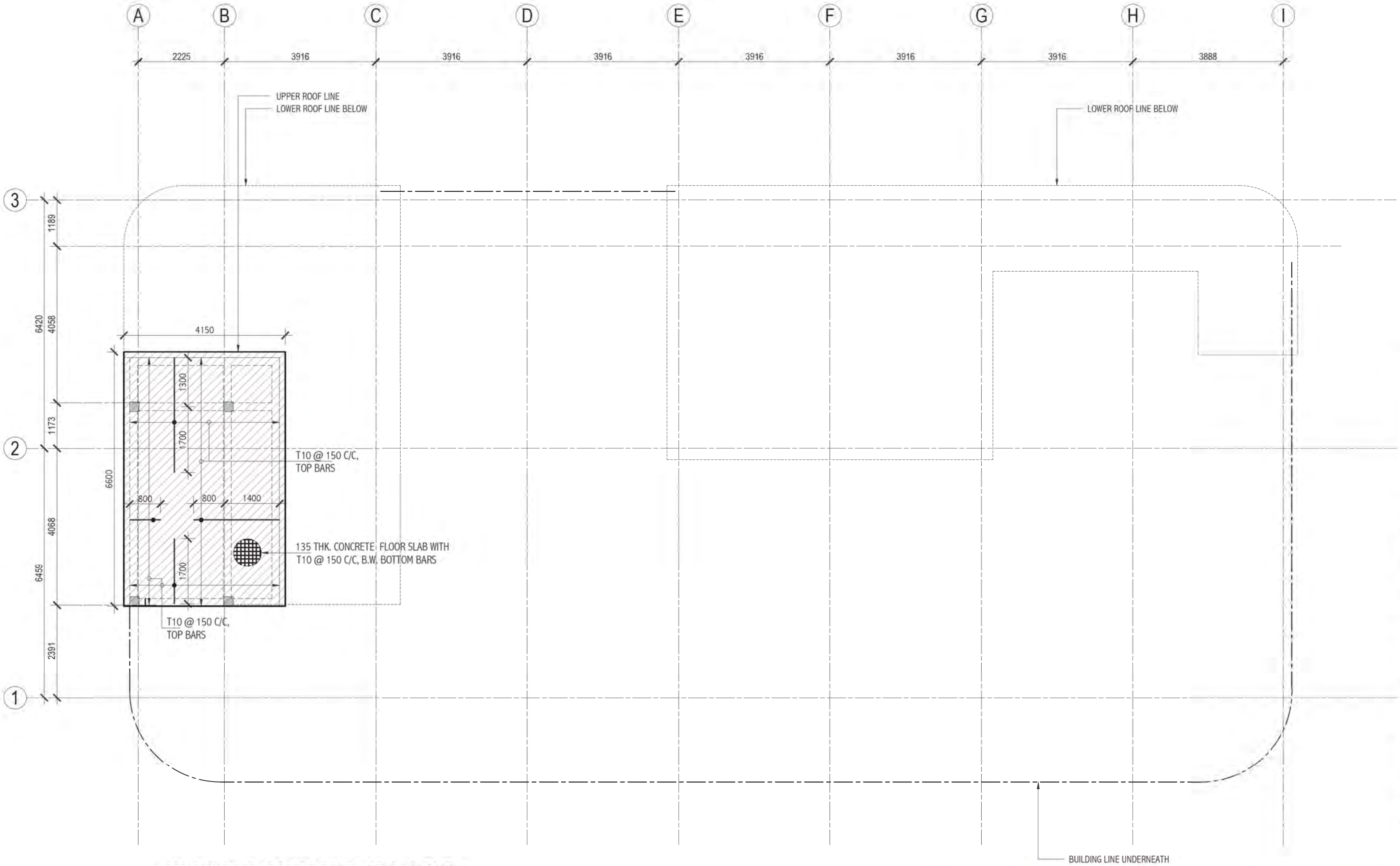
Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

All dimensions to be checked on site

GENERAL NOTES



MACHINE ROOM ROOF SLAB LAYOUT

SCALE 1:100

0m 5m 10m

APPROVED

HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
MACHINE ROOM ROOF SLAB LAYOUT

Scale :
1:100

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By :
DILUSHA
Date :
DECEMBER 2023
Checked By :
SHAREEF
Design By :
ZAYAAN

Drawing Number :
21-117

Revision Number :
R02

File Name :
306-21-117R02.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

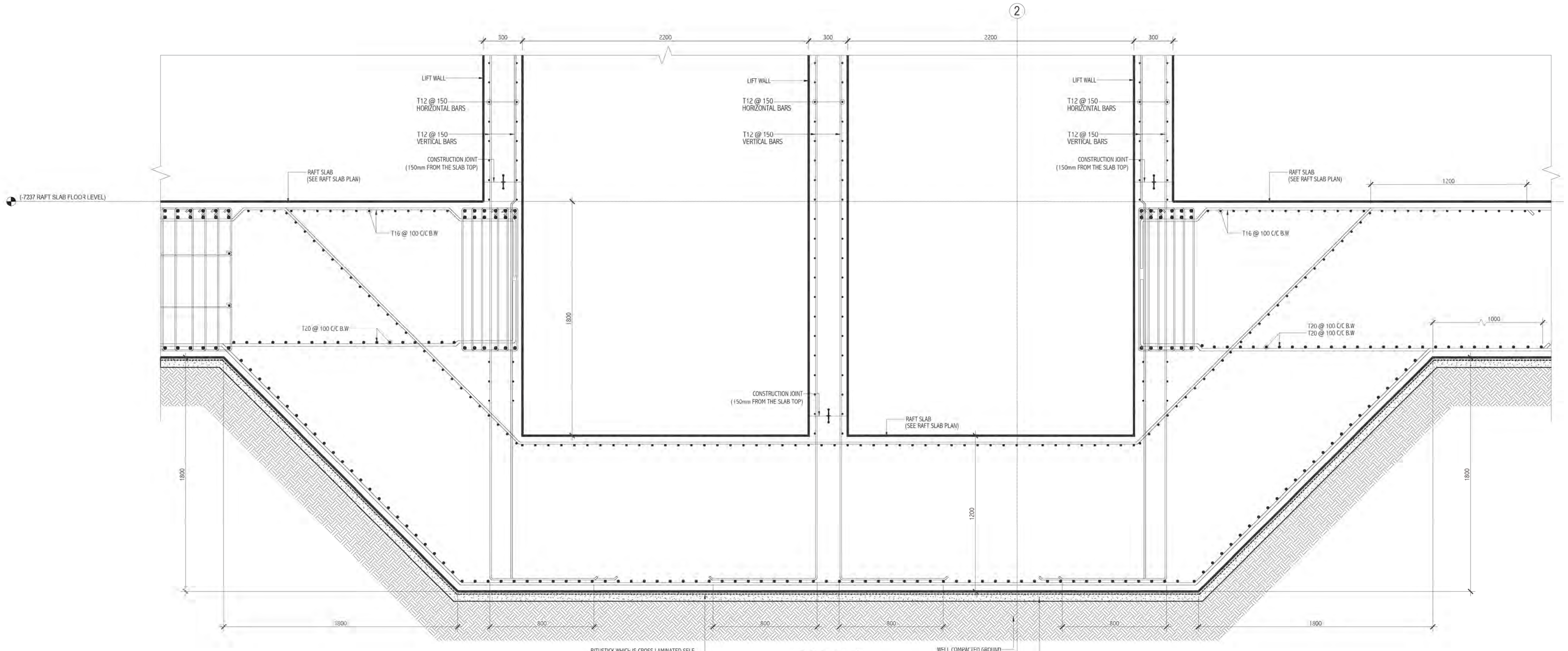
Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

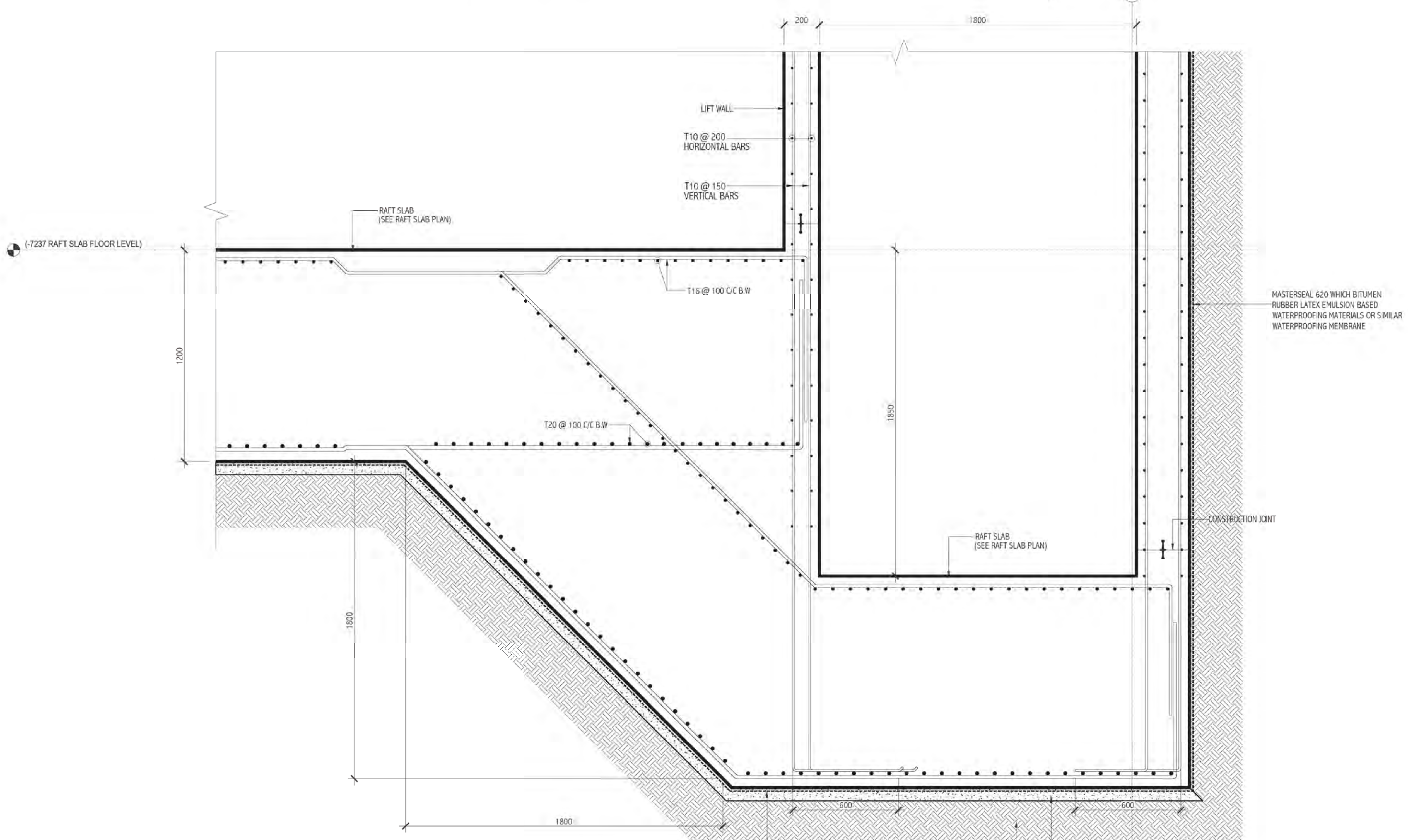
GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site



SECTION - A

SCALE 1:20



SECTION - B

SCALE 1:20

GENERAL NOTES

APPROVED
HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
STRUCTURAL SECTION - A
STRUCTURAL SECTION - B

Scale :
1:20

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number : **21-201**

Revision Number :
R02

File Name :
306-21-201R02.dwg

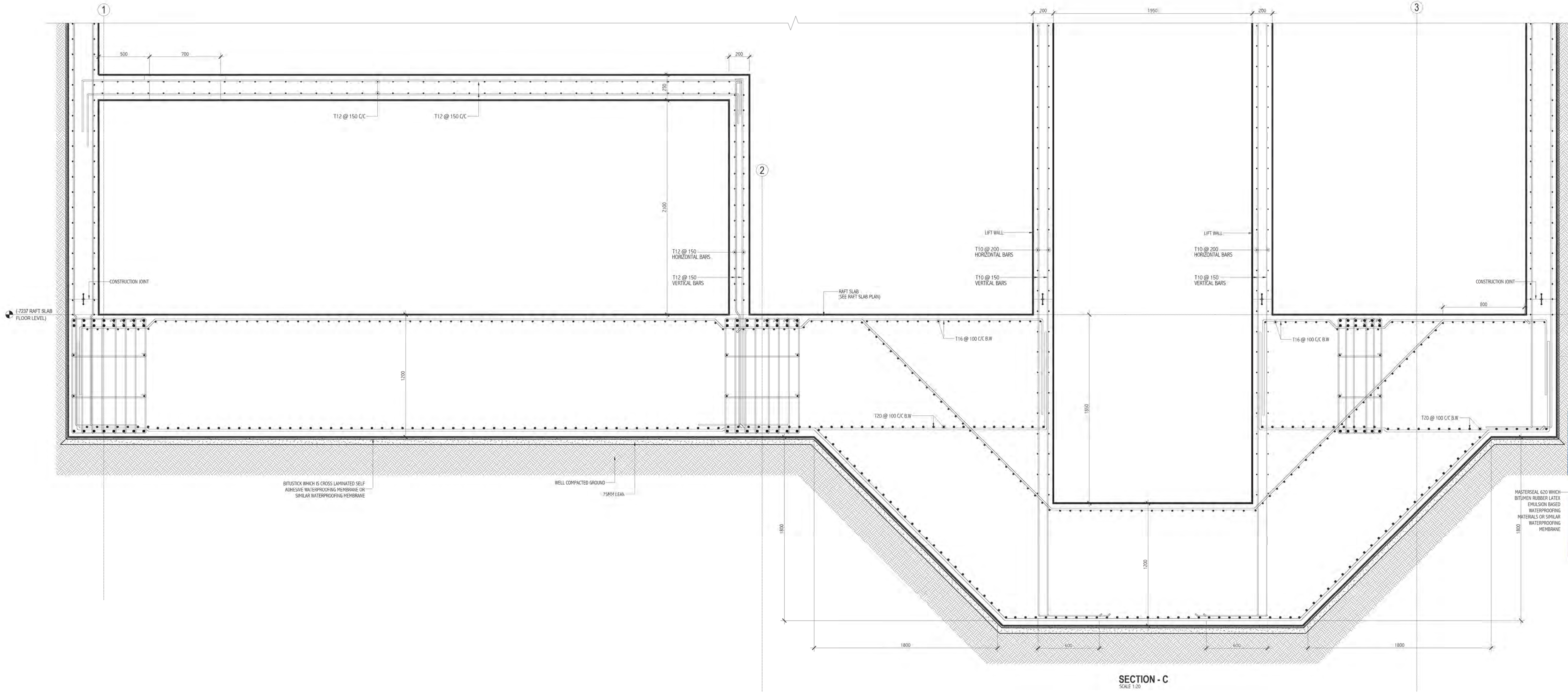
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site.

GENERAL NOTES



SECTION - C
SCALE 1:20

APPROVED
HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
**OFFICE COMPLEX
HULHUMALE'**

Building Name :
OFFICE COMPLEX

Drawing Title :
STRUCTURAL SECTION - C

Scale :
1:20

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-202

Revision Number :
R02

File Name :
306-21-202R02.dwg

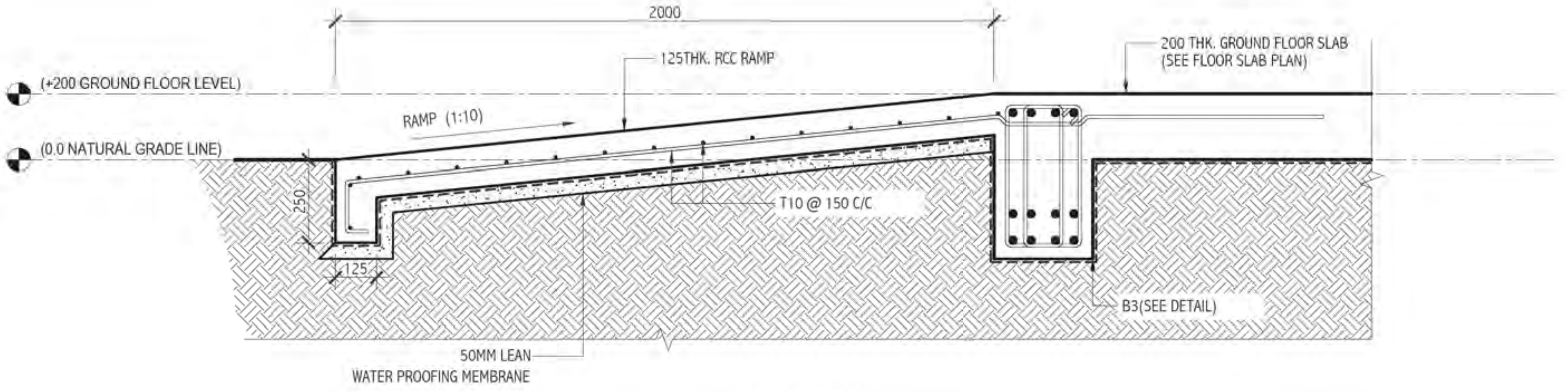
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

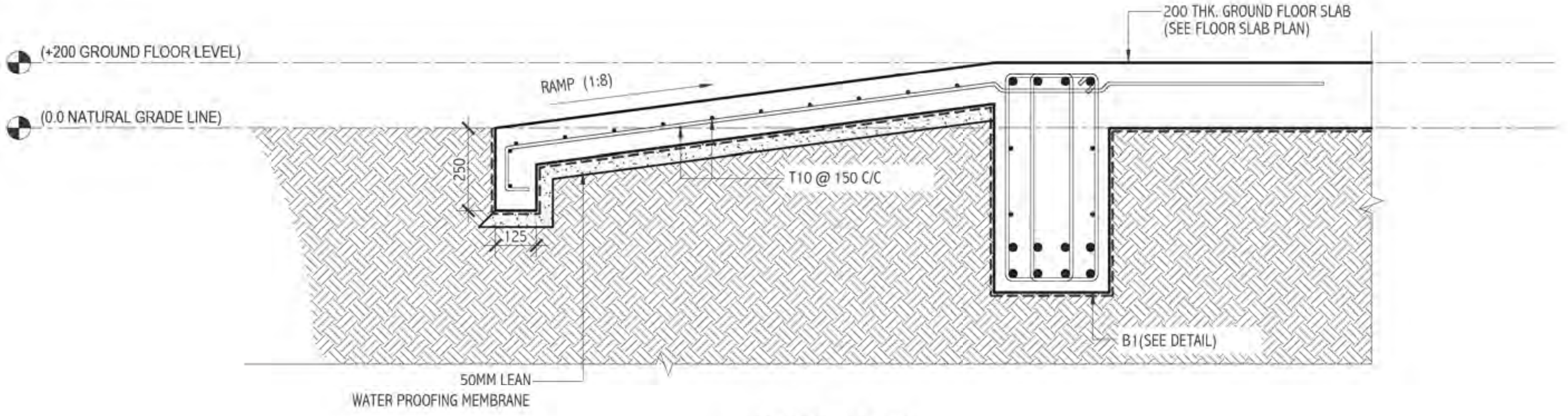
All dimensions to be checked on site.

GENERAL NOTES



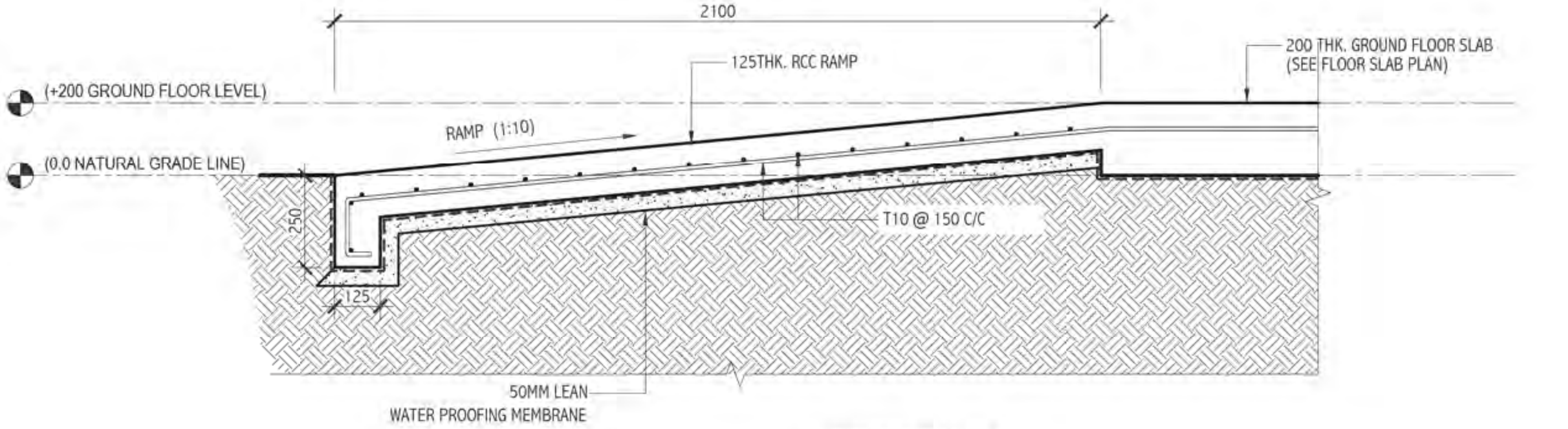
SECTION -01

SCALE 1:20



SECTION -02

SCALE 1:20



SECTION -03

SCALE 1:20

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

APPROVED
HOUSING DEVELOPMENT CORPORATION

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
STRUCTURAL SECTION -01
STRUCTURAL SECTION -02
STRUCTURAL SECTION -03

Scale :
1:20

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : DILUSHA
Date : DECEMBER 2023
Checked By : SHAREEF
Design By : ZAYAAN

Drawing Number : 21-203

Revision Number : R02

File Name : 306-21-203R02.dwg

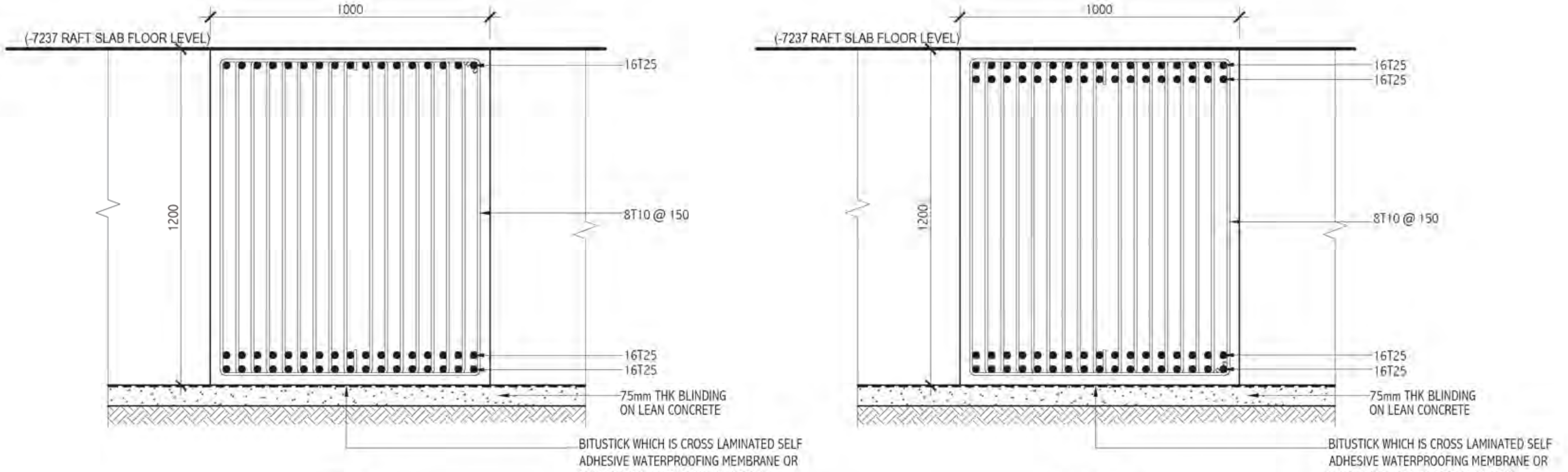
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site

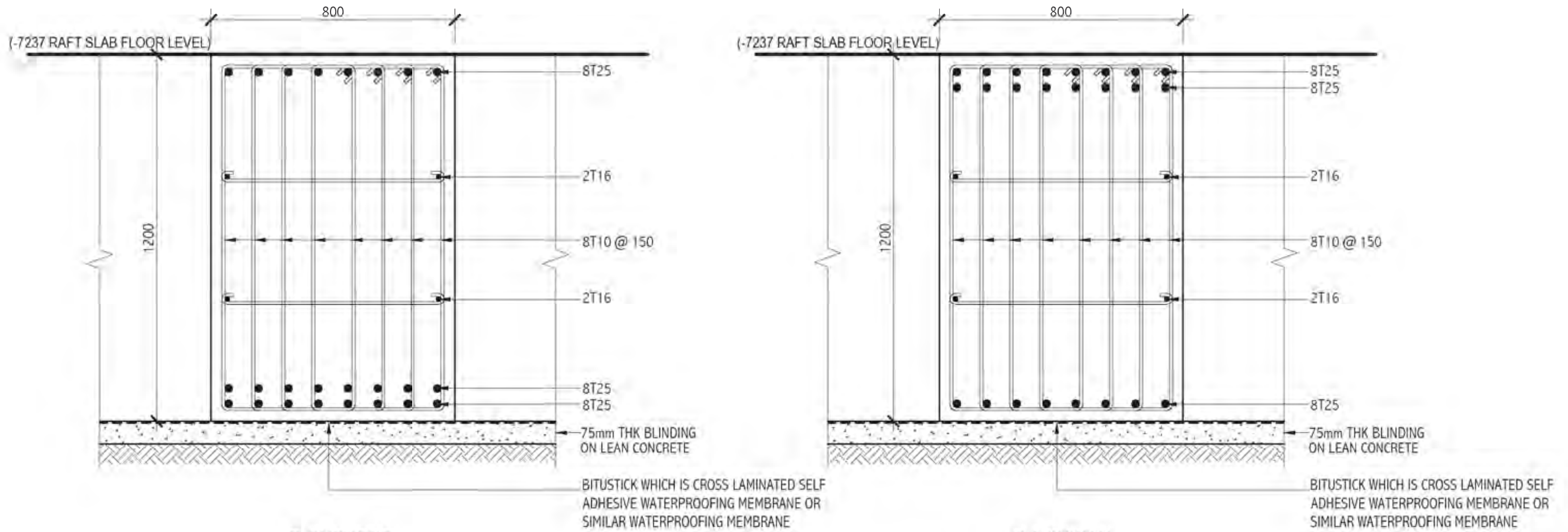
GENERAL NOTES



@ SUPPORT

@ MIDSPAN

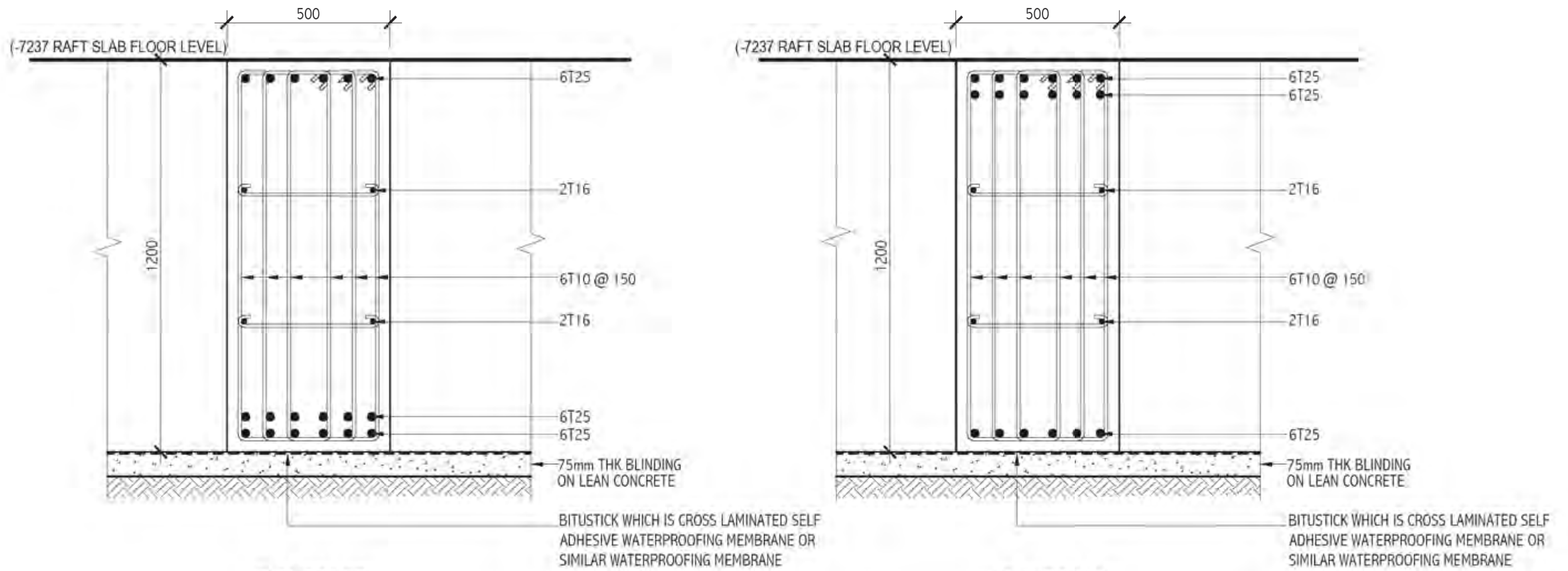
FB1



@ SUPPORT

@ MIDSPAN

FB2



@ SUPPORT

@ MIDSPAN

FB3

FOUNDATION BEAM (FB) DETAIL

SCALE 1:20

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
FOUNDATION BEAM (FB) DETAILS

Scale :
1:20

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-501

Revision Number :
R02

File Name :
306-21-501R02.dwg

APPROVED
HOUSING DEVELOPMENT CORPORATION

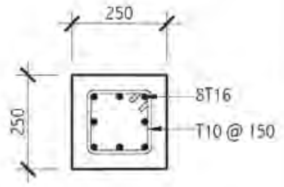
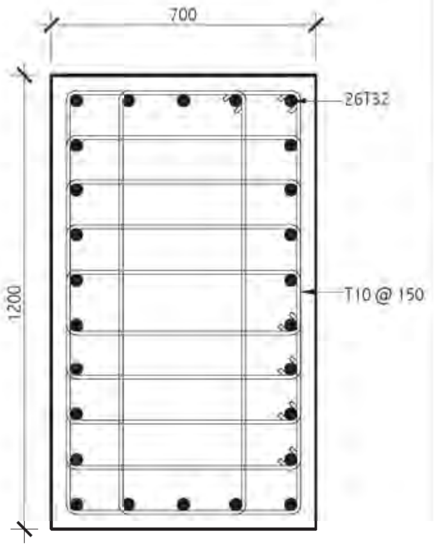
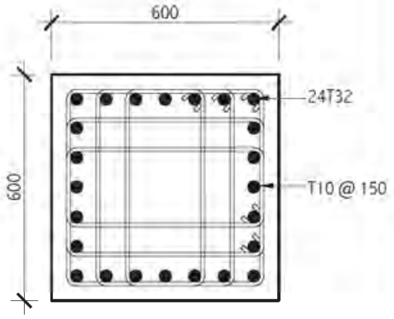
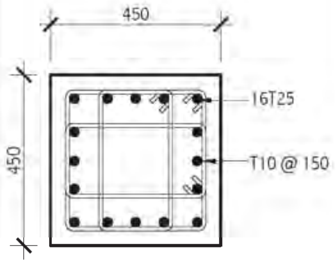
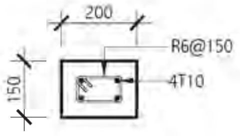
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

GENERAL NOTES

TERRACE FLOOR TO MACHINE ROOM					
BASEMENT TO TERRACE FLOOR					
SIZE	1200 X 700	600 X 600	450 X 450	250 X 250	150 X 200
COLUMN NAME	C1	C2	C3	C4	C5 (BOUNDARY WALL)

COLUMN (C) DETAILS

SCALE 1:20

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF
R03	06/02/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
COLUMN (C) DETAILS

Scale :
1:20

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-502

Revision Number :
R03

File Name :
306-21-502R03.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

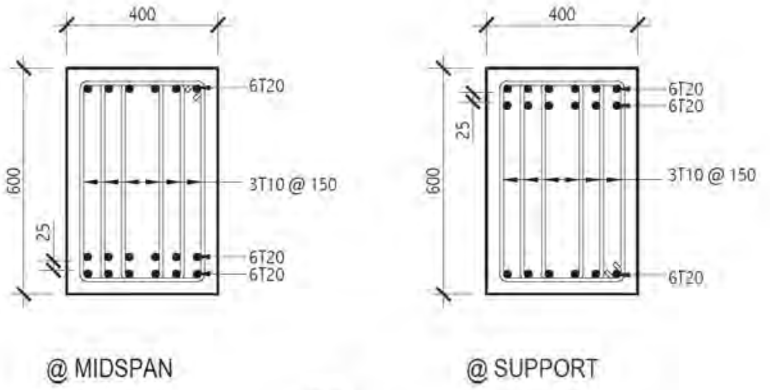
Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

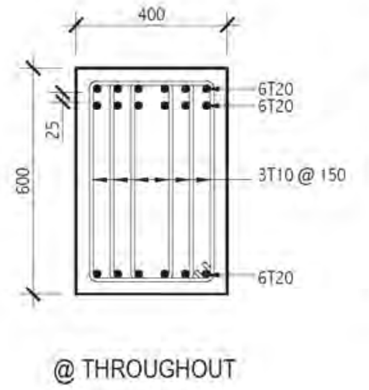
Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

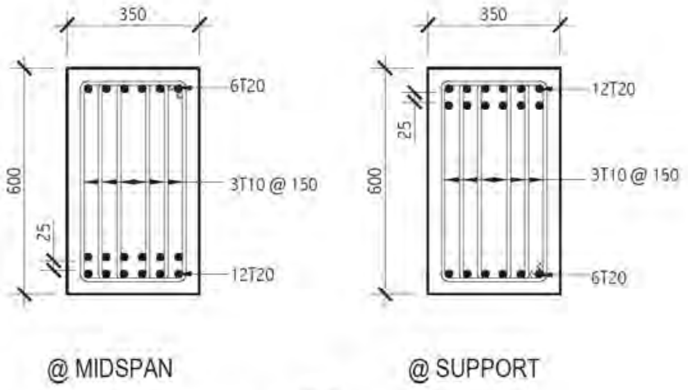
All dimensions to be checked on site



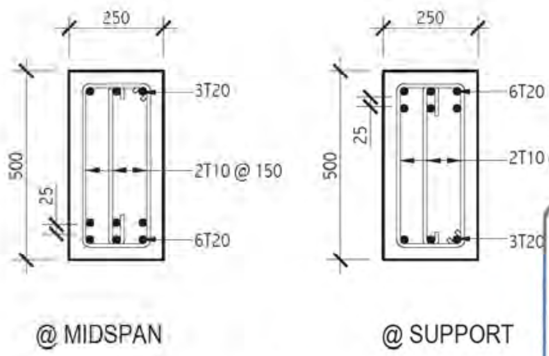
B1
LEVEL 1-10



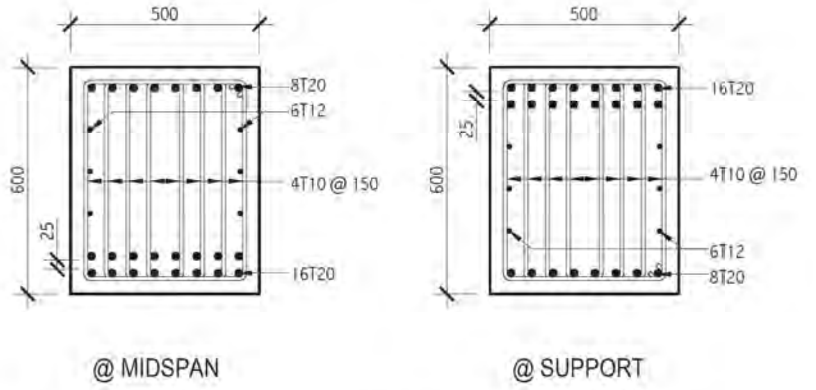
CB1
LEVEL 1-10



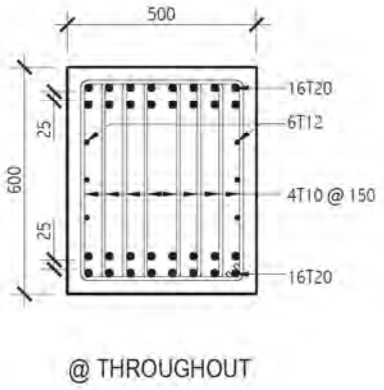
B2



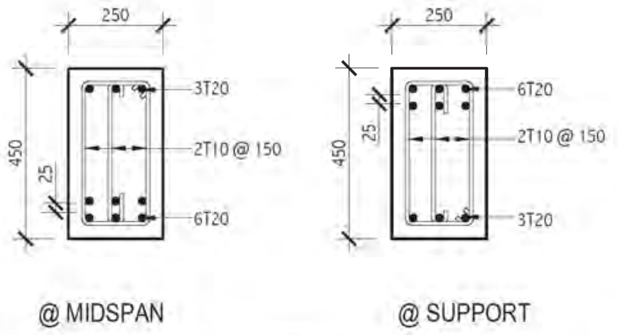
B3



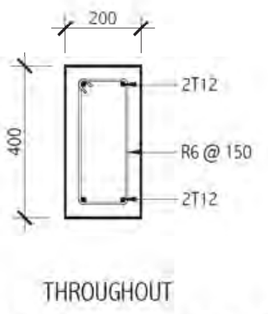
B1
LEVEL TERRACE



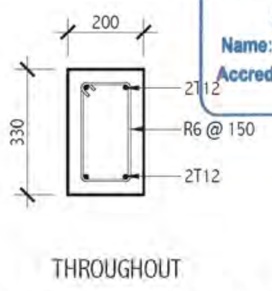
CB1
LEVEL TERRACE



B4

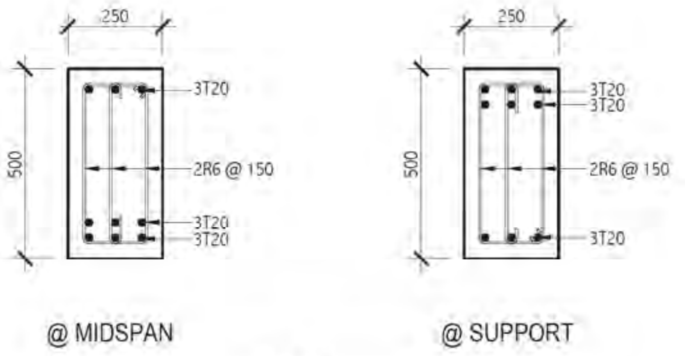


MID-LANDING BEAM-01

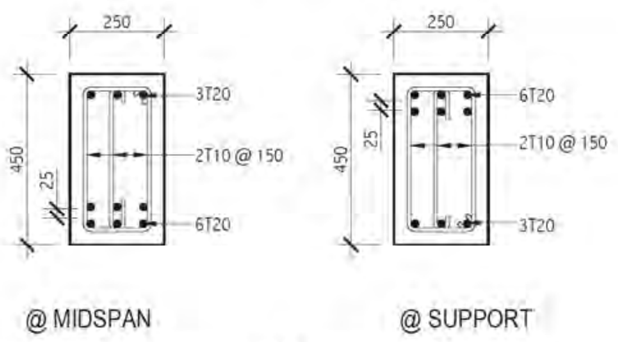


MID-LANDING BEAM-02

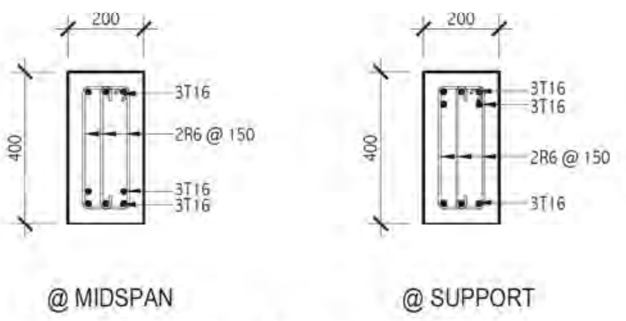
FLOOR BEAM (B) DETAIL
SCALE 1:20



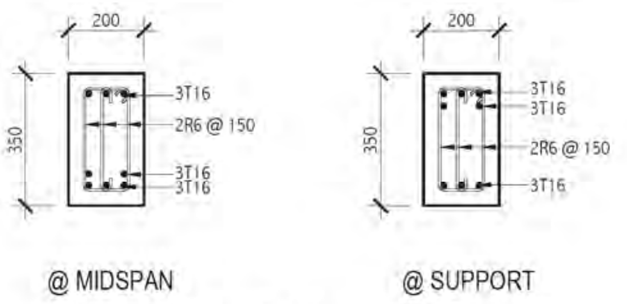
RB1



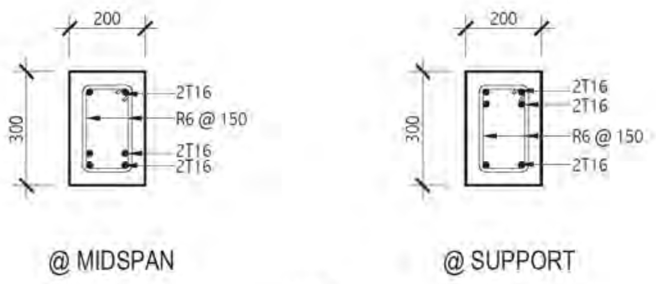
RB2



RB3

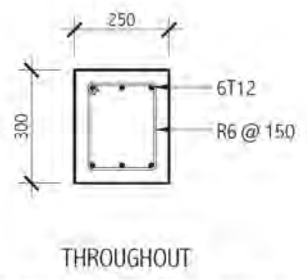


RB4

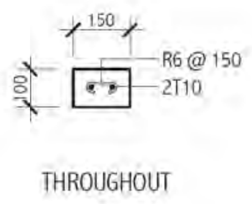


RB5

ROOF BEAM (RB) DETAIL
SCALE 1:20



GROUND BEAM (GB1)



B5

BOUNDARY WALL BEAMS DETAIL
SCALE 1:20

GENERAL NOTES

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF
R03	06/02/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

APPROVED
HOUSING DEVELOPMENT CORPORATION

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
BEAM (B) DETAILS
ROOF BEAM (RB) DETAILS

Scale :
1:20

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : DILUSHA
Date : DECEMBER 2023
Checked By : SHAREEF
Design By : ZAYAAN

Drawing Number :
21-503

Revision Number :
R03

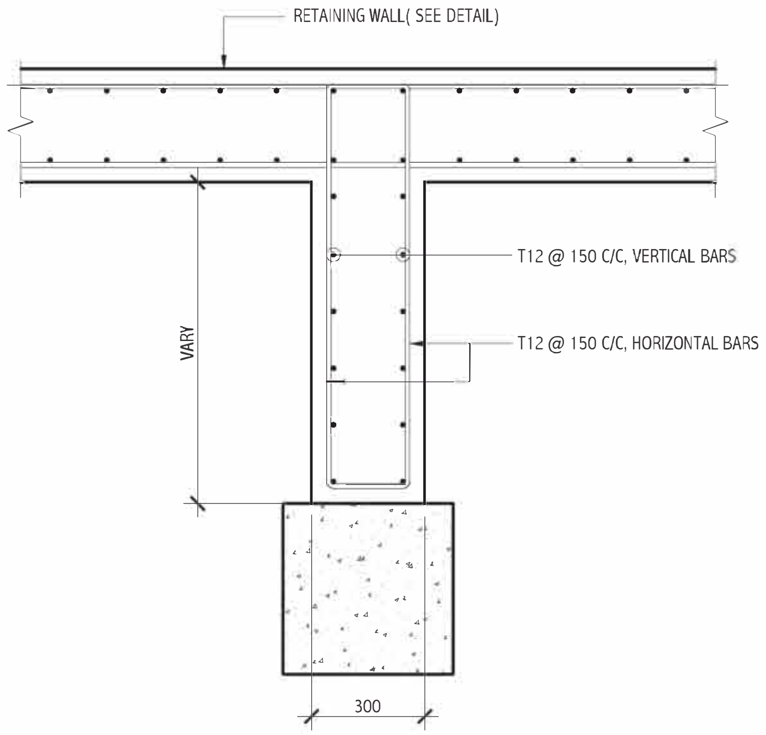
File Name :
306-21-503R03.dwg

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

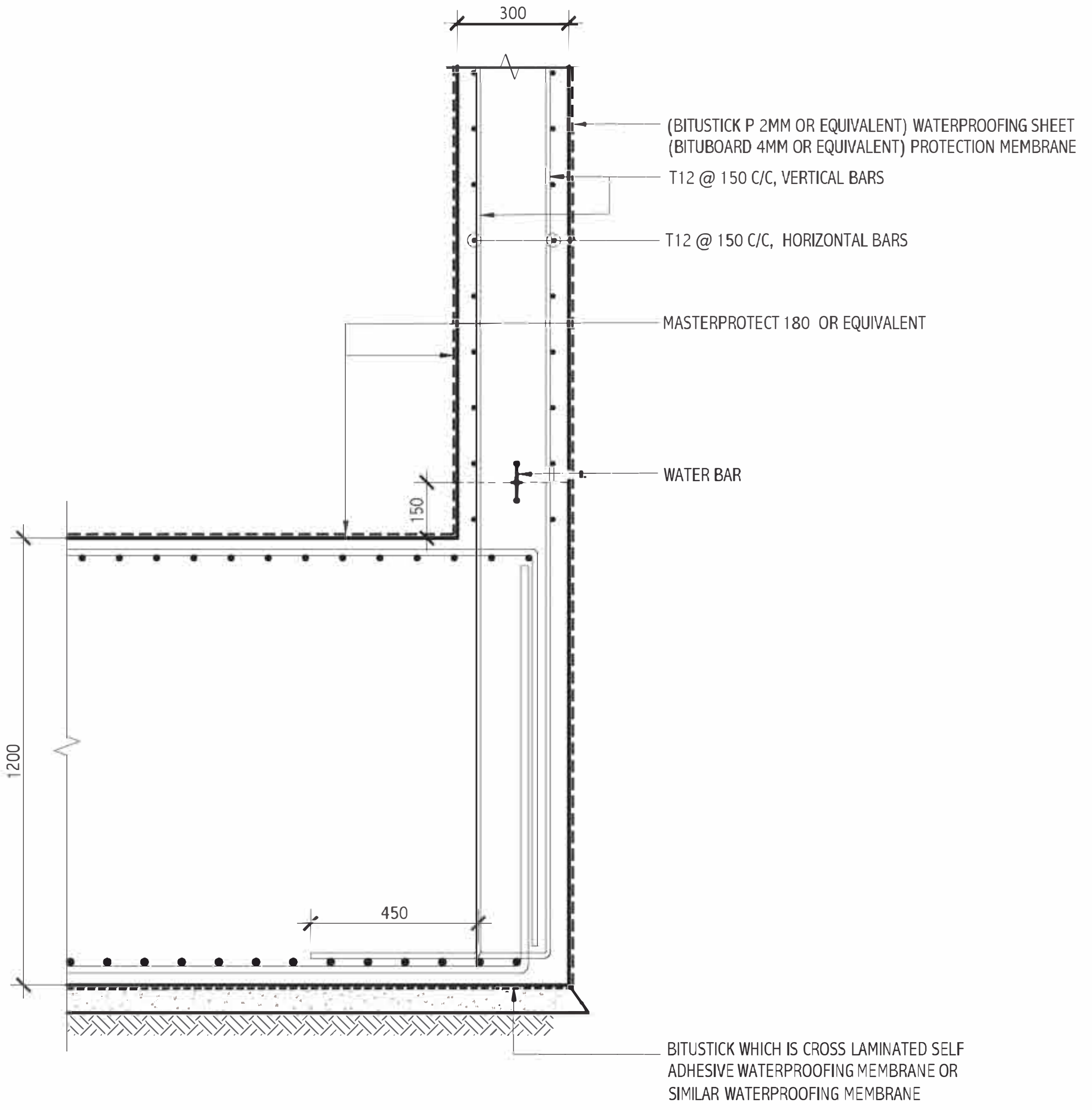
Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

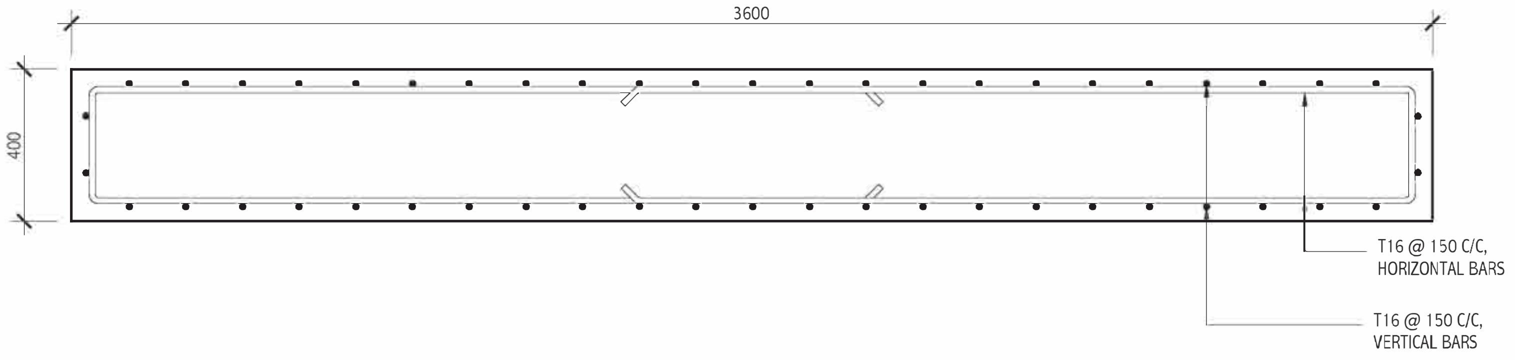


DETAIL-A
SCALE 1:20



RETAINING WALL SECTION
SCALE 1:20

RETAINING WALL DETAILS
SCALE 1:20



POOL SUPPORT WALL REINFORCEMENT DETAIL
SCALE 1:20

GENERAL NOTES

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
RETAINING WALL DETAILS
& POOL SUPPORT WALL
REINFORCEMENT DETAILS

Scale :
1:20

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-504

Revision Number :
R02

File Name :
306-21-504R02.dwg

APPROVED
HOUSING DEVELOPMENT CORPORATION

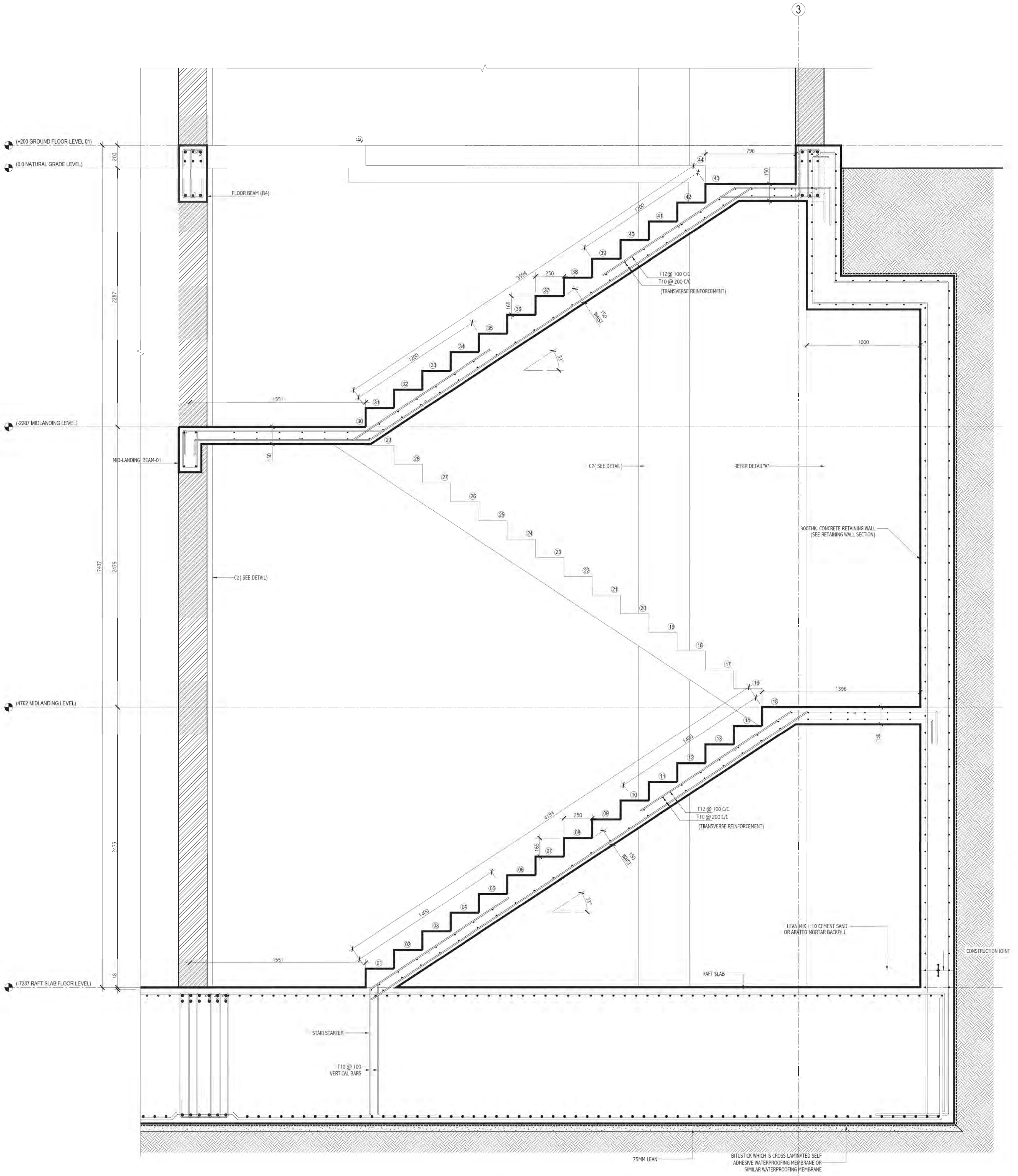
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

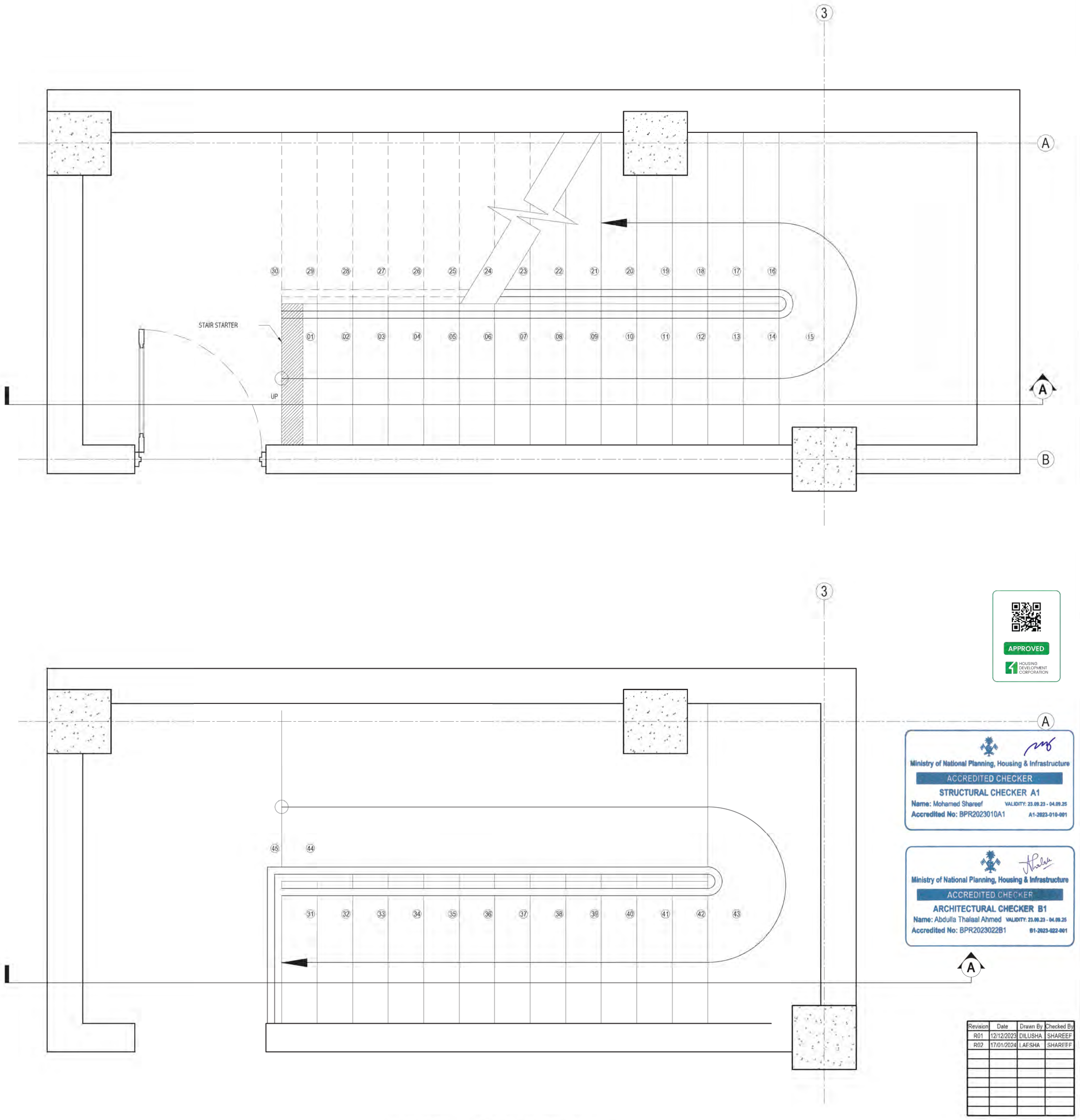
All dimensions to be checked on site.

GENERAL NOTES



SECTION - A (BASEMENT STAIRCASE DETAIL)

SCALE 1:20



BASEMENT STAIRCASE PLAN

SCALE 1:20

APPROVED

HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
BASEMENT STAIR DETAILS

Scale :
1:20

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-505

Revision Number :
R02

File Name :
306-21-505R02.dwg

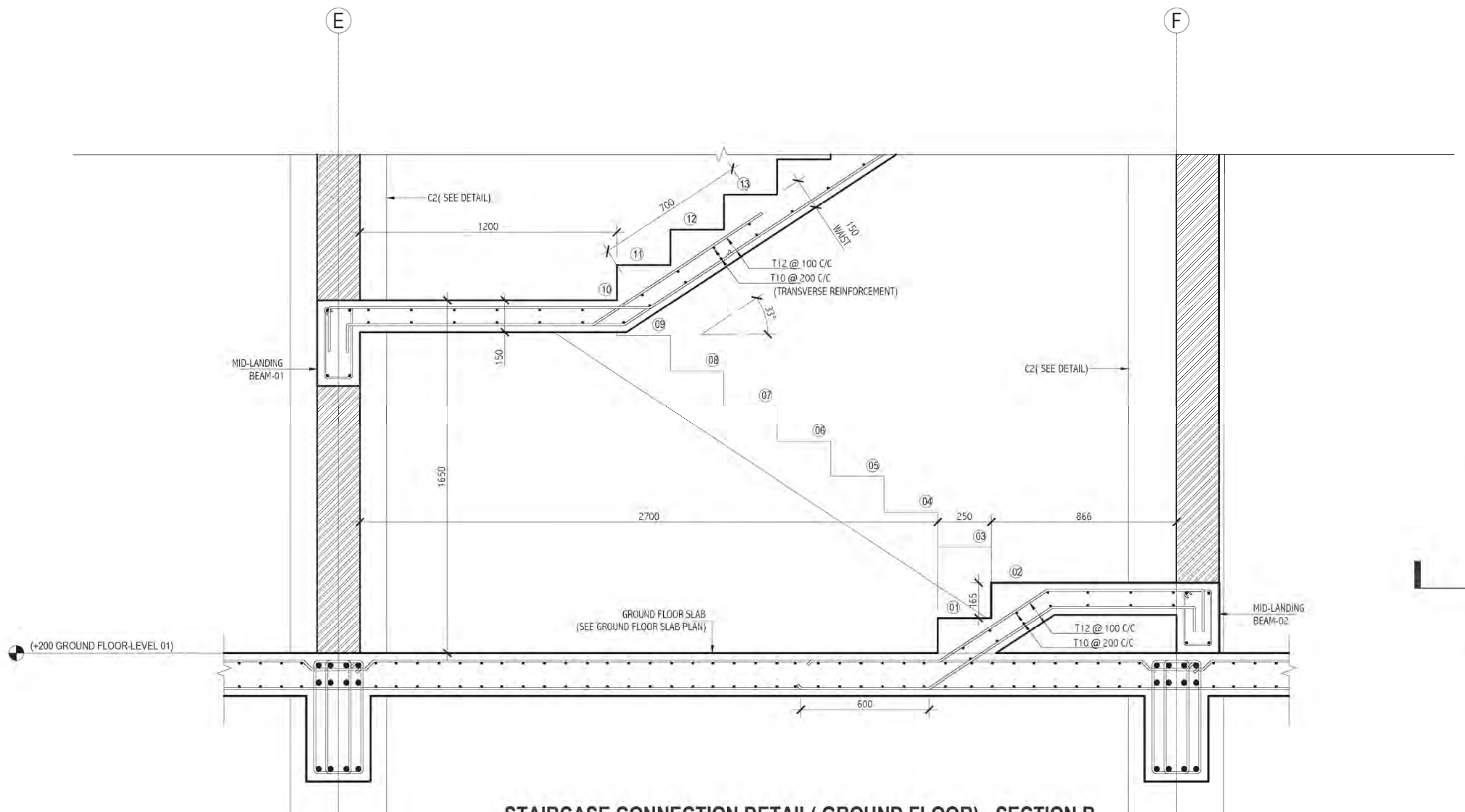
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

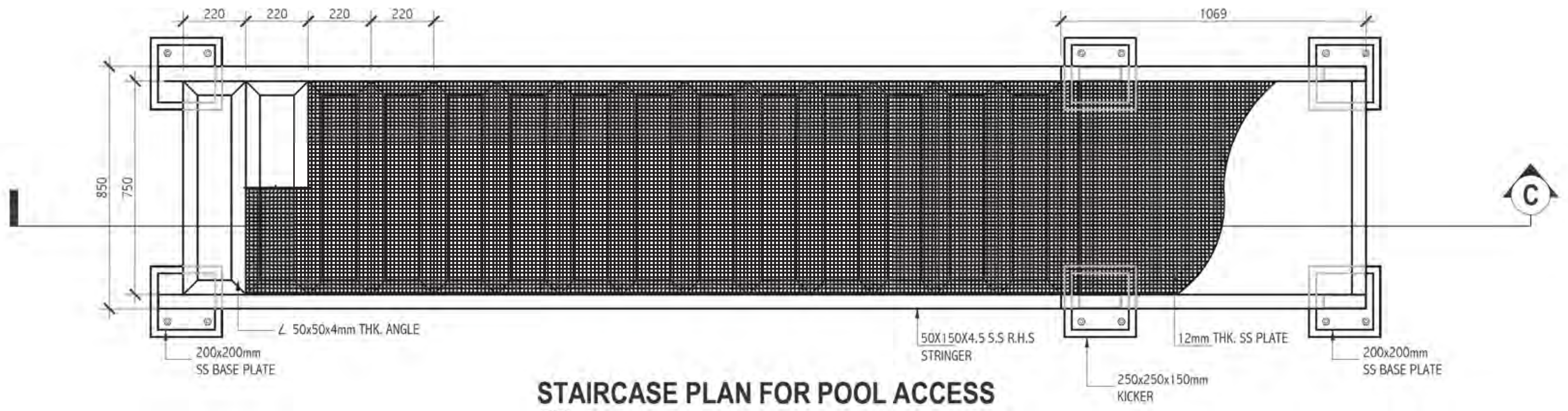
All dimensions to be checked on site.

GENERAL NOTES



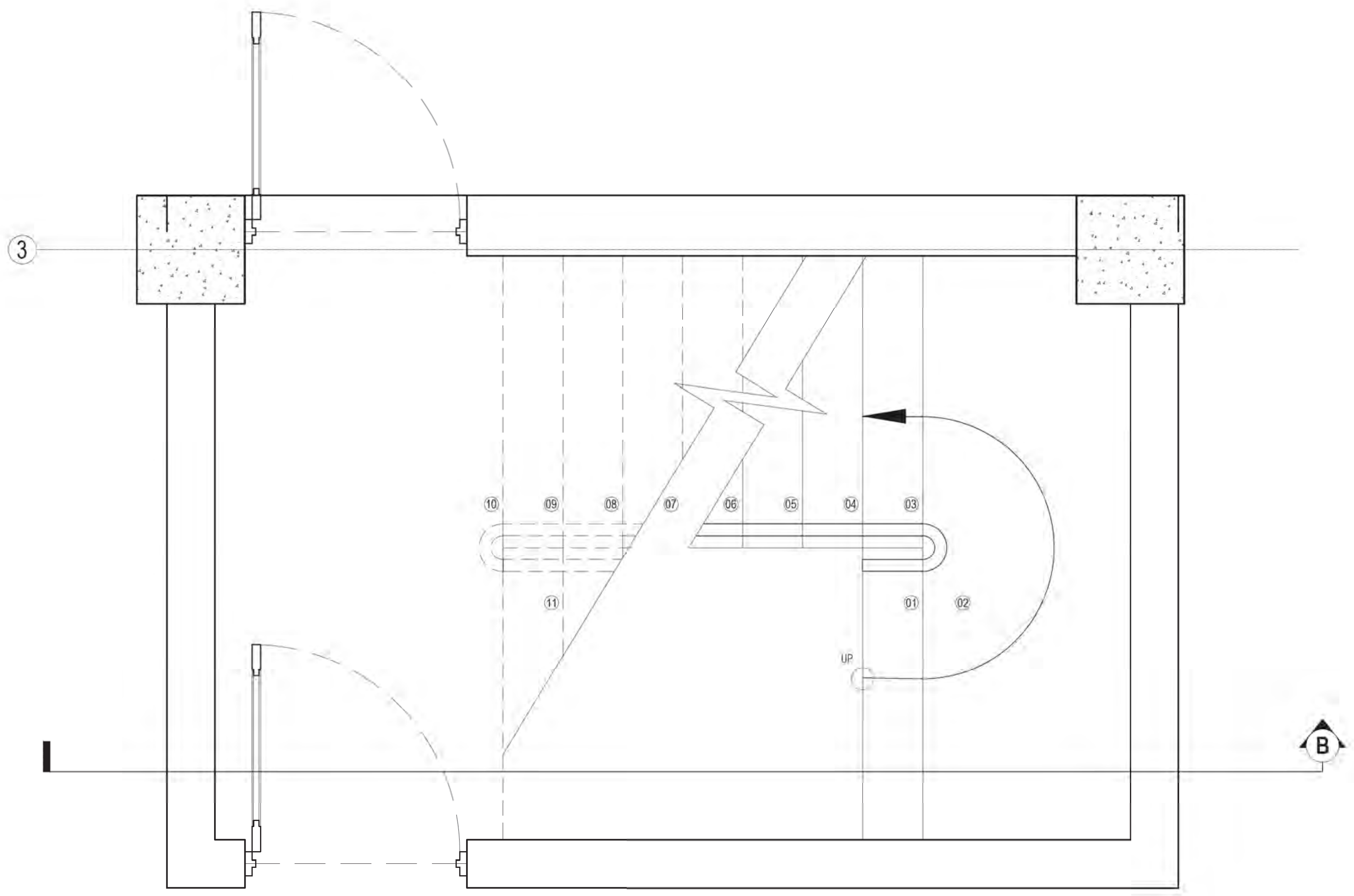
STAIRCASE CONNECTION DETAIL(GROUND FLOOR) - SECTION B

SCALE 1:20



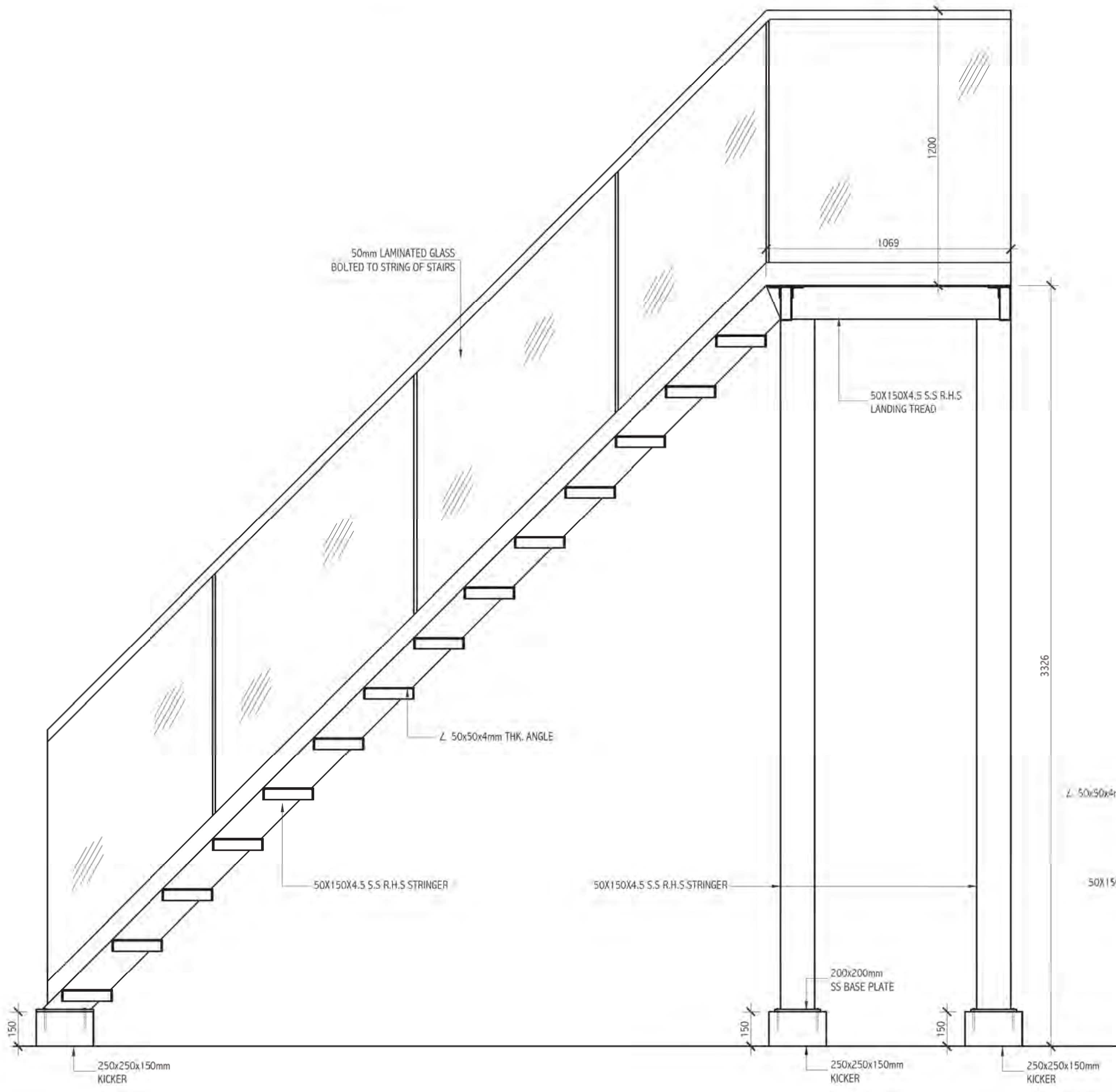
STAIRCASE PLAN FOR POOL ACCESS

SCALE 1:20



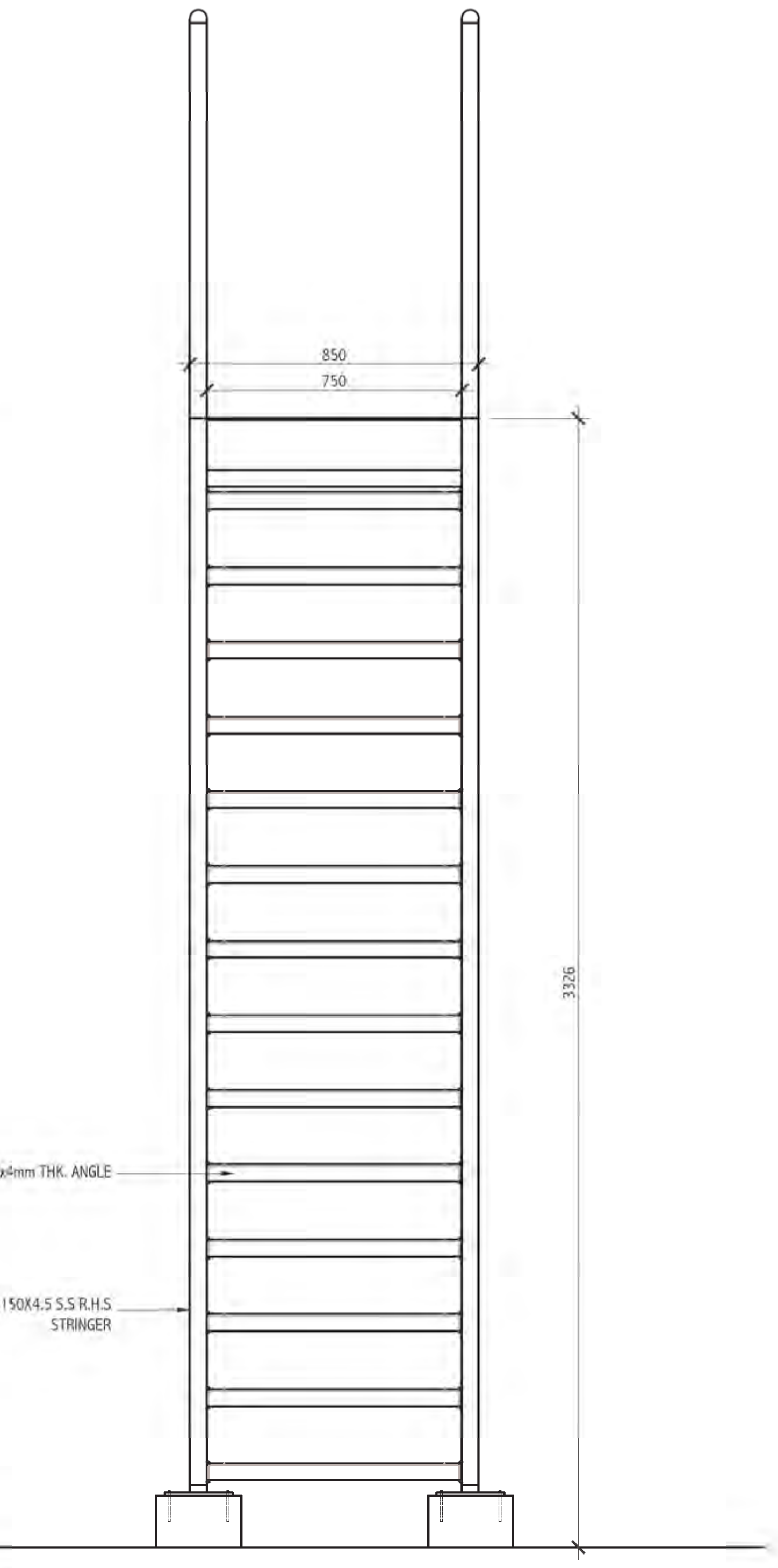
STAIRCASE PLAN

SCALE 1:20



STAIRCASE SECTION FOR POOL ACCESS - SECTION C

SCALE 1:20



ELEVATION

SCALE 1:20

APPROVED
HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX
HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
MAIN STAIR DETAILS &
POOL STAIR DETAILS

Scale :
1:20

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : DILUSHA
Date : DECEMBER 2023
Checked By : SHAREEF
Design By : ZAYAAN

Drawing Number :
21-506

Revision Number :
R02

File Name :
306-21-506R02.dwg

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD

All dimensions to be checked on site.

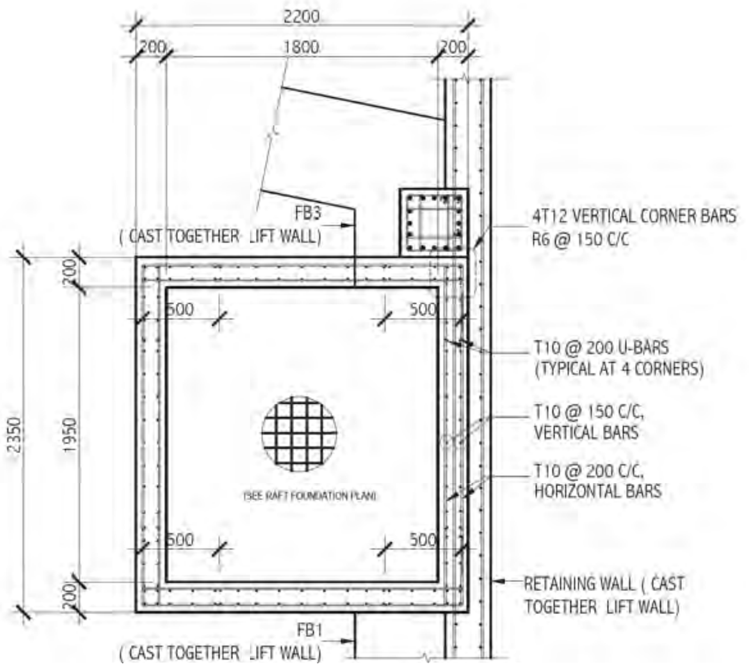
GENERAL NOTES

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

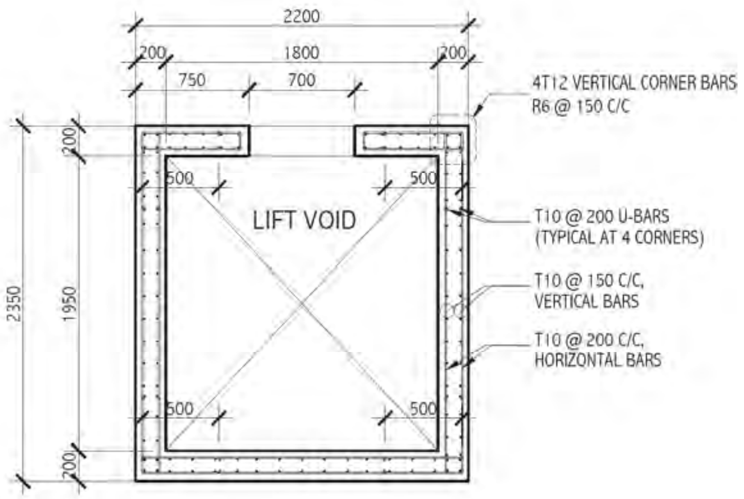
Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

This drawing should be used only for the project mentioned on this sheet



BASEMENT TO TERRACE



BASEMENT TO TERRACE
(DOOR AREA)

LIFT WALL REINFORCEMENT SCHEDULE 01

SCALE 1:50

-1 -0.5 0 0.5 1 1.5 2

APPROVED
HOUSING DEVELOPMENT CORPORATION

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LIFT WALL REINFORCEMENT SCHEDULE -01

Scale :
1:50

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-507

Revision Number :
R02

File Name :
306-21-507R02.dwg

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

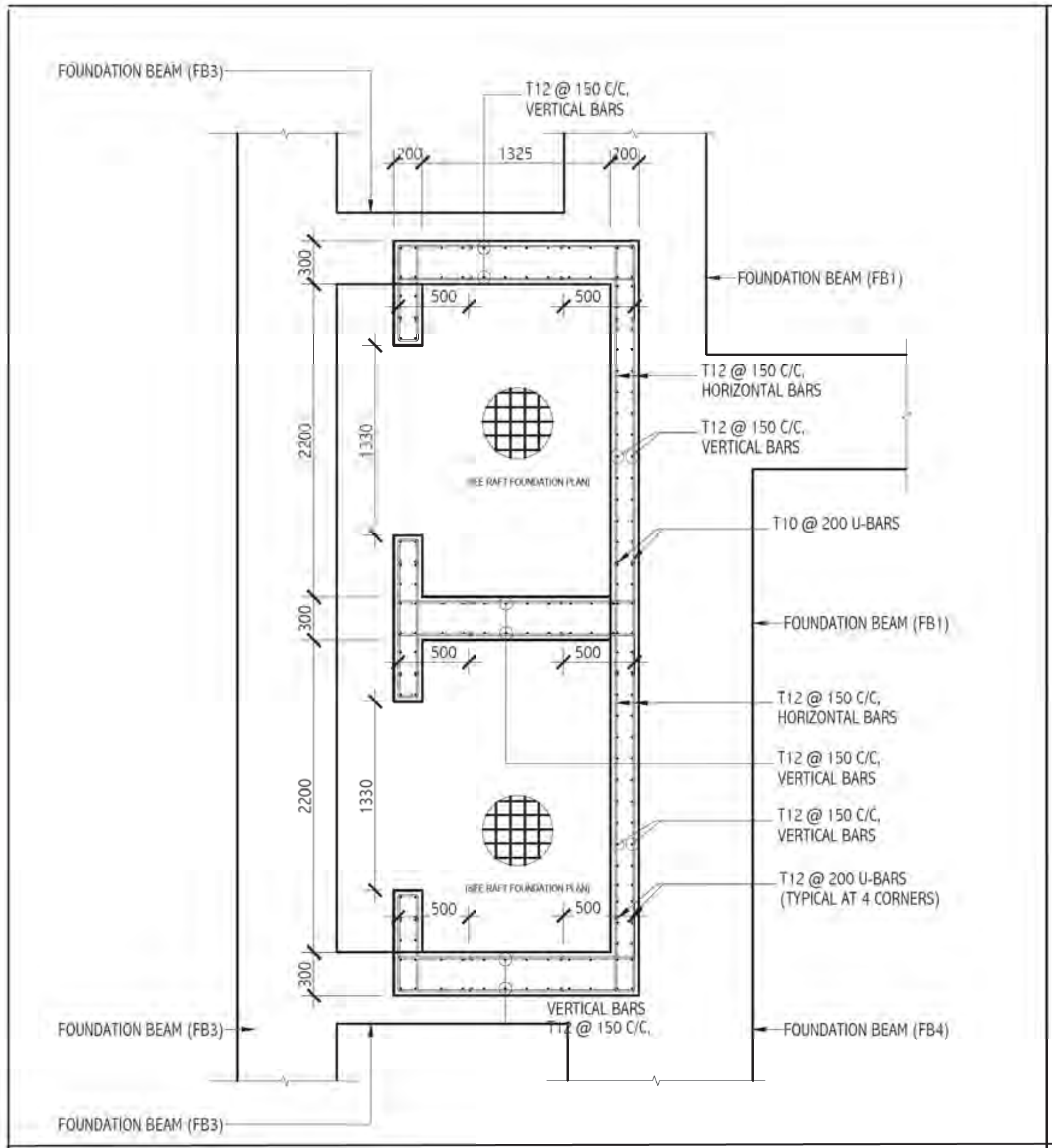
GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site

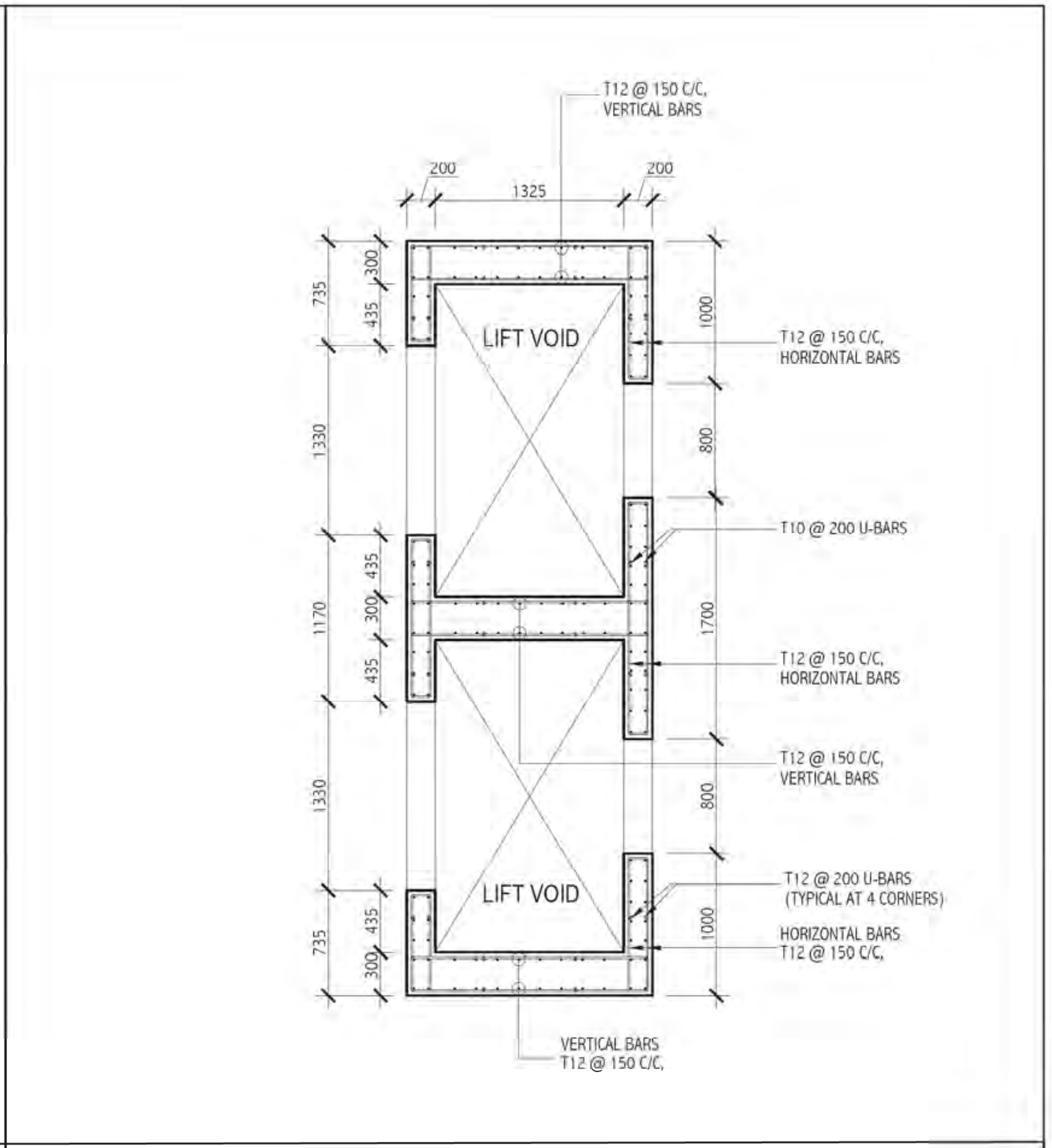
GENERAL NOTES

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001



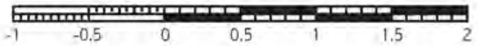
BASEMENT TO TERRACE



BASEMENT TO TERRACE
(DOOR AREA)

LIFT WALL REINFORCEMENT SCHEDULE 02

SCALE 1:50



Revision	Date	Drawn By	Checked By
R01	12/12/2023	DILUSHA	SHAREEF
R02	17/01/2024	LAESHA	SHAREEF

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
LIFT WALL REINFORCEMENT SCHEDULE -02

Scale :
1:50

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Design By : **ZAYAAN**

Drawing Number :
21-508

Revision Number :
R02

File Name :
306-21-508R02.dwg

APPROVED
HOUSING DEVELOPMENT CORPORATION

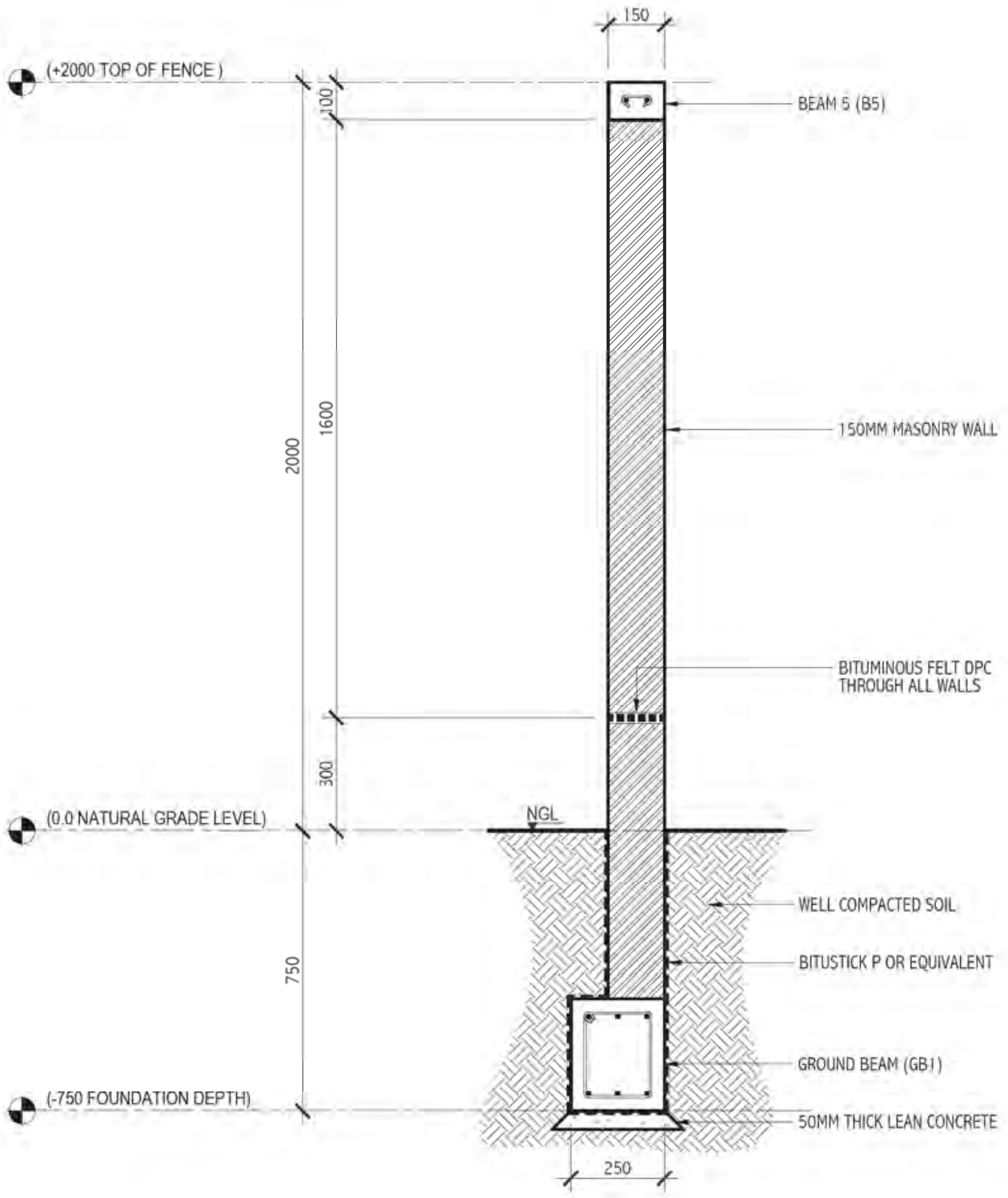
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

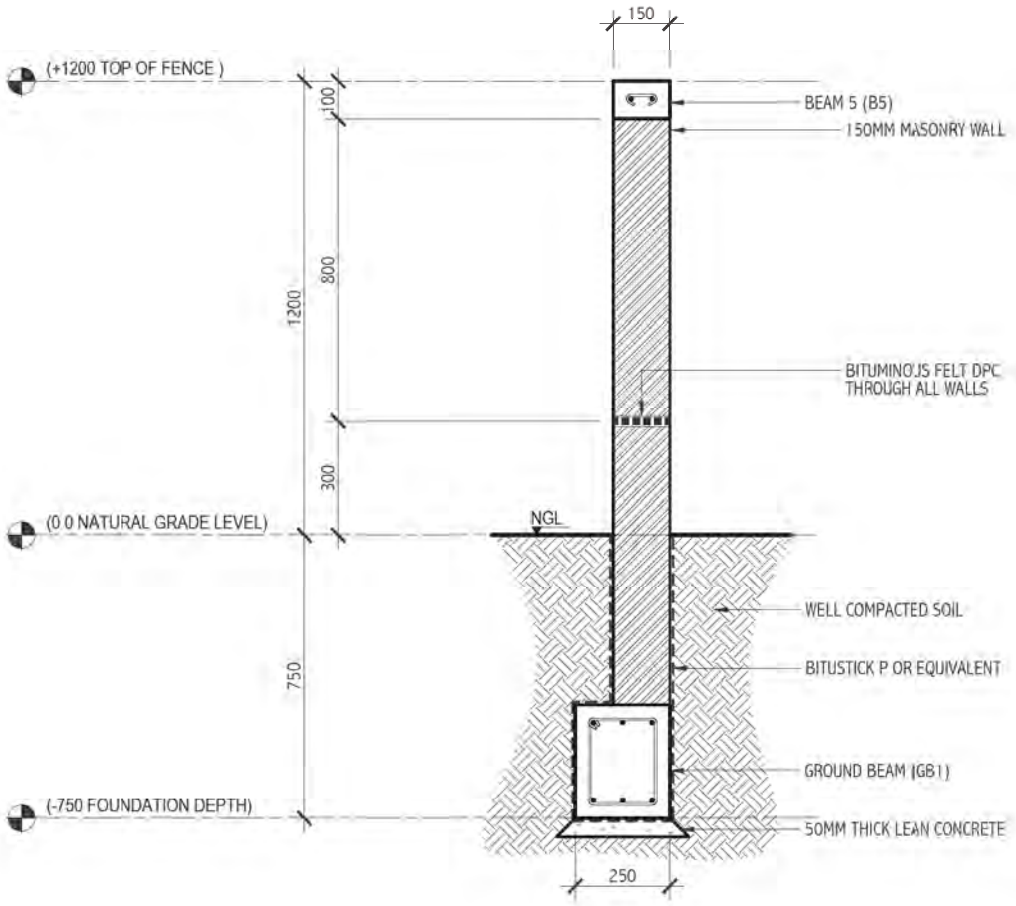
All dimensions to be checked on site

GENERAL NOTES



2M BOUNDARY WALL DETAIL

SCALE 1:20



1.2M BOUNDARY WALL DETAIL

SCALE 1:20

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
BOUNDARY WALL DETAILS

Scale :
1:20

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By :
LAESHA
Date :
FEBRUARY 2024
Checked By :
SHAREEF
Design By :
ZAYAAN

Drawing Number :
21-509

Revision Number :
R00

File Name :
306-21-509R00.dwg

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

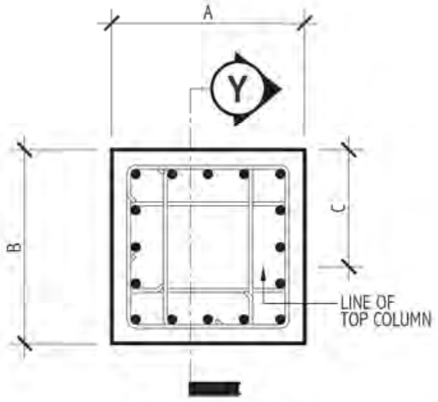
Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

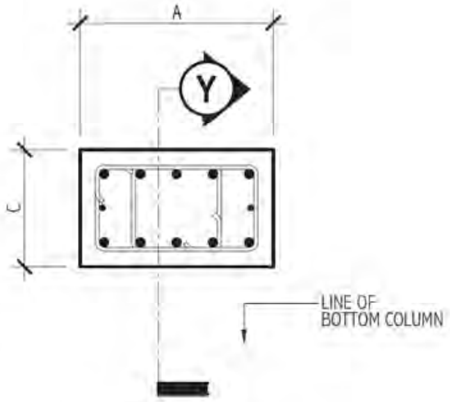
Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

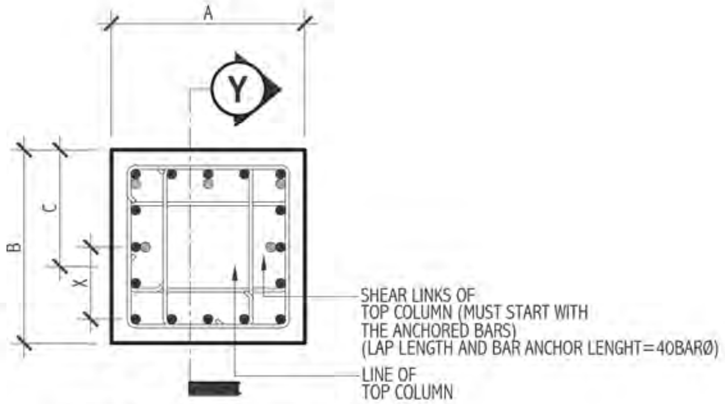
All dimensions to be checked on site



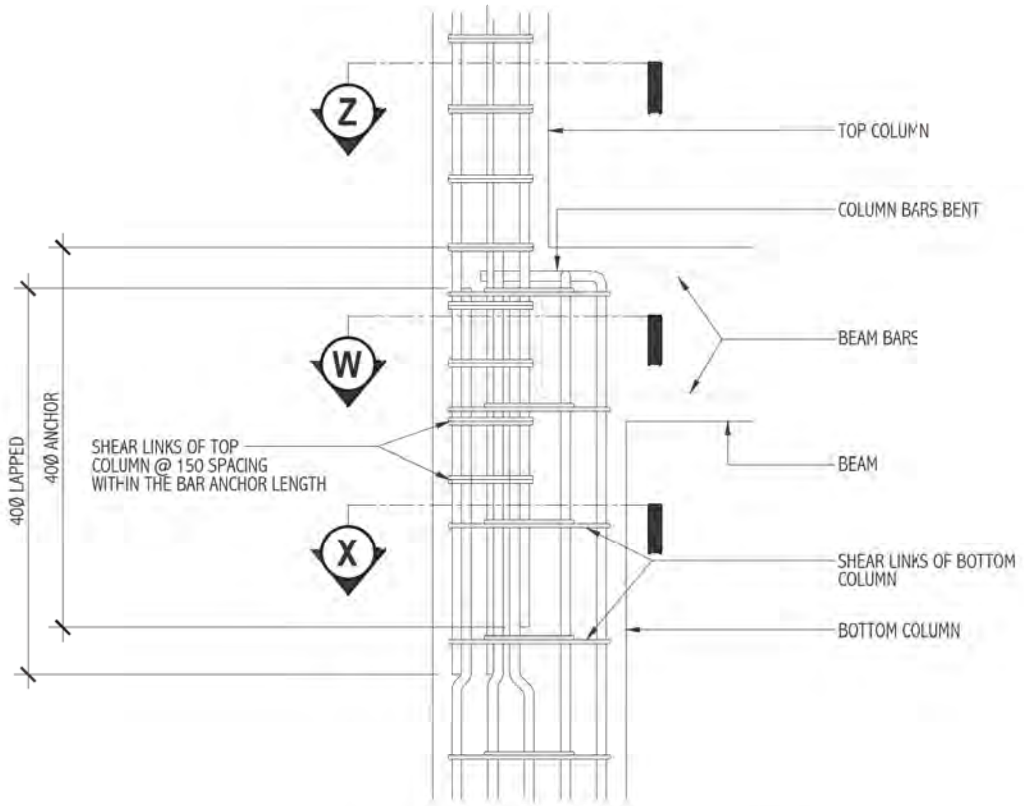
BOTTOM COLUMN
(SECTION-X)



TOP COLUMN
(SECTION-Z)



TOP & BOTTOM COLUMN JUNCTION
(SECTION-W)



SECTION-Y

TYPICAL COLUMN SIZE REDUCING SPLICE DETAIL

SCALE 1:20

NOTE:

1.) LAPS MUST BE STAGGERED

2.) BARS OF TOP COLUMN LAPPED WHEN DISTANCE "X" IS LESS THAN OR EQUAL TO 50mm.

3.) BARS OF TOP COLUMN ANCHORED INTO BOTTOM COLUMN WHEN DISTANCE "X" BETWEEN BAR OF BOTTOM COLUMN IS THAN 50mm.

4.) CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ALL CONNECTION DETAILS TO CLIENTS ENGINEER FOR APPROVAL.

LEGEND:

═ = TOP COLUMN BARS

═ = BOTTOM COLUMN BARS

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
-	-	-	-

REV "A" ACCORDING TO ARCHITECTURAL PLAN XXX

This drawing should be used only for the project mentioned on this sheet

APPROVED
HOUSING DEVELOPMENT CORPORATION

Client :
The Hawks Pvt Ltd

Project Title :
OFFICE COMPLEX
Hulhumale'

Building Name :
OFFICE COMPLEX

Drawing Title :
TYPICAL COLUMN SIZE
REDUCING SPLICE DETAIL

Scale :
1:20 / A3

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Designed By : **ZAYAN**

Drawing Number :
21-005

Revision Number :
R00

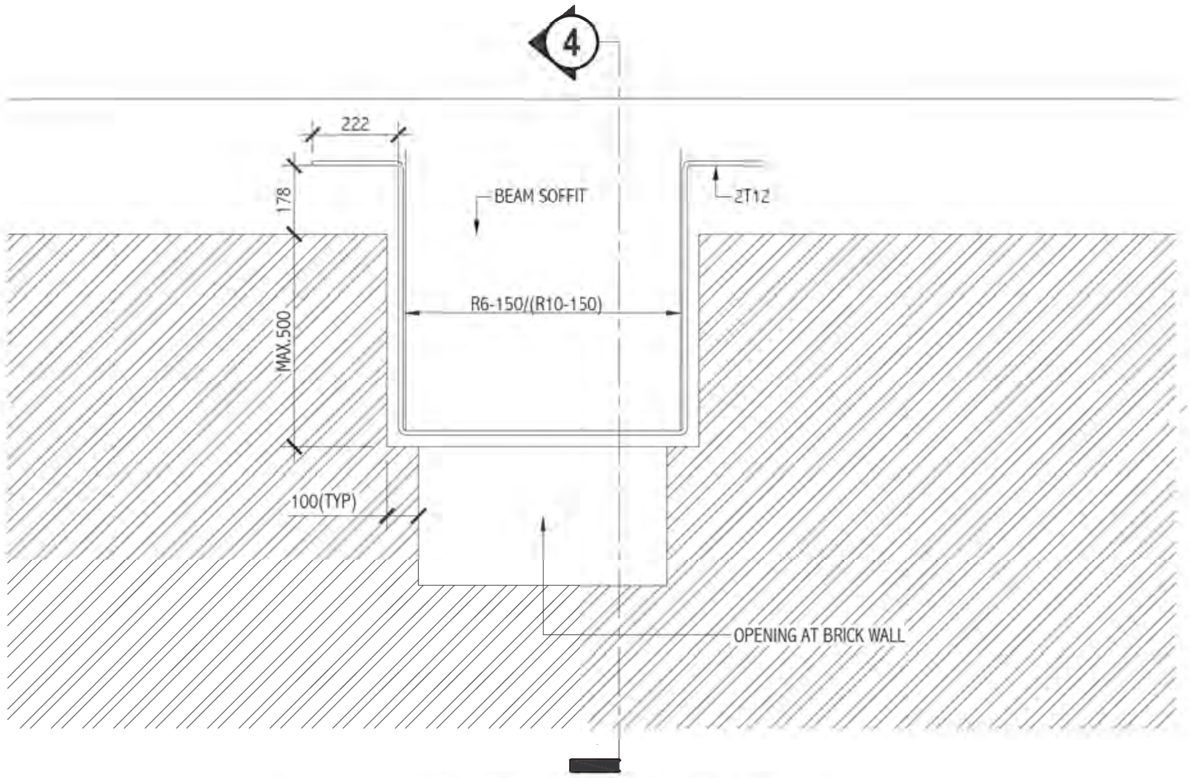
File Name :
306-21-005R00

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

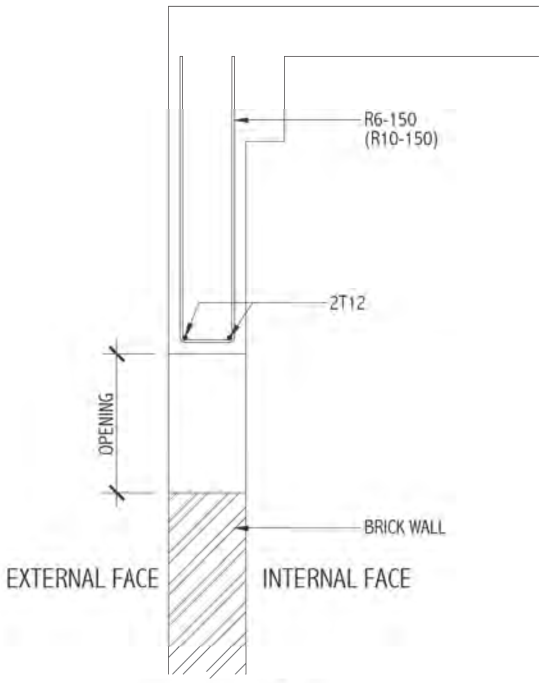
Tel: 960 318452
Fax: 960 310317
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

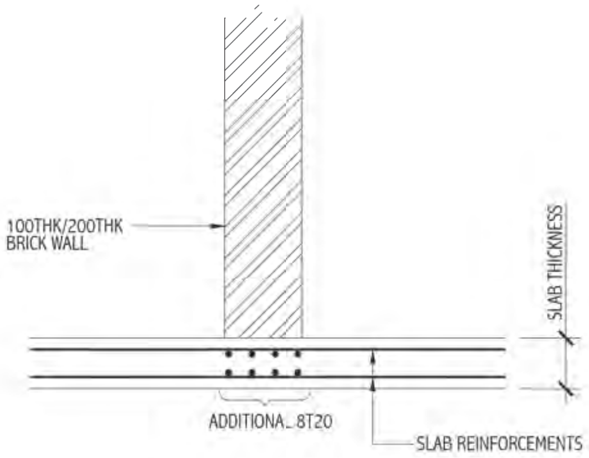
All dimensions to be checked on site.



TYPICAL LINTEL BEAM DETAILS FOR OPENINGS CLOSE TO R.C. BEAM
SCALE 1:20



SECTION-4
SCALE 1:20



TYPICAL SECTION OF SUSPENDED SLAB UNDER BRICKWALL DETAIL
SCALE 1:20

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
-	-	-	-

REV "A" ACCORDING TO ARCHITECTURAL PLAN XXX

This drawing should be used only for the project mentioned on this sheet

Client :
The Hawks Pvt Ltd

Project Title :
OFFICE COMPLEX
Hulhumale'

Building Name :
OFFICE COMPLEX

Drawing Title :
TYPICAL LINTEL BEAM DETAIL & SUSPENDED SLAB UNDER BRICK WALL DETAIL

Scale :
1:20 / A3

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Designed By : **ZAYAAN**

Drawing Number :
21-006

Revision Number :
R00

File Name :
306-21-006R00

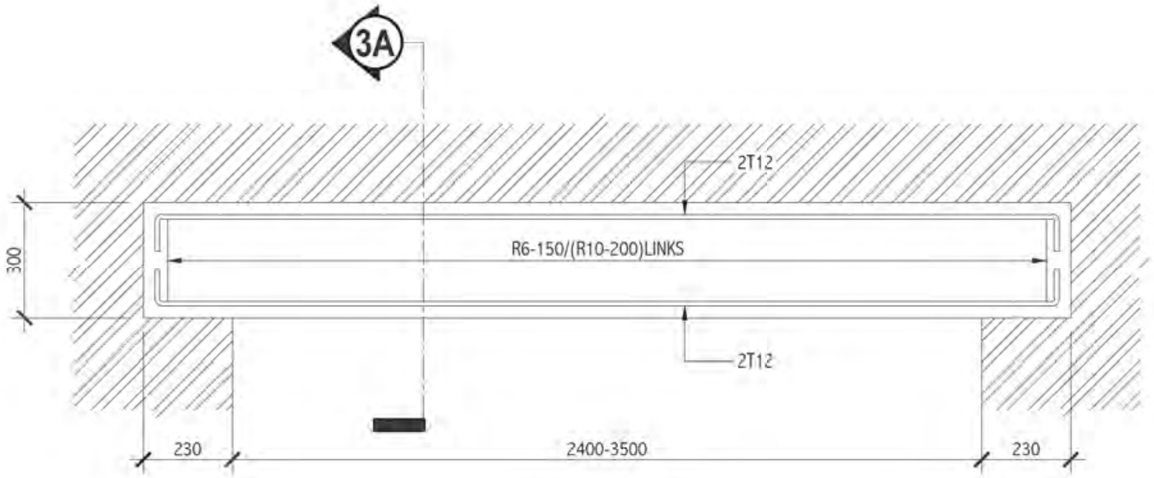
APPROVED
HOUSING DEVELOPMENT CORPORATION

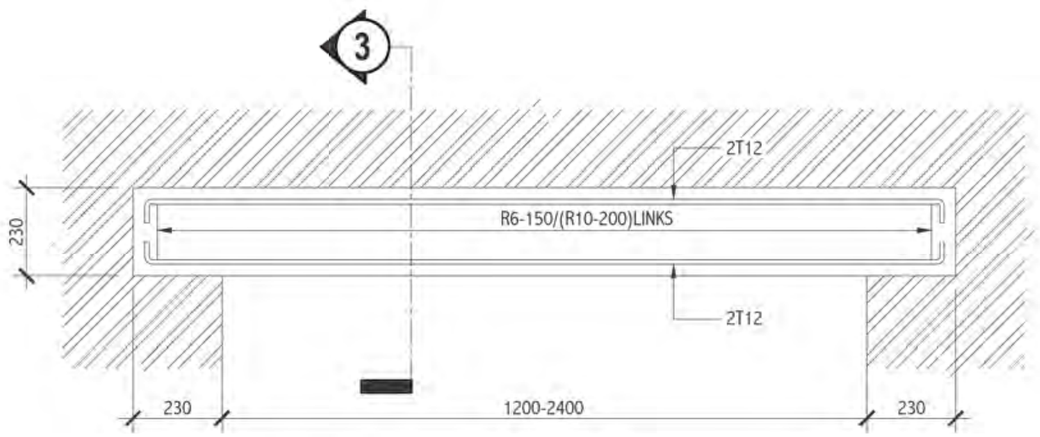
Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

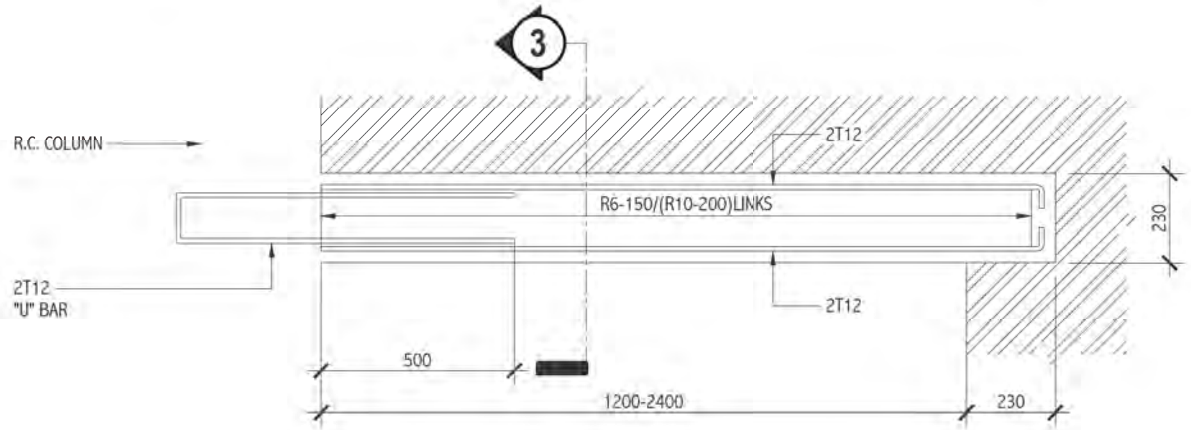
Tel: 960 318452
Fax: 960 310317
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

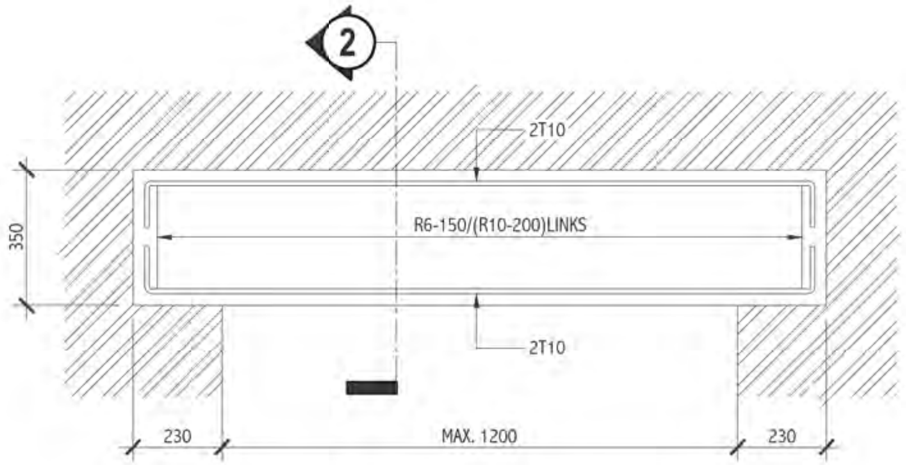
GEDOR CONSULTING PVT. LTD.

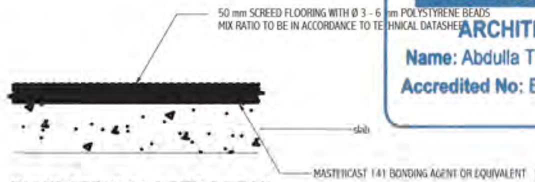
All dimensions to be checked on site.



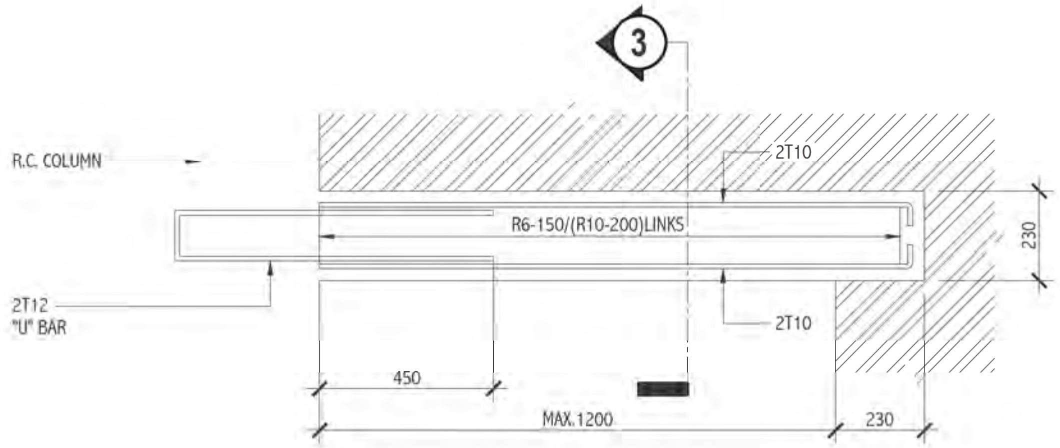


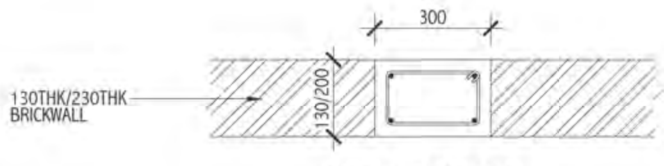




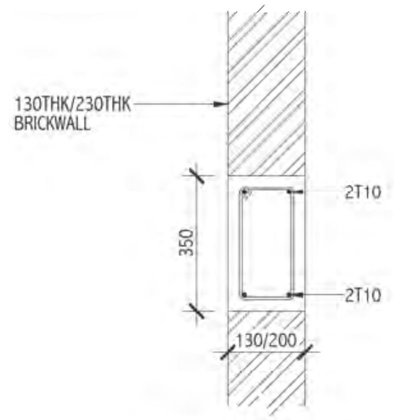


INSULATING SCREED DETAIL

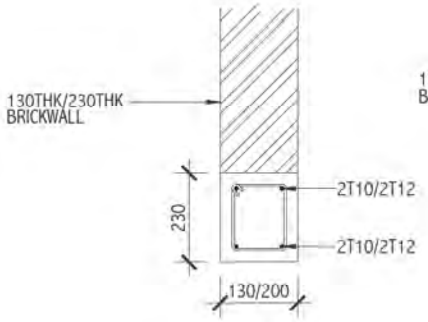




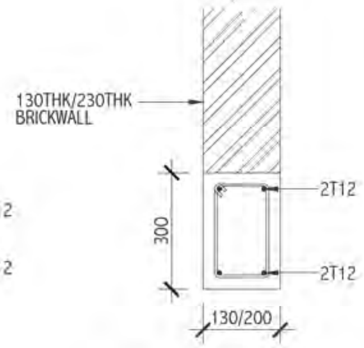
SECTION 1-1
SCALE 1:20



SECTION 2-2
SCALE 1:20



SECTION 3-3
SCALE 1:20



SECTION 3A-3A
SCALE 1:20

TYPICAL LINTEL BEAM DETAILS
SCALE 1:20

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
-	-	-	-

REV "A" ACCORDING TO ARCHITECTURAL PLAN XXX

This drawing should be used only for the project mentioned on this sheet

Client :
The Hawks Pvt Ltd

Project Title :
OFFICE COMPLEX
Hulhumale'

Building Name :
OFFICE COMPLEX
Drawing Title :
TYPICAL LINTEL BEAM DETAILS

Scale :
1:20 / A3

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Designed By : **ZAYAAN**

Drawing Number :
21-007

Revision Number :
R00

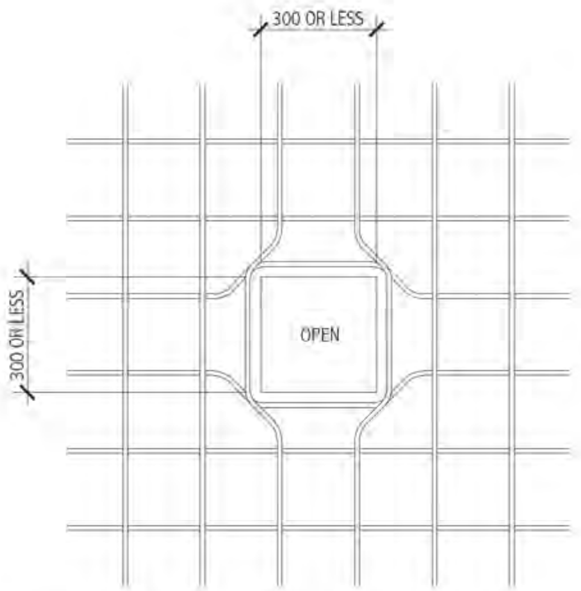
File Name :
306-21-007R00

Deens Villa
Meheli Goalhi
Malè 20012
Republic of Maldives

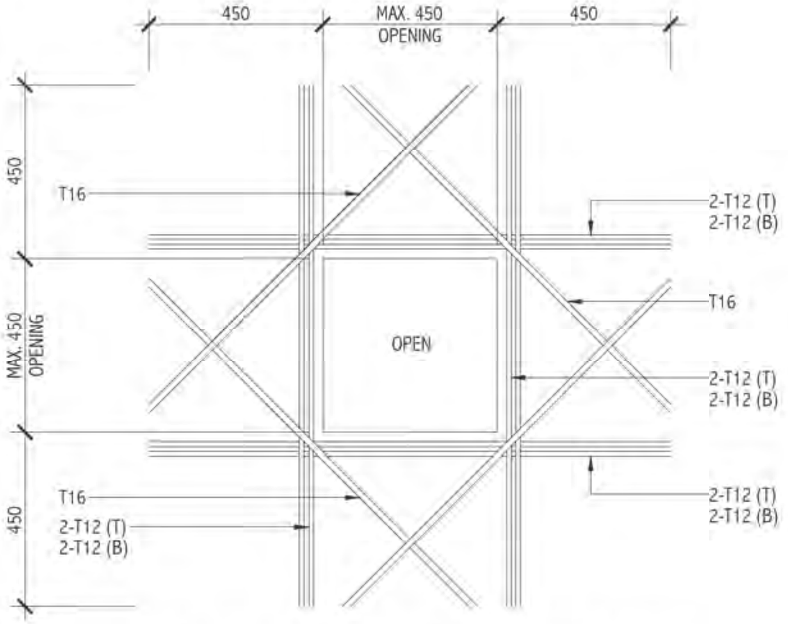
Tel: 960 318452
Fax: 960 310317
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site.

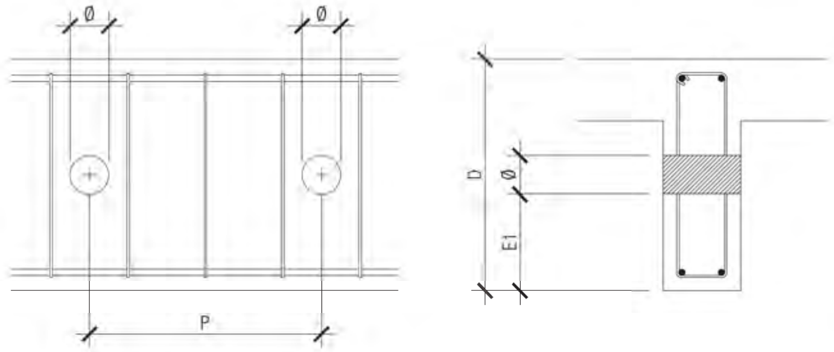


TYPICAL FLOOR SLAB OPENING DETAIL (LESS THAN 300mm)
SCALE 1:20

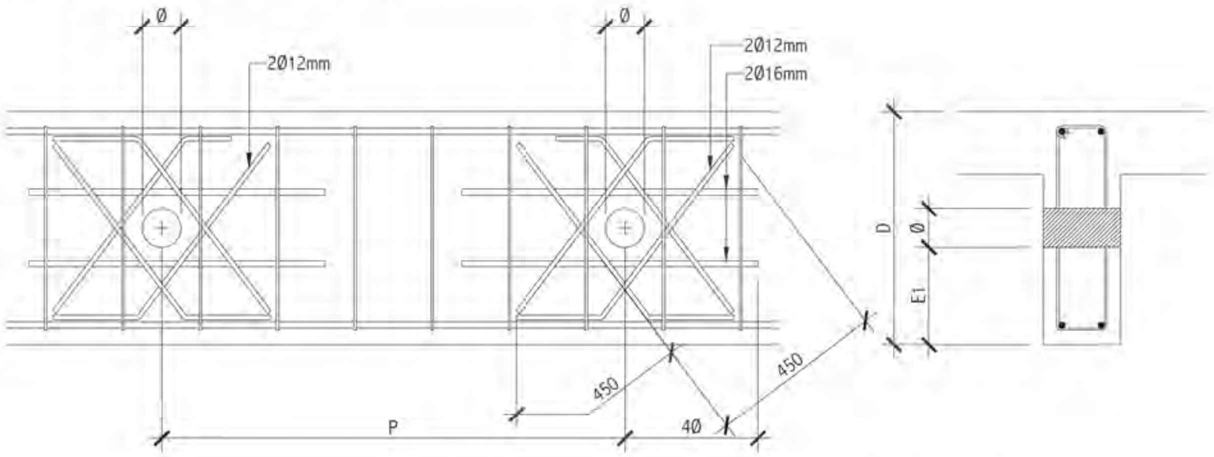


TYPICAL FLOOR SLAB OPENING DETAIL (LESS THAN 450mm)
SCALE 1:20

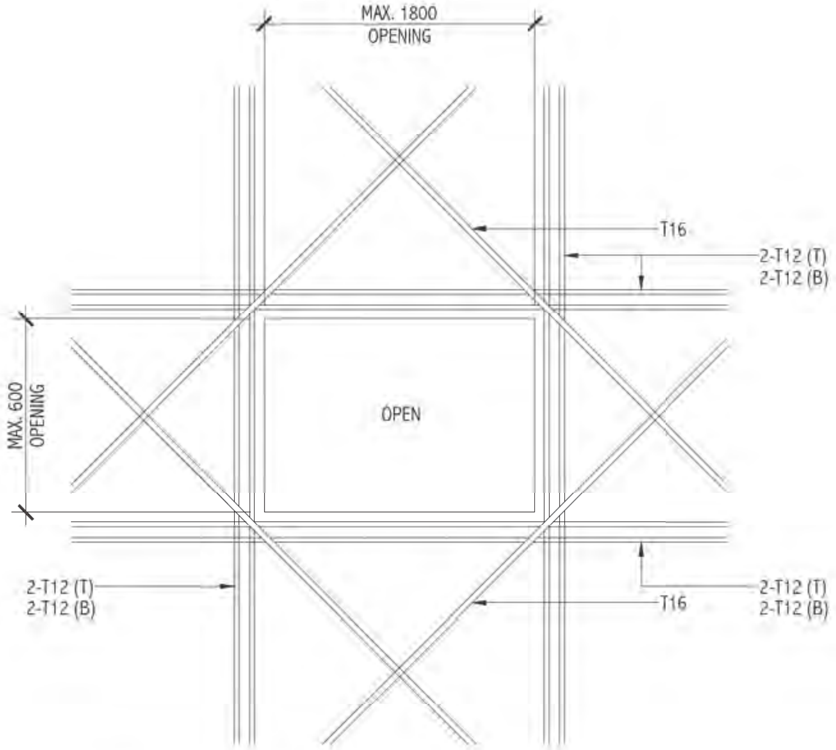
1. IN CASE OF PIPE Ø <100mm; APPLICABLE FOR D ⩾400mm
P⩾4Ø, E1⩾D/3 PIPE BELOW FLANGE



2. IN CASE OF PIPE Ø 100mm ⩽ Ø ⩽ D/4; APPLICABLE FOR D ⩾400mm
P⩾4Ø, E1⩾D/3 PIPE BELOW FLANGE



TYPICAL BEAM SLEEVES OPENING DETAILS
SCALE 1:20



FLOOR SLAB OPENING DETAIL
SCALE 1:20

APPROVED
HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
-	-	-	-

REV "A" ACCORDING TO ARCHITECTURAL PLAN XXX

Client :
The Hawks Pvt Ltd

Project Title :
OFFICE COMPLEX
Hulhumale'

Building Name :
OFFICE COMPLEX

Drawing Title :
TYPICAL DETAIL FOR FLOOR SLAB OPENING & BEAM SLEEVES OPENING

Scale :
1:20 / A3

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Designed By : **ZAYAAN**

Drawing Number :
21-002

Revision Number :
R00

File Name :
306-21-002R00

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

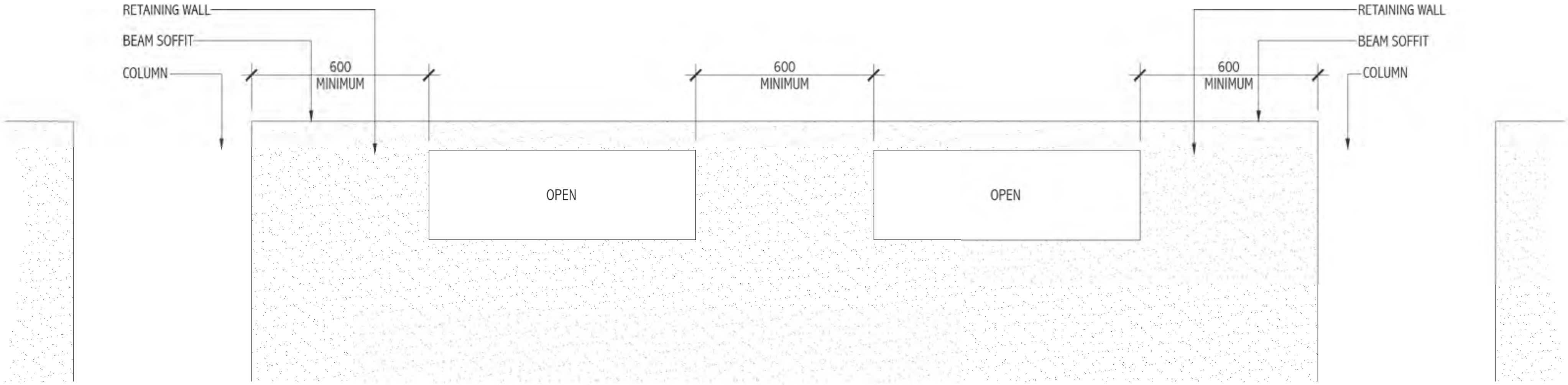
Tel: 960 318452
Fax: 960 310317
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

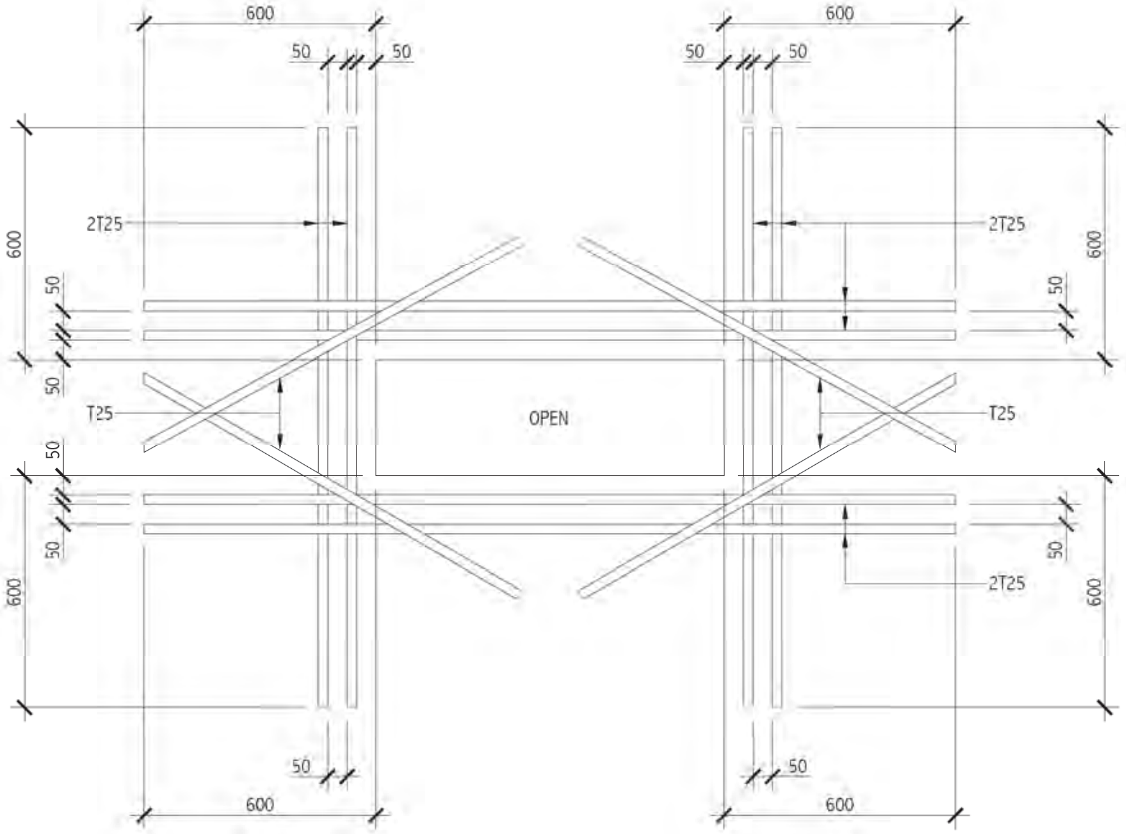
All dimensions to be checked on site.

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001



ELEVATION



TYPICAL RETAINING WALL OPENING REINFORCEMENT DETAIL

SCALE 1:20

NOTE:

1.) A MINIMUM GAP OF 600mm MUST BE PROVIDED BETWEEN PILLARS/COLUMN AND OPENING AND BETWEEN TWO OPENINGS.
2.) GAP BETWEEN TWO BARS MUST BE 50mm.
3.) WHERE 600mm STRAIGHT RUN OF ANCHOR IS NOT ACHIEVED, BARS MAY BE ANCHORED INTO BEAM AND BENT 90°.
4.) EXCEPT FOR THE GRILLED VENT OPENINGS, RETAINING WALL MUST BE CONTINUOUS AND CAST MONOLITHIC TO THE ADJOINING SLABS, BEAMS AND COLUMNS WITH ITS REINFORCEMENT FULLY ANCHORED INTO THESE ELEMENTS.

APPROVED
HOUSING DEVELOPMENT CORPORATION

Revision	Date	Drawn By	Checked By
-	-	-	-

REV "A" ACCORDING TO ARCHITECTURAL PLAN XXX

This drawing should be used only for the project mentioned on this sheet

Client :
The Hawks Pvt Ltd

Project Title :
OFFICE COMPLEX
Hulhumale'

Building Name :
OFFICE COMPLEX

Drawing Title :
TYPICAL RETAINING WALL OPENING REINFORCEMENT DETAIL

Scale :
1:20 / A3

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By :
DILUSHA
Date :
DECEMBER 2023
Checked By :
SHAREEF
Designed By :
ZAYAAN

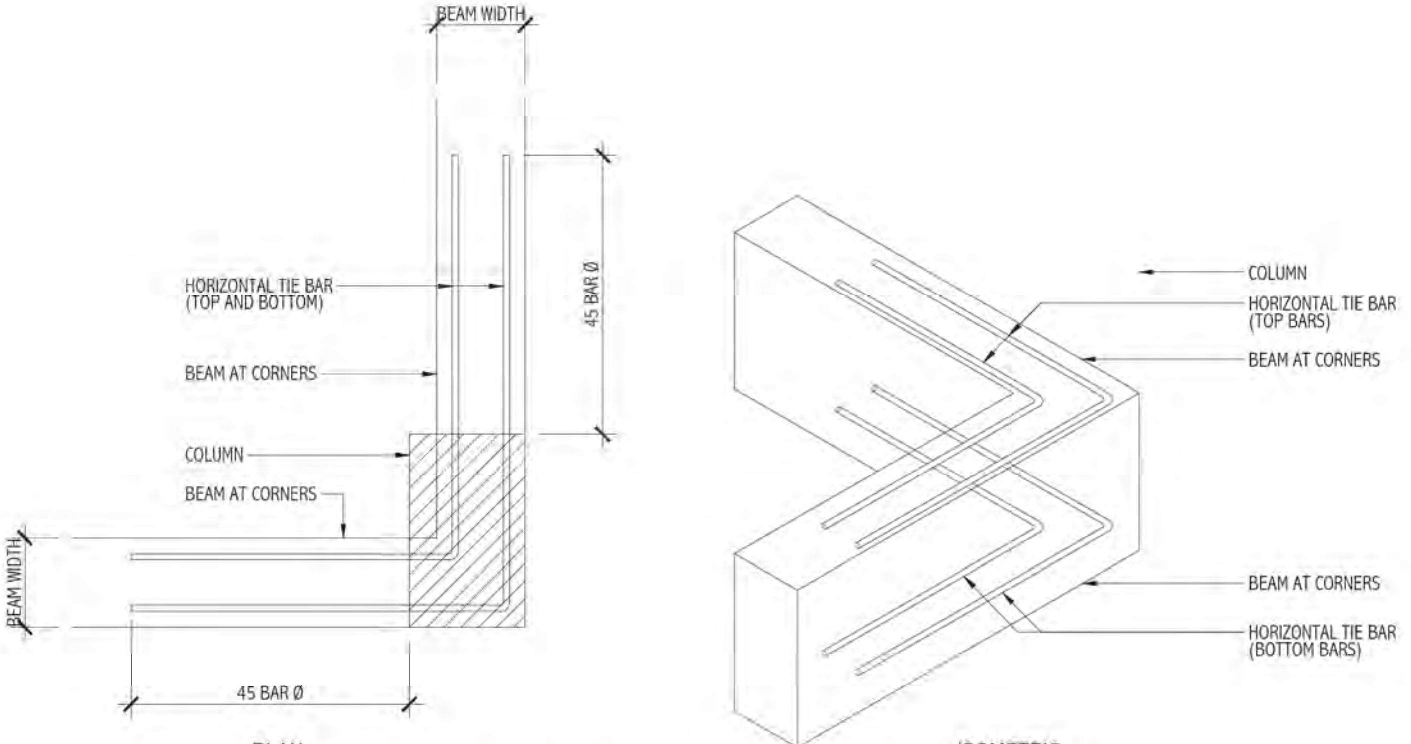
Drawing Number :
21-003

Revision Number :
R00

File Name :
306-21-003R00

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 318452
Fax: 960 310317
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

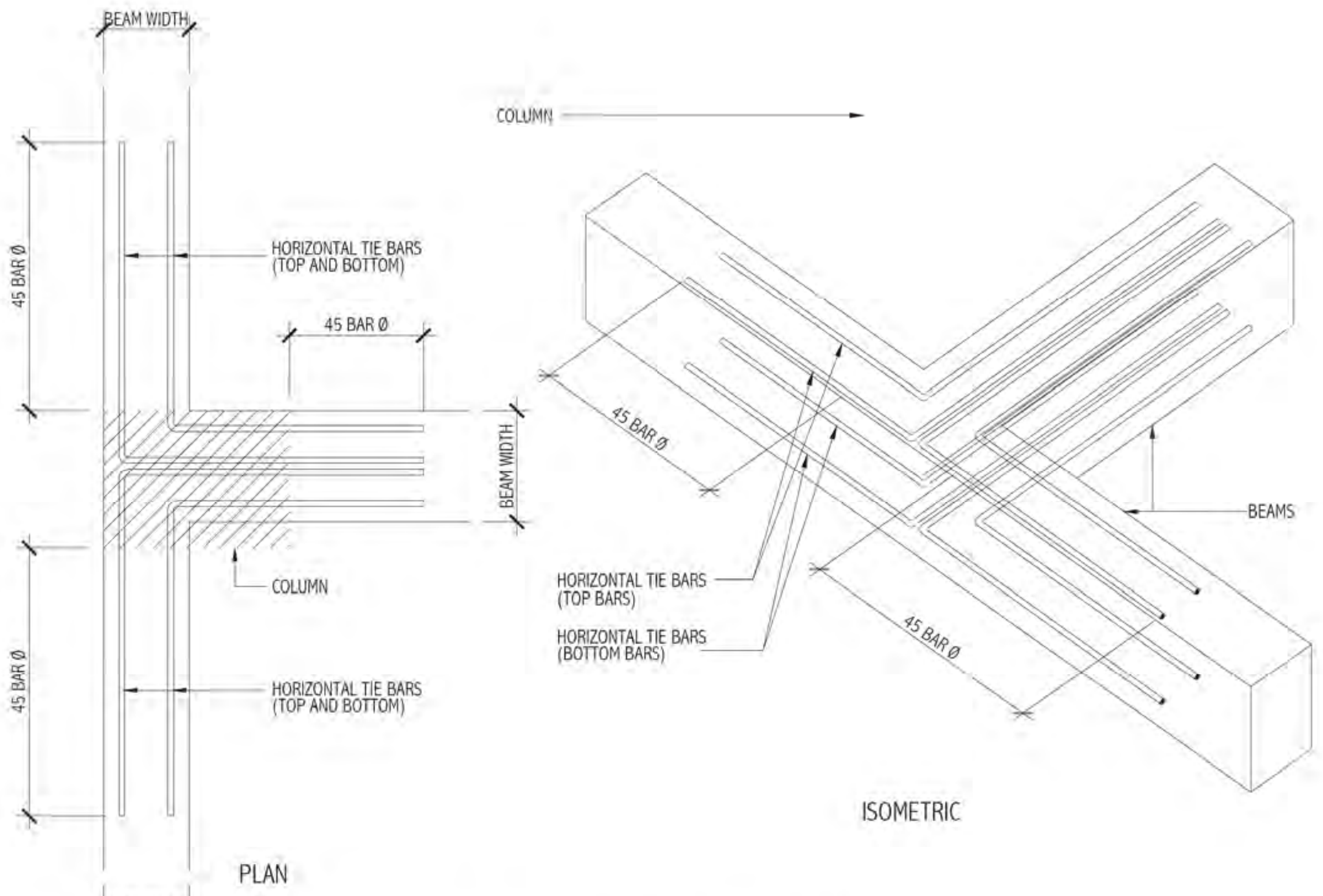


PLAN

ISOMETRIC

HORIZONTAL TIE BAR DETAIL-1

SCALE 1:20

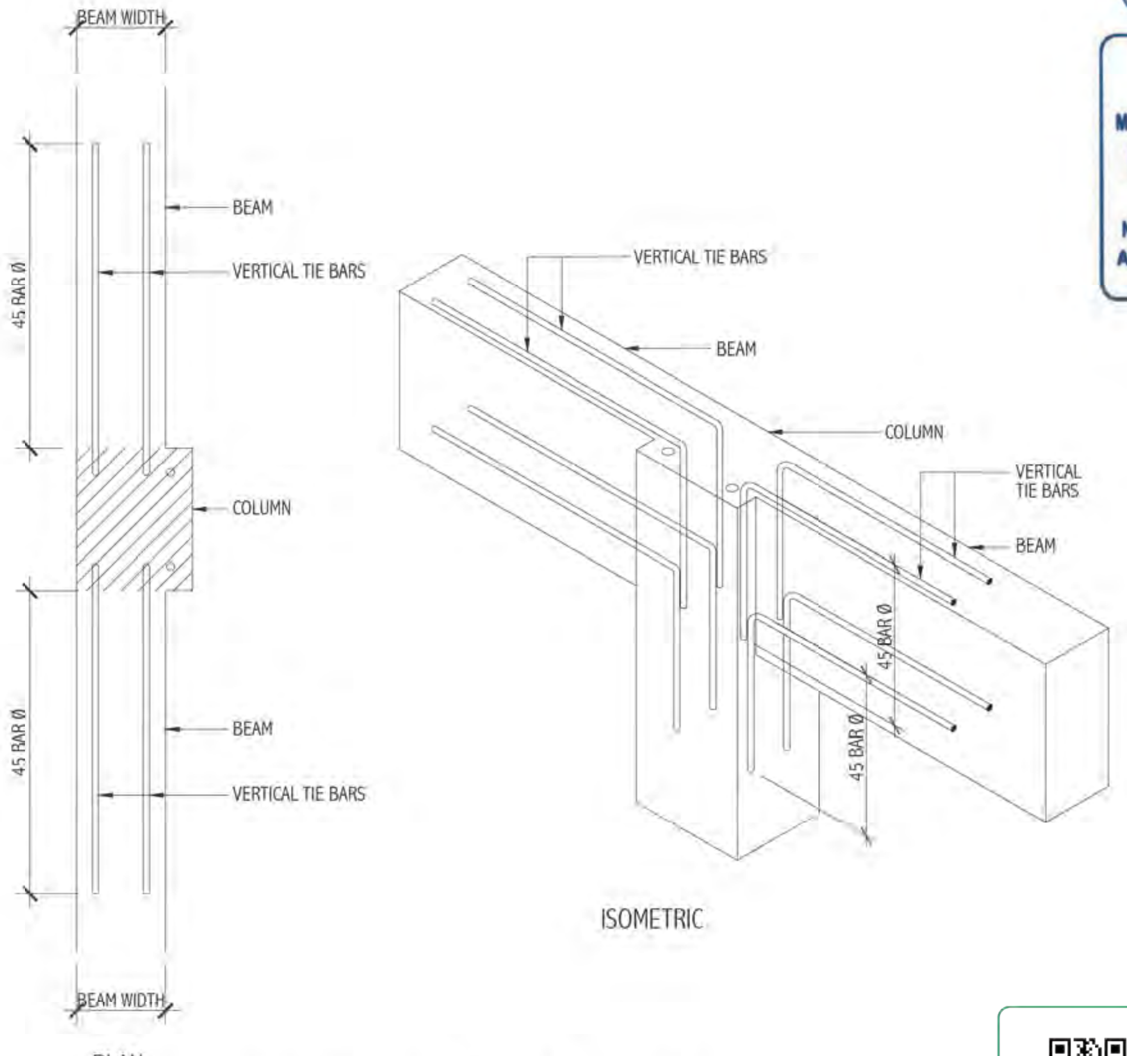


PLAN

ISOMETRIC

HORIZONTAL TIE BAR DETAIL-2

SCALE 1:20



PLAN

ISOMETRIC

VERTICAL TIE BAR DETAIL-2

SCALE 1:20

NOTE:

1.) LAPS MUST BE STAGGERED

2.) BARS OF TOP COLUMN LAPPED WHEN DISTANCE "X" IS LESS THAN OR EQUAL TO 50mm.

3.) BARS OF TOP COLUMN ANCHORED INTO BOTTOM COLUMN WHEN DISTANCE "X" BETWEEN BAR OF BOTTOM COLUMN IS THAN 50mm.

4.) CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ALL CONNECTION DETAILS TO CLIENTS ENGINEER FOR APPROVAL.

LEGEND:

═ = TOP COLUMN BARS

≡ = BOTTOM COLUMN BARS

APPROVED

HOUSING DEVELOPMENT CORPORATION

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
-	-	-	-

REV "A" ACCORDING TO ARCHITECTURAL PLAN XXX

This drawing should be used only for the project mentioned on this sheet

Client :
The Hawks Pvt Ltd

Project Title :
OFFICE COMPLEX
Hulhumale'

Building Name :
OFFICE COMPLEX

Drawing Title :
HORIZONTAL TIE BAR DETAIL 01 & 02 VERTICAL TIE BAR DETAIL 01

Scale :
1:20 / A3

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Designed By : **ZAYAAN**

Drawing Number :
21-004

Revision Number :
R00

File Name :
306-21-004R00

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 318452
Fax: 960 310317
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site.

1.0 GENERAL

READ THIS DRAWING IN CONJUNCTION WITH OTHER GENERAL NOTES DRAWINGS. THE NOTES CONTAINED IN THIS SHEET PERTAIN TO ALL DRAWINGS LISTED UNDER CIVIL AND STRUCTURAL WORKS. IF A CONFLICT OCCURS BETWEEN GENERAL SPECIFICATIONS AND ANY OF THESE DRAWINGS, THE INDIVIDUAL DRAWINGS SHALL GOVERN.

CIVIL AND STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATIONS, ARCHITECTURAL AND SERVICES ENGINEER'S DOCUMENTS AND DRAWINGS. ANY DISCREPANCIES IN THE DRAWINGS SHOULD BE REPORTED TO THE EMPLOYER'S PERSONNEL.

FOR SETTING OUT DIMENSIONS REFER TO ARCHITECTURAL DRAWINGS, NO DIMENSIONS ARE TO BE OBTAINED FROM SCALING DRAWINGS.

UNLESS OTHERWISE NOTED ALL LEVELS ARE IN METERS AND ALL DIMENSIONS IN MILLIMETERS. ELEVATIONS AND COORDINATION ARE BASED ON REDUCED LEVEL (R.L.). TEMPORARY BENCH MARK (T.B.M.) SHALL BE ESTABLISHED AND AGREED WITH THE RESIDENT ENGINEER AND THE LOCAL AUTHORITY PRIOR TO COMMENCEMENT OF WORKS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE STRUCTURE UNTIL ITS COMPLETION AND SHALL ENSURE THAT NO PART OF THE STRUCTURE IS OVERSTRESSED DURING ERECTION.

ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT BRITISH CODES OF PRACTICE UNLESS MORE ONEROUS REQUIREMENTS ARE GIVEN IN THE PROJECT DRAWINGS/ SPECIFICATIONS.

ALL DISCREPANCIES SHALL BE REFERRED TO THE ARCHITECT FOR DECISION BEFORE PROCEEDING WITH THE WORK.

INVERT LEVELS FOR MANHOLE SUMPS TO BE CONFIRMED WITH SERVICES DRAWINGS AND SHALL BE COORDINATED WITH EXISTING SERVICES.

LOCATIONS AND SIZES OF WALL AND SLAB OPENINGS FOR M&E DUCTING TO BE CONFIRMED WITH M&E DRAWINGS.

BASED ON THE DRAWINGS AND SPECIFICATIONS THE CONTRACTOR SHALL PRODUCE STRUCTURAL SHOP DRAWINGS FOR APPROVAL IF REQUESTED.

ALL PROPS AND FORMWORK FOR BEAMS AND SLABS SHALL BE REMOVED BEFORE CONSTRUCTION OF ANY MASONRY WALLS OR OTHER PERMANENT LOADING ON THE SLAB.

ALL NON-LOAD BEARING WALLS SHALL BE KEPT CLEAR OFF THE UNDERSIDE OF SLABS AND BEAMS BY 30mm. THE JOINT SHALL BE FILLED WITH FIBRE BOARD OR COMPRESSIBLE MATERIAL PRESSED METAL COVERING BOTH SIDES OF THE JOINT AND THE METAL COVERING SHALL BE FIXED TO SOFFIT OF THE BEAM OR SLAB AS THE CASE MAY BE.

FOUNDATION

FOUNDATION HAS BEEN DESIGNED FOR SAFE GROUND PRESSURE OF 200 KN/m²

ALL BACKFILL SHOULD BE DONE WITH APPROVED MATERIAL AND SOURCE. ALL BACKFILL SHOULD BE STRUCTURAL FILL, COMPACTED IN LAYERS AS SPECIFIED.

WEAK POCKETS FOUND BELOW THE ASSUMED FOUNDATION LEVELS SHALL BE REMOVED AND REPLACED BY PLAIN CONCRETE.

IN CASE OF EXCAVATIONS BELOW THE ASSUMED LEVEL OF THE FOUNDATION, THE SOIL SHALL BE REPLACED BY PLAIN CONCRETE.

IN CASE GROUND WATER IS PRESENT ABOVE FOUNDATION LEVEL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING THE SITE AND LOWERING THE GROUND WATER TO AT LEAST 70cm BELOW LEVEL OF FOUNDATIONS.

THE CONTRACTOR SHALL MAINTAIN DRY WORKING CONDITIONS THROUGHOUT THE CONSTRUCTION PERIOD.

NO BACKFILLING SHALL BE PLACED AGAINST WALLS RETAINING EARTH, UNLESS THE WALLS ACHIEVE SUFFICIENT STRENGTH TO PREVENT MOVEMENT OR STRUCTURAL DAMAGE.

DISTRIBUTION BARS FOR SLABS ARE T10 @ 300 C/C UNO.

TO PROVIDE INTEGRAL SEALING BETWEEN CONCRETE CAST INSITU IN SEPARATE POUR, APPROVED WATERSTOP HAS TO BE INSTALLED FOR ALL CONSTRUCTION JOINTS IN CONTACT WITH WATER AND SOIL.

ONE LAYER OF 0.6mm PLASTIC SHEET ACTING AS DPM SHOULD BE PROVIDED AT AREAS WHERE GROUND FLOOR SLAB ARE IN CONTACT WITH SOIL.

R.C. RETAINING WALLS SHALL HAVE T12 @ 150 C/C VERTICAL BARS AND T12 @ 200 C/C HORIZONTAL BARS UNLESS NOTED OTHERWISE.

R.C. WALLS SHALL HAVE T12 @ 150 C/C VERTICAL BARS AND T10 @ 200 C/C HORIZONTAL BARS UNLESS NOTED OTHERWISE.

NO OPENING HOLES CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE IN THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL.

NO ELECTRICAL CONDUIT AND PIPES ARE TO BE CAST IN COLUMNS OR THROUGH BEAMS WITHOUT PRIOR APPROVAL UNLESS OTHERWISE SHOWN IN THE DRAWINGS.

SPECIAL RULES REGARDING CONCRETING IN HOT WEATHER SHALL BE OBSERVED.

WATER PROOFING

(products as specified or alternatives as approved by Gedor or project engineer)

Apply strictly in accordance with manufacturer recommendations available in the forma of technical data sheets and guidance from authorised distributors.

1.Below ground (foundations, grade beams, column faces, other non-water retaining walls):
a.UNDERSIDE OF FOUNDATIONS, TANKS ETC: self-adhesive membrane Bitustik P or similar approved.
b.OTHER SURFACES:
i.PREFERRED: self-adhesive membrane Bitustik P or similar approved.
ii.ALTERNATIVE: MasterSeal 620 OR EuroProof RBE 404 (provides lesser protection than self-adhesive membranes)

2.Basements and water retaining structures: self-adhesive membrane Bitustik P

3.Bathrooms, balconies:
a.MasterSeal 588 (with mesh along corners and pipe penetrations) OR
b.Cemguard 400 (with mesh along corners and pipe penetrations) OR
c.MasterSeal 550 (with mesh along corners and pipe penetrations)

4.Terraces with screed and tiling: (for other finishes, consult Gedor and project engineer)
a.MasterSeal 588 (with mesh along corners and pipe penetrations) OR
b.Cemguard 400 (with mesh along corners and pipe penetrations)

5.Flat roofs for maintenance access and MEP purposes
a. Euroshield PU 411 (for exposed waterproofing) OR
b.Eurothane HP 425 (with mesh along corners and pipe penetrations) (for waterproofing protected by screed etc)

6.Marine structures (for exposed concrete surfaces)
a.Corrosion inhibiting primer finished with UV resistant waterproofing with anti-carbonation and chloride ingress inhibition features such as EuroCoat PU 1K 348

7.Floor screeds in contact with ground: damp-proof membrane minimum 250 micron PE with 150 laps and ends turned up 150mm above the top of screed to prevent ground moisture into the building.

8.Walls: apply damp proof coarse along horizontal masonry joint immediately above internal floor finish level.

a.Apply MasterCast 141 OR Eurobond SBR 201 and cement slurry and

b.SBR modified mix using one of the above chemicals, cement and sand mortar for joints

ADMIXTURES
In addition to plasticiser, use MasterFibre 12 (PP fibres 12mm long) as admixture for external renders, roof screed and floor screeds to minimise cracking.

1.22 ABBREVIATIONS

APPROX	APPROXIMATE
B	BEAM
B.W.	BOTH WAYS
BOT OR BTM	BOTTOM
BOB	BOTTOM OF BASE
BOS	BOTTOM OF STEEL
BOT	BOTTOM OF TRUSS
(B1)	BOTTOM STEEL BOTTOM REINFORCEMENT
(B2)	BOTTOM STEEL TOP REINFORCEMENT
BLDG	BUILDING
℄	CENTER LINE
C/C	CENTER TO CENTER
C	COLUMN
CO-ORD	CO-ORDINATE
DPC	DAMP PROOF COURSE
DET OR DTL	DETAIL
DIA	DIAMETER
D/B	DISTRIBUTION BAR
DWG	DRAWING
EF	EACH FACE
EW	EACH WAY
EL	ELEVATION (HEIGHT)
ELEV	ELEVATION (VIEW)
FF	FAR FACE
FS	FAR SIDE
FW	FILLET WELD
FFL	FINISHED FLOOR LEVEL
FDN OR FND	FOUNDATION
FB	FOUNDATION BEAM
GA	GENERAL ARRANGEMENT
G.I.	GALVANIZED IRON
IL	INVERT LEVEL
LG	LONG OR LENGTH
MAX	MAXIMUM
MKD	MARKED
MIN	MINIMUM
MISC	MISCELLANEOUS
N/F	NEAR FACE
N/S	NEAR SIDE
NOM	NOMINAL
NTS	NOT TO SCALE
Nos	NUMBERS
O/D	OUTSIDE DIAMETER
PL	PAVEMENT LEVEL
PROJ	PROJECTION
QTY	QUANTITY
RAD	RADIUS
R.C.	REINFORCED CONCRETE
REQ'D	REQUIRED
SW	SHEAR WALL
STIFF	STIFFENER
SQ	SQUARE
SFL	STRUCTURAL FINISH LEVEL
THK	THICK (NESS)
TEMP	TEMPORARY
TOB	TOP OF BEAM
TOC	TOP OF COLUMN
TOG	TOP OF GROUT
TO Platf	TOP OF PLATFORM
TS	TOP OF SLAB
TOS	TOP OF STEEL
TOT	TOP OF TRUSS
TYP	TYPICAL
U/S	UNDERSIDE
UNO	UNLESS NOTED OTHERWISE
(T1)	TOP STEEL TOP REINFORCEMENT
(T2)	TOP STEEL BOTTOM REINFORCEMENT
(UPB)	UPSTAND BEAM

2.0 REINFORCED CONCRETE

2.1 THE CONTRACTOR IS REQUIRED TO SUBMIT A DRAWING SHOWING THE INTENDED SEQUENCE OF POURING, LOCATION AND DETAILS OF CONSTRUCTION JOINTS TO MINIMIZE THE POSSIBILITY OF OCCURRENCE OF SHRINKAGE CRACKS.

2.2 STRUCTURAL CONCRETE SHALL UNLESS NOTED OTHERWISE HAVE FOLLOWING GRADES TO BS 8110 AND AGGREGATES SHALL BE TO BS 882 WITH A NOMINAL SIZE AS SHOWN

STRUCTURAL ELEMENT	fcu (N/mm2)	AGGREGATE NOMINAL SIZE
RAFT (BEAM & SLAB)	35	20
COLUMN	35	
R.C. WALL	35	
INSITU BEAMS	35	
SLABS	35	
STIFFENER & LINTEL	30	
MASS CONCRETE	25	
LEAN CONCRETE	15	

2.3 CEMENT SHALL BE ORDINARY PORTLAND CEMENT TO BS 12.

2.4 50mm BLINDING CONCRETE SHALL BE GRADE 15 TO BS 8110 MARINE AGGREGATES/SAND SHALL NOT BE USED (CHARACTERISTICS STRENGTH fcu=15N/mm2 AND SHALL BE PLACED BENEATH ALL GROUND BEAMS, RAFT STRUCTURE AND BASES OF TRENCHES BEFORE LAYING OF REINFORCEMENT UNO.

2.5 MINIMUM COVER TO OUTERMOST REINFORCEMENT INCLUDING LINKS SHALL BE AS FOLLOWS.

STRUCTURAL ELEMENT	COVER (mm)
RAFT BEAM & SLAB (EARTH FACE)	75
RAFT BEAM & SLAB (INTERNAL FACE)	50
COLUMN	40
BEAM	35
BEAM (EXTERNAL FACE)	40
SLAB	30
INTERNAL WALL	30
EXTERNAL WALL	40

NOTE: EARTH FACE OF BEAMS, COLUMNS & WALLS SHOULD BE 50mm

2.6 REINFORCEMENT STEEL SHALL BE HOT ROLLED STEEL TO BS 4449 AS FOLLOWS:

MILD STEEL GRADE 250, fy = 250 N/mm2 DENOTED AS R
HIGH TENSILE DEFORMED GRADE 460, fy = 460 N/mm2 DENOTED AS T
WELDED STEEL MESH TO BS 4483, fy = 485 N/mm2 DENOTED AS WM

2.7 BAR DIAMETERS ARE EXPRESSED IN MILLIMETERS.

2.8 BENDING OF REINFORCEMENTS SHALL BE IN ACCORDANCE WITH BS 4466.

2.9 REINFORCEMENT IS NOTED AS FOLLOWS:

10-R12-300(T). THIS DENOTES 10 Nos. 12mm DIAMETER MILD STEEL BARS AT 300mm CENTERS PLACED AT THE TOP.

2.10 ALL GROUTING SHALL BE 25mm THICK USING A 1:2 CEMENT/SAND MIXTURE UNLESS NOTED OTHERWISE ON THE DESIGN DRAWINGS.

2.11 APPROVED NON-SHRINK GROUT SHALL BE USED. GROUT CONTAINING METAL PARTICLES SHALL NOT BE USED.

2.12 ANCHOR BOLTS SHALL BE BOLT GRADE 4.6 IN STEEL MATERIAL OR GRADE S275 TO BS EN 10025 (GRADE 43A TO BS 4360) AND HOT-DIPPED GALVANIZED U.N.O. ANCHOR BOLTS SHALL BE PLUMBED AND WITHIN 1mm OF THE POSITIONS AND LEVELS ON THE DESIGN DRAWINGS.

2.13 WATERPROOFING SYSTEM AS SPECIFIED IN THE SPECIFICATIONS SHALL BE USED IN STRUCTURAL ELEMENTS WHICH ARE CONTINUOUSLY IN CONTACT WITH SOIL OR WATER, LIFT PIT, ROOF SLAB, R.C. RETAINING WALL AND RAFT ETC.

2.14 APPROVED SELF LEVELLING FREE FLOW PRECISION GROUTING SHALL BE USED TO LEVEL TOP OF WATER TANK CONCRETE PLINTHS IF NECESSARY.

2.15 REINFORCEMENT ANCHORAGE OR LAPPING IS AS FOLLOWS U.N.O.

	BAR GRADE 460
TENSION	56Ø
COMPRESSION	40Ø

Ø IS DIAMETER OF THE SMALLER SIZED LAPPED BAR.

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
STRUCTURAL CHECKER A1
Name: Mohamed Shareef VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023010A1 A1-2023-010-001

Ministry of National Planning, Housing & Infrastructure
ACCREDITED CHECKER
ARCHITECTURAL CHECKER B1
Name: Abdulla Thalaal Ahmed VALIDITY: 23.09.23 - 04.09.25
Accredited No: BPR2023022B1 B1-2023-022-001

Revision	Date	Drawn By	Checked By
-	-	-	-

REV "A" ACCORDING TO ARCHITECTURAL PLAN XXX

This drawing should be used only for the project mentioned on this sheet

Client :
The Hawks Pvt Ltd

Project Title :
OFFICE COMPLEX
Hulhumale'

Building Name :
OFFICE COMPLEX

Drawing Title :
STRUCTURAL ENGINEERING
REFERENCE NOTES, GUIDE

Scale :
A.S. / A3

Discipline :
STRUCTURAL

Stage :
SUBMISSION

Original Drawn By : **DILUSHA**
Date : **DECEMBER 2023**
Checked By : **SHAREEF**
Designed By : **ZAYAAN**

Drawing Number :
21-001

Revision Number :
R00

File Name :
306-21-001R00

APPROVED
HOUSING DEVELOPMENT CORPORATION

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 318452
Fax: 960 310317
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

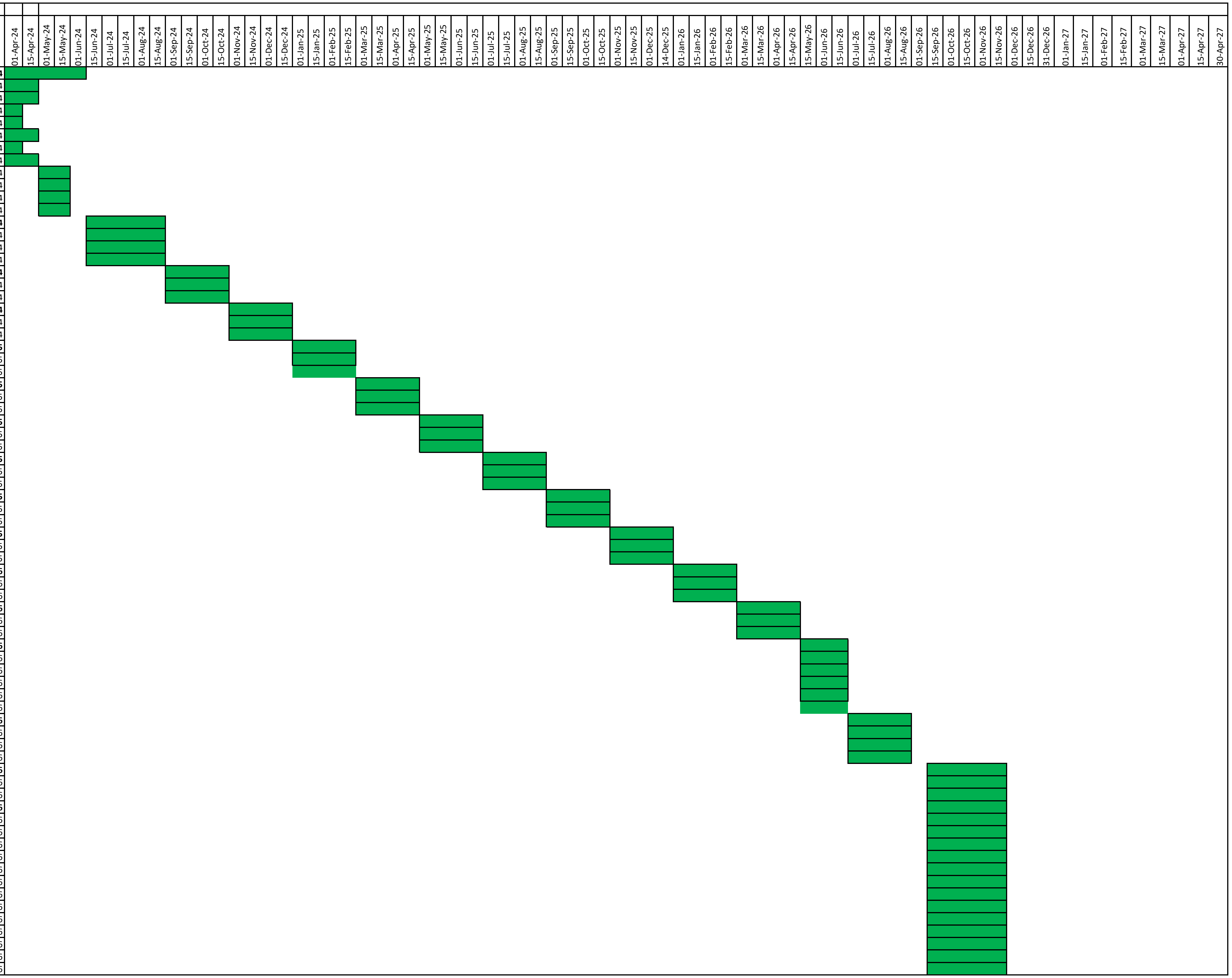
GEDOR CONSULTING PVT. LTD.

All dimensions to be checked on site.

APPENDIX G. DETAILED WORK SCHEDULE

Work Schedule for Proposed office complex Building Hulhumale'

ID	Task name	Duration	Start
1	**GROUND WORKS**	**70 Days**	**01/04/2024**
2	Excavation	27 Days	01/04/2024
3	Shoring & Fencing	25 Days	01/04/2024
4	Water Well	4 Days	01/04/2024
5	PE Sheet	7 Days	01/04/2024
6	Water Proofing	22 Days	01/04/2024
7	Lean Concrete	10 Days	01/04/2024
8	Safety Works	20 Days	01/04/2024
9	Raft Foundation (FW, Reinf, Conc)	28 Days	25/04/2024
10	Raft Beams (FW, Reinf, Conc)	28 Days	25/04/2024
11	Columns (Stub) (FW, Reinf, Conc)	28 Days	25/04/2024
12	Back Filling Works	28 Days	25/04/2024
13	**Basement Level -B1**	**62 Days**	**15/06/2024**
14	Columns, Lift walls and Staircase (FW, Reinf, Conc)	62 Days	15/06/2024
15	Attached beams and slab (FW, Reinf, Conc)	62 Days	15/06/2024
16	Retaining Wall	62 Days	15/06/2024
17	**Ground Floor**	**55Days**	**25/08/2024**
18	Columns, Lift walls and Staircase (FW, Reinf, Conc)	55Days	25/08/2024
19	Attached beams and slab (FW, Reinf, Conc)	55Days	25/08/2024
20	**First Floor**	**55 Days**	**25/10/2024**
21	Columns, Lift walls and Staircase (FW, Reinf, Conc)	55 Days	25/10/2024
22	Attached beams and slab (FW, Reinf, Conc)	55 Days	25/10/2024
23	**Second Floor**	**56 Days**	**01/01/2025**
24	Columns, Lift walls and Staircase (FW, Reinf, Conc)	56 Days	01/01/2025
25	Attached beams and slab (FW, Reinf, Conc)	56 Days	01/01/2025
26	**Third Floor**	**55 Days**	**01/03/2025**
27	Columns, Lift walls and Staircase (FW, Reinf, Conc)	55 Days	01/03/2025
28	Attached beams and slab (FW, Reinf, Conc)	55 Days	01/03/2025
29	**Fourth Floor**	**55 Days**	**01/05/2025**
30	Columns, Lift walls and Staircase (FW, Reinf, Conc)	55 Days	01/05/2025
31	42 Attached beams and slab (FW, Reinf, Conc)	55 Days	01/05/2025
32	**Fifth Floor**	**54 Days**	**01/07/2025**
33	Columns, Lift walls and Staircase (FW, Reinf, Conc)	54 Days	01/07/2025
34	Attached beams and slab (FW, Reinf, Conc)	54 Days	01/07/2025
35	**Sixth Floor**	**54 Days**	**01/09/2025**
36	Columns, Lift walls and Staircase (FW, Reinf, Conc)	54Days	01/09/2025
37	Attached beams and slab (FW, Reinf, Conc)	54 Days	01/09/2025
38	**Seventh Floor**	**55 Days**	**01/11/2025**
39	Columns, Lift walls and Staircase (FW, Reinf, Conc)	55 Days	01/11/2025
40	Attached beams and slab (FW, Reinf, Conc)	55Days	01/11/2025
41	**Eighth Floor**	**55 Days**	**01/01/2026**
42	Columns, Lift walls and Staircase (FW, Reinf, Conc)	55 Days	01/01/2026
43	Attached beams and slab (FW, Reinf, Conc)	55 Days	01/01/2026
44	**Ninth Floor**	**55 Days**	**01/03/2026**
45	Columns, Lift walls and Staircase (FW, Reinf, Conc)	55 Days	01/03/2026
46	Attached beams and slab (FW, Reinf, Conc)	55Days	01/03/2026
47	**Terrace Level**	**60 Days**	**01/05/2026**
48	Columns, Lift walls and Staircase (FW, Reinf, Conc)	60 Days	01/05/2026
49	Attached beams and slab (FW, Reinf, Conc)	60 Days	01/05/2026
50	Swimming poll	60 Days	01/05/2026
51	Pergolar Roof	60 Days	01/05/2026
52	Sundeck	50 Days	01/05/2026
53	**Terrace Roof Level -RF1 & Machine Room**	**52Days**	**01/07/2026**
54	Columns, Lift walls and Staircase (FW, Reinf, Conc)	52 Days	01/07/2026
55	Attached beams and slab (FW, Reinf, Conc)	52 Days	01/07/2026
56	Boundry Walls (FW, Reinf, Conc)	52 Days	01/07/2026
57	**Water Proofing Works**	**68 Days**	**08/09/2026**
58	Waterproofing material to the surface of roof slab , Pool area &	68 Days	08/09/2026
59	Waterproofing material to the surface of Toilets & Balconies in	68 Days	08/09/2026
60	**MASONRY AND PLASTERING**	**68 Days**	**08/09/2026**
61	Ground Floor	68 Days	08/09/2026
62	First Floor	68 Days	08/09/2026
63	Second Floor	68 Days	08/09/2026
64	Third Floor	68 Days	08/09/2026
65	Fourth Floor	68 Days	08/09/2026
66	Fifth Floor	68 Days	08/09/2026
67	Fifth Floor	68 Days	08/09/2026
68	Sixth Floor	68 Days	08/09/2026
69	Seventh Floor	68 Days	08/09/2026
70	Eighth Floor	68 Days	08/09/2026
71	Ninth Floor	68 Days	08/09/2026
72	Terrace Level	68 Days	08/09/2026
73	Terrace Roof Level -RF1 & Machine Room	68 Days	08/09/2026



Work Schedule for Proposed office complex Building Hulhumale'

ID	Task name	Duration	Start
74	**METAL WORKS & GLASS RAILING**	**30 Days**	**15/02/2027**
75	Staircase Handrailing	30 Days	15/02/2027
76	High Glass Railing	30 Days	15/02/2027
77	Pool Works	30 Days	15/02/2027
78	Privacy Screen	30 Days	15/02/2027
79	**CEILING WORKS**	**90 Days**	**08/10/2026**
80	Ground Floor (Toilets,Parking Area, Lift lobby)	90 Days	08/10/2026
81	First Floor (Toilets, Lift lobby)	90 Days	08/10/2026
82	Second Floor (Toilets, Lift lobby)	90 Days	08/10/2026
83	Third Floor (Toilets, Lift lobby)	90 Days	08/10/2026
84	Fourth Floor (Toilets, Lift lobby)	90 Days	08/10/2026
85	Fifth Floor (Toilets, Lift lobby)	90 Days	08/10/2026
86	Fifth Floor (Toilets, Lift lobby)	90 Days	08/10/2026
87	Sixth Floor (Toilets, Lift lobby)	90 Days	08/10/2026
88	Seventh Floor (Toilets, Lift lobby)	90 Days	08/10/2026
89	Eighth Floor (Toilets, Lift lobby)	90 Days	08/10/2026
90	Ninth Floor (Toilets, Lift lobby)	90 Days	08/10/2026
91	Terrace Level -T1 (Toilets, Lift lobby)	90 Days	08/10/2026
92	**DOORS AND WINDOWS**	**90 Days**	**08/10/2026**
93	Ground Floor	90 Days	08/10/2026
94	First Floor	90 Days	08/10/2026
95	Second Floor	90 Days	08/10/2026
96	Third Floor	90 Days	08/10/2026
97	Fourth Floor	90 Days	08/10/2026
98	Fifth Floor	90 Days	08/10/2026
99	Sixth Floor	90 Days	08/10/2026
100	Seventh Floor	90 Days	08/10/2026
101	Eighth Floor	90 Days	08/10/2026
102	Ninth Floor	90 Days	08/10/2026
103	Terrace Level	90 Days	08/10/2026
104	**TILING WORKS**	**90 Days**	**08/10/2026**
105	Ground Floor	90 Days	08/10/2026
106	First Floor	90 Days	08/10/2026
107	Second Floor	90 Days	08/10/2026
108	Third Floor	90 Days	08/10/2026
109	Fourth Floor	90 Days	08/10/2026
110	Fifth Floor	90 Days	08/10/2026
111	Sixth Floor	90 Days	08/10/2026
112	Seventh Floo	90 Days	08/10/2026
113	Eighth Floor	90 Days	08/10/2026
114	Ninth Floor	90 Days	08/10/2026
115	Terrace Level	90 Days	08/10/2026
116	Pool Tiling	90 Days	08/10/2026
117	**HYDRAULICS & DRAINAGE**	**210 Days**	**25/05/2025**
118	Ground Floor	120 Days	25/05/2025
119	First Floor	120 Days	25/05/2025
120	Second Floor	110 Days	25/05/2025
121	Third Floor	110 Days	25/05/2025
122	Fourth Floor	110 Days	25/05/2025
123	Fifth Floor	110 Days	11/09/2025
124	Sixth Floor (Toilets, Lift lobby)	110 Days	11/09/2025
125	Seventh Floor (Toilets, Lift lobby)	110 Days	11/09/2025
126	Eighth Floor (Toilets, Lift lobby)	110 Days	11/09/2025
127	Ninth Floor (Toilets, Lift lobby)	110 Days	11/09/2025
128	Terrace Level -T1 (Toilets, Lift lobby)	110 Days	11/09/2025
129	**ELECTRICAL, IT & HVAC INSTALLATIONS**	**320 Days**	**15/12/2025**
130	Basement Level	100 Days	15/12/2025
131	Ground Floor	100 Days	15/12/2025
132	First Floor	100 Days	15/12/2025
133	Second Floor	100 Days	25/03/2026
134	Third Floor	100 Days	25/03/2026
135	Fourth Floor	100 Days	25/03/2026
136	Fifth Floor	100 Days	25/03/2026
137	Sixth Floor	100 Days	15/07/2026
138	Seventh Floor	100 Days	15/07/2026
139	Eighth Floor	100 Days	15/07/2026
140	Ninth Floor	100 Days	15/07/2026
141	Terrace Level	100 Days	15/07/2026
142	**COMMON WORKS**	**71 Days**	**15/02/2027**
143	Main Connection	71 Days	15/02/2027
144	Electrical boards	71 Days	15/02/2027
145	MWSC Sewer main connection	71 Days	15/02/2027
146	Lifts	71 Days	15/02/2027
147	Pumps	71 Days	15/02/2027

APPENDIX H. WATER QUALITY ASSESSMENT RESULTS

Male' Water & Sewerage Company Pvt Ltd
Water Quality Assurance Laboratory
Quality Assurance Building, 1st Floor, Male' Hingun, Vilimale', Male' City, Maldives
Tel: +9603323209, Fax: +9603324306, Email: wqa@mwsc.com.mv

LB-TEST-090

WATER QUALITY TEST REPORT

Report No: 500199694

Customer Information:
Eco-Tech Consultancy Pvt Ltd
M. Husnoo villa, Unigas Magu,

Report date: **26/02/2024**
Test Requisition Form No: **900199926**
Sample(s) Recieved Date: **19/02/2024**
Date of Analysis: **19/02/2024 - 22/02/2024**

Sample Description ~	Hawks Office plot 11769 G1	GC	**TEST METHOD**	**UNIT**
Sample Type ~	Ground Water	Ground Water		
Sample No	83247103	83247104		
Sampled Date ~	18/02/2024 02:40 PM	18/02/2024 02:40 PM		
Physical Appearance	Opaque and grey with particles	Opaque and grey with particles		
PARAMETER	**ANALYSIS RESULT**			
Conductivity *	688	245	Method 2510 B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	µS/cm
pH *	7.9	8.9	Method 4500-H+ B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	-
Salinity	0.34	0.12	Method 2520 B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	‰
Temperature	23.6	23.7	Electrometry	°C
Total Dissolved Solids	344	122.7	Electrometry	mg/L
Total Suspended Solids	332	281	HACH Method 8006	mg/L
Dissolved Oxygen (DO)	7.58	5.36	In-house Test method (Adapted from HACH BOD LDO® Probe (Model LBOD10101) manual)	mg/L
Total Coliforms	>2420 (19/02/2024 03:00 PM)	>2420 (19/02/2024 03:00 PM)	Colilert®-18/Quanti-Tray®2000	MPN/100ml
Faecal Coliforms	>2420 (19/02/2024 03:00 PM)	>2420 (19/02/2024 03:00 PM)	Colilert®-18/Quanti-Tray®2000	MPN/100ml

Keys: µS/cm : Micro Seimen per Centimeter, **‰** : Parts Per Thousand, **°C** : Degree Celcius, **mg/L** : Milligram Per Liter, **MPN/100ml** : Most Probable Number

Checked by

Aminath Sofa
Senior Laboratory Executive

Approved by

Nihaz A. Zahir
Assistant Quality Manager

Notes:
Sampling Authority: Sampling was not done by MWSC Laboratory.
This report shall not be reproduced except in full, without written approval of MWSC.
This test report is ONLY FOR THE SAMPLES TESTED.
~ Information provided by the customer. This information may affect the validity of the test results.
*Parameters accredited by EIAC under ISO/IEC 17025:2017

************************** END OF REPORT **************************

APPENDIX I. FORMAT FOR FUEL HANDLING PROCEDURE

Following is the fuel handling procedure format expected for this project. The procedure shall include the following;

- Introduction
    - Name and contacts of the applicable facility
    - Major aims and objectives
- Applicability and scope
- Proposed fuel delivering and dispensing procedure for construction phase
- Proposed fuel delivering and dispensing procedure for operational phase
- Emergency Protocols
    - In case of spills

APPENDIX J. FORMAT FOR HEALTH AND SAFETY MANUAL

Following is the health and safety manual format expected for this project. The manual shall include the health and safety policy of the proponent, roles and responsibilities of key personnel, detailed health and safety procedures.

- Introduction
  - Name and contacts of the applicable facility
  - Major aims and objectives
- Applicability and scope
- Health and safety policy
- Roles and responsibilities
  - Organizational chart
  - Describe in detail the responsibilities of each personnel
- Health and safety procedures
  - Describe in detail the health and safety procedures for all key works at the applicable facility for instance procedure for;
- handling electrical appliances
- chemical handling
- preventive procedures
- employee behavior and attitude
- handling accidents
- training
- waste disposal
- latest first aid procedure

APPENDIX K. FORMAT FOR EMERGENCY PREPAREDENESS AND RESPONSE PLAN

Following is the emergency preparedness and response plan format expected for this project. The plan shall include the following;

- Introduction
  - Name and contacts of the applicable facility
  - Major aims and objectives
- Applicability and scope
- Roles and responsibilities
  - Organizational chart
  - Describe in detail the responsibilities of each personnel
- Emergency reporting procedures
  - Communications hierarchy for reporting incidents
  - Emergency communications methods
- Emergency contact directory
- Locations of important items
  - Procedures for media inquiries
  - Test, training and exercises
- Emergency Protocols
  - Identify and describe in detail how to tackle all the possible emergency scenarios for example;
  - If someone is injured or ill
  - Electrocution
  - Failure or significant interruption in key system processes
  - Chemical spill

APPENDIX L. EVIDENCE OF EIA REPORT SUBMISSION TO ATOLL COUNCIL, MALE’ CITY AND HDC

Mahfooz AbdullWahhab <mahfoozabdullwahhab@gmail.com>

Environmental Impact Assessment for the Proposed Development of the Hawks Office Complex at Lot 11769, Hulhumale' Phase 1, Kaafu Atoll

1 message

Mahfooz Abdul Wahhab <mahfooz@ecotechconsultancy.com> Wed, Mar 13, 2024 at 11:22 AM
To: secretariat@malecity.gov.mv, secretariat@kaaf.gov.mv, mail@hdc.com.mv
Cc: Eco-Tech Consultancy <secretariat@ecotechconsultancy.com>, "Ibrahim R. Adam" <rashihu@ecotechconsultancy.com>

Dear Sir/Madam,

Please follow the link below for the captioned EIA report.

https://drive.google.com/open?id=13Fm4q8a1TCB50kDs6iZRY0bt-vRDyza1&usp=drive_fs

Best Regards,

ECO-TECH
CONSULTANCY

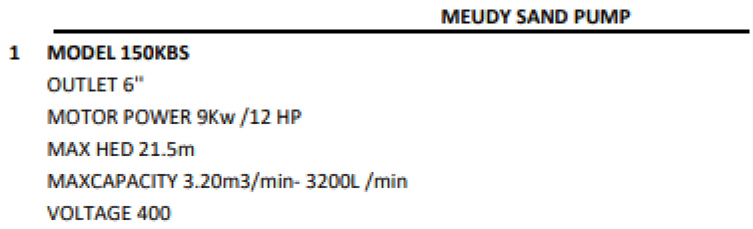
Mahfooz Abdul Wahhab
Managing Director
Eco-Tech Consultancy Pvt. Ltd
M. Husnoovilaa, Unigas Magu,
Male', 20296, Kaafu Atoll, Maldives
Website: www.ecotechconsultancy.com
(+960) 9994467

APPENDIX M. DEWATERING ROUTE MAP

The following route is not yet finalized, however this is the most likely route that will be approved.

APPENDIX N. DEWATERING PUMP SPECIFICATIONS

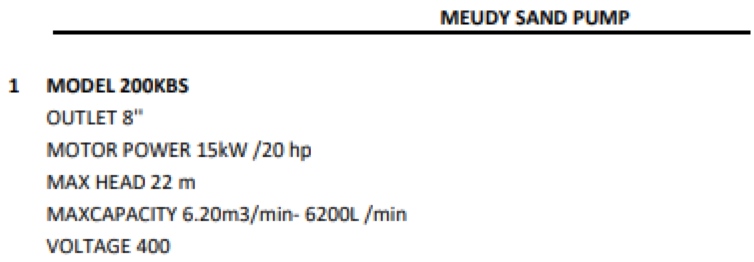
6 inch pump



MEUDY SAND PUMP

1 **MODEL 150KBS**
OUTLET 6"
MOTOR POWER 9Kw /12 HP
MAX HED 21.5m
MAXCAPACITY 3.20m3/min- 3200L /min
VOLTAGE 400

8 inch pump

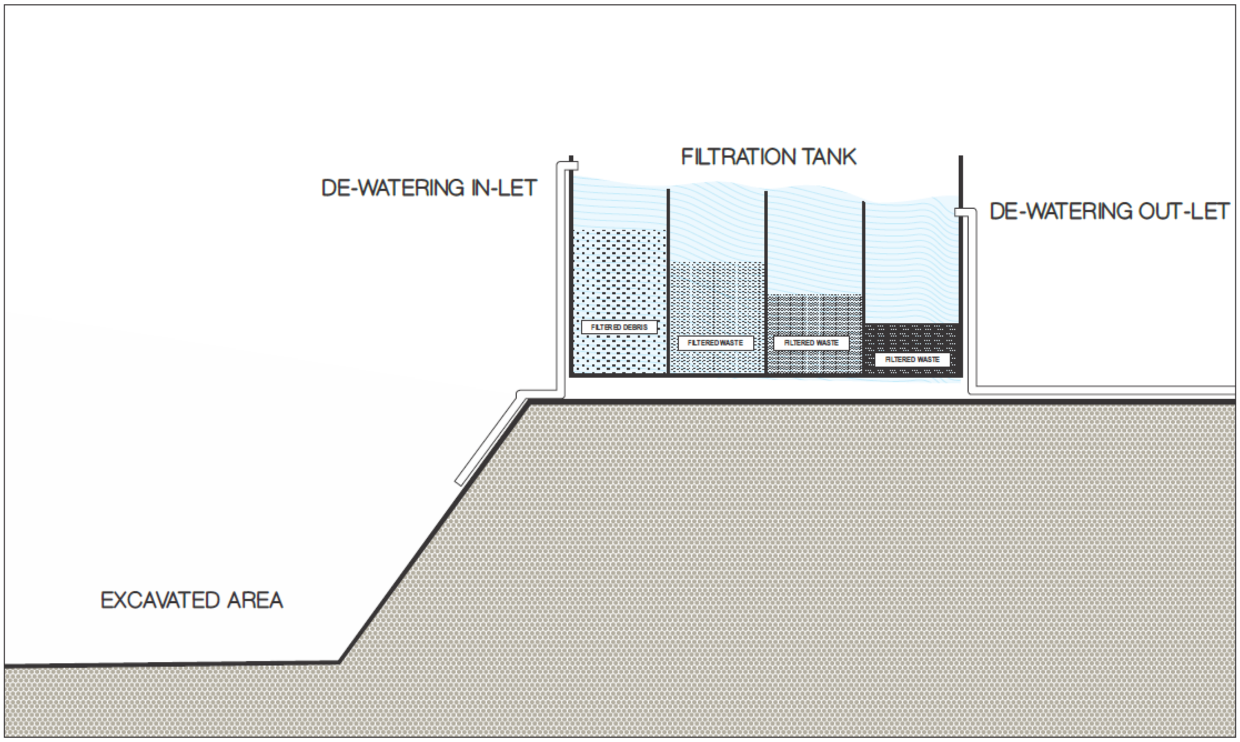


MEUDY SAND PUMP

1 **MODEL 200KBS**
OUTLET 8"
MOTOR POWER 15kW /20 hp
MAX HEAD 22 m
MAXCAPACITY 6.20m3/min- 6200L /min
VOLTAGE 400

APPENDIX O. DEWATERING FILTRATION METHOD

Following filtration method is adopted from the EIA for the proposed Apollo 1000 housing units development project at Hulhumale' Lot N3-55C, Kaafu Atoll. This method is being proposed to be used in this project as well.



APPENDIX P. MATERIAL LIST

Bill Of Quantities (BOQ)

BOQ for:

Construction of Proposed 12 Storey Office Complex Building Including Basement and Terrace at Hulhumale , Republic Of Maldives for the Employer of M/S. The Hawks Pvt Ltd

Project Title:

Proposed New Office Complex Building at Hulhumale , Republic Of Maldives.

Lot : 11769

Contract No :

The Employer : The Hawks Pvt Ltd

Date : 11-Mar-24

GEDOR CONSULTING PVT. LTD

Construction of Proposed 12 Storey Office Complex Building Including Basement and Terrace at Hulhumale , Republic Of Maldives for the Employer of M/S. The Hawks Pvt Ltd

BOQ Summary **Date : 11-Mar-24**

Bill Item No	Description	Total Amount (MVR)
1.0	Preliminaries	-
2.0	Ground Works	-
3.0	Concrete Works	-
4.0	Masonry Works	-
5.0	Metal Works	-
6.0	Ceiling and Other Timber Works	-
7.0	Door , Window & Glazing Works	-
8.0	Painting Works	-
9.0	Tiling Works	-
9.A	Stud Frame Partition Wall	-
10.0	Electrical Installation - Pending	-
11.0	Hydraulics , Drainage and Sanitary Fixtures - Pending	-
12.0	Air Conditioning Works - Pending	-
13.0	Lift Installation	-
14.0	Fire Fighting Works	-
14A	Other Works	-
14B	External Glazing Wall System & Wall Cladding	-
15.0	Additional Works	-
16.0	Omission Works	-
	Total (MVR)	**-**
	Add : GST - 8%	**-**
	Grand Total (MVR)	**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 1 **Preliminaries**				
1.1	**General Notes**				
1	Symbols & Abbreviations				
	m - meter				
	nr - numbers				
	m^3 - cubic meter				
	m^2 - square meter				
	kg - kilograms				
	t - tonne				
	incl - including				
	mm - millimeter				
	> - exceeding				
	≥ - equal to or exceeding				
	dia - diameter				
	≤ - not exceeding				
	< - less than				
	% - percentage				
	SS - Stainless Steel				
	GI - Galvanized Iron				
	Qty - Quantity				
1.2	**Site Management , Staff & Office Maintain Cost**				
1	Allow for site management cost including technical staff etc.	Item	1.00		-
2	Allow for temporary office maintain at site & maintaining facilities including office equipment , stationeries , computers & printers , if any other cost and dismantle on completion.	Item	1.00		-
3	Allow to the Contractor to include plant , machineries and equipment cost related to the works.	Item	1.00		-
4	Allow to make the contractor's staff quarters for staff , workers and maintain , dismantle on completion.	Item	1.00		-
5	Temporary connections for water & electricity.	Item	1.00		-
6	Allow to make payment for bills of water & electricity during the works.	Item	1.00		-
7	Allow to provide sanitary facilities & maintain during the construction period.	Item	1.00		-
8	Temporary sheds for storage etc & maintain during the constriction period , dismantle on completion.	Item	1.00		-
1.3	**Temporary Fencing and Hoarding**				
	Supply, erect & maintain of a fence through out the construction period and hoarding all along the perimeter of the site until completion.	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 1 **Preliminaries**				
1.4	**Safety On Site and Site Security Works**				
	Providing and maintains adequate safety measures for whole workers , staff and authorized visitors and site security works for the works and people until completion of the works.	Item	1.00		-
1.5	**Name Board and Sign Board**				
1	Allow for making & maintain name board until completion the works.	Item	1.00		-
2	Allow for making & maintain sign board until completion the works.	Item	1.00		-
1.6	**Clean-up**				
	Allow for clean-up of completed works and site upon completion. Rate to include demobilization & removal of debris and garbage from site.	Item	1.00		-
1.7	**Setting Out**				
	Setting out of the Works	Item	1.00		-
1.8	**Precautionary , protect on ground or underground existing utilities , structures , services until complete the works.**				
	Allow for precaution measures & maintaining for existing building , structure , foundation until completion the works as required. If there is any existing services to be protected can be included under this item.	Item	1.00		-
1.9	**Approvals from Statutory Authorities**				
	Allow to provide related statutory approvals from government authorities pre & post construction stage etc…	Item	1.00		-
1.10	**As Built Drawings**				
	Allow to provide cost for make as built drawing on completion.	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 1 **Preliminaries**				
1.11	**Contractual Requirement**				
1	Provide all insurances under the contract as in Conditions of Contract.	Item	1.00		-
2	Provide performance security bond as per the conditions of contract.	Item	1.00		-
3	Provide advance security bond as per the conditions of contract.	Item	1.00		-
4	Provide monthly progress report (couple of original copies) with photos prints each month.	Item	1.00		-
5	Provide originals and copies of operation and maintenance data manuals as per the contract stated.	Item	1.00		-
6	Inspection and testing of materials at Manufacturer's Works by the Employer, the Engineer, Representatives/Assistants appointed by the Engineer.	Item	1.00		-
7	Payment to Relevant Statutory Utility Services Organizations for relocation of existing services as specified.	Item	1.00		-
8	Allow for reimbursement of taxes imposed at the customs for imported items by the Contractor.	Item	1.00		-
9	Sample testing & Obtaining test report	Item	1.00		-
	Total of Bill No: 01 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 02 **Ground Works**				
2.1	**General**				
	(a) Rates shall include for: leveling, grading, trimming, compacting to faces of excavation, dewatering, keep sides plumb, backfilling, consolidating and disposing surplus & debris from site.				
	(b) All are according to the detailed drawing and specification.				
	(c) Rate shall include all the works completely unless other wise measured separately.				
	(d) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed for completion.				
2.2	**Site clearance**				
	Clearing site including if any trees, stumps , roots etc . Rate to include disposal of material away from the site.	m^2	577.00		-
2.3	**Excavation**				
	(a) Excavation quantities are measured to the faces of concrete members. Rates shall include for all additional excavation required to place the formwork and disposal of excavated material from site.				
1	Excavation for foundation/basement	m^3	3,750.00		-
2.3a	**Soil Compaction/Floor Preparation**				
	Compaction of basement bottom surface after excavated, leveling and preparation for concrete works, as according to the technical requirement.	Item	1.00		-
2.4	**Back Filling**				
1	Backfilling & well compact with suitable filling material, space around the excavated line as directed by the engineer.	Item	1.00		-
2	Allow backfilling for boundary wall space due to excavated, as directed by the engineer.	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 02 **Ground Works**				
2.5	**Shoring Works**				
1	Shoring system around excavated line , depth as suitable to site , including Steel Plate , Expanded Polyethylene Sheets , GI Pipes & according to the detailed drawing. "C" channel bracing 300 x 100 x 46 mm , C - channels , Hot rolled sheet pile "U" section (AU20) , Trussed bracing (1000 x 1000 mm) etc …..	m	93.00		-
2.6	**Dewatering**				
1	Allow for dewatering during construction period using suitable system as required. This amount shall cover the removal of surface water collected by rain , under ground water or etc.	Item	1.00		-
2.7	**Damp Proof Membrane**				
	(a) Rates shall include for dressing around and sealing to all penetrations. All works according to the drawing. Note : Bitustick which is cross laminated self adhesive waterproofing membrane or similar waterproofing membrane.				
1	Bottom of Raft Foundation	m²	468.00		-
2.8	**Water Proofing** Rates shall include for dressing around and sealing to all penetrations Apply slurry type waterproofing to all surfaces of concrete below ground level in accordance with specification , drawings and manufacturer's instructions. Note : Masterseal 620 which bitumen rubber latex emulsion based waterproofing materials or similar waterproofing membrane.				
1	Retaining wall - external surface	m²	689.00		-
	Total Of Bill No: 02 - Carried to Bill summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.0	**General**				
	(a)The Bidder is requested to refer the General Notes, Schedules, Drawings, Specifications and other relevant documents.				
	(b) Rates shall include for: placing in position; making good after removal of formwork and casting in all required items; additional concrete required to conform to structural and excavated tolerances.				
	(c) Mix ratio for reinforced concrete shall be 1:2:3 and lean concrete shall be 1:3:6 by volume.				
	(d) Quantity is measured to the edges of concrete foundation members. Rates shall be inclusive for any additional concrete required to place the formwork and excavated tolerances.				
	(e) Rate to include water proofing compound/admixtures to concrete for wet area unless other wise measured separately. separately.				
	(f) All works are according to the drawing and Rate to include all the work items unless other wise measured separately.				
	(g) All works are according to the drawing and technical specification.				
	(h) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
1	Allow for concrete testing works until completion the works.	Item	1.00		-
3.1	**Concrete Works**				
3.1.1	**Blinding Concrete**				
1	75 mm thick lean concrete to bottom	m³	36.00		-
	Reinforced Concrete				
	In-situ reinforced concrete to:				
3.1.2	**Raft Foundation**				
1	Raft Foundation	m³	565.00		-
2	Foundation Beam	m³	133.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.1.3	**Basement Floor To Ground Floor Level**				
1	Lift Wall	m³	30.00		-
2	Column	m³	70.00		-
3	Ground Floor Slab	m³	65.00		-
4	Ground Floor Beam	m³	40.00		-
5	Staircase From Basement To Ground Incl. Base	m³	4.00		-
6	Retaining Wall	m³	226.00		-
3.1.4	**Ground Floor Level to First Floor Level**				
1	Column	m³	39.00		-
2	Stair Case	m³	2.00		-
3	Lift Wall	m³	17.00		-
4	Beam	m³	40.00		-
5	Slab	m³	65.00		-
6	Stair Case Wall	m³	11.00		-
3.1.5	**First Floor Level to Second Floor Level**				
1	Column	m³	27.00		-
2	Beam	m³	40.00		-
3	Slab	m³	65.00		-
4	Stair Case	m³	2.00		-
5	Lift Wall	m³	13.00		-
6	Stair Case Wall	m³	9.00		-
3.1.6	**Second Floor Level to Third Floor Level**				
1	Column	m³	27.00		-
2	Beam	m³	40.00		-
3	Slab	m³	65.00		-
4	Stair Case	m³	2.00		-
5	Lift Wall	m³	13.00		-
6	Stair Case Wall	m³	9.00		-
3.1.7	**Third Floor Level to Fourth Floor Level**				
1	Column	m³	27.00		-
2	Beam	m³	39.00		-
3	Slab	m³	63.00		-
4	Stair Case	m³	2.00		-
5	Lift Wall	m³	13.00		-
6	Stair Case Wall	m³	9.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.1.8	**Fourth Floor Level to Fifth Floor Level**				
1	Column	m³	27.00		-
2	Beam	m³	40.00		-
3	Slab	m³	65.00		-
4	Stair Case	m³	2.00		-
5	Lift Wall	m³	13.00		-
6	Stair Case Wall	m³	9.00		-
3.1.9	**Fifth Floor Level to Sixth Floor Level**				
1	Column	m³	27.00		-
2	Beam	m³	40.00		-
3	Slab	m³	65.00		-
4	Stair Case	m³	2.00		-
5	Lift Wall	m³	13.00		-
6	Stair Case Wall	m³	9.00		-
3.1.10	**Sixth Floor Level to Seventh Floor Level**				
1	Column	m³	27.00		-
2	Beam	m³	39.00		-
3	Slab	m³	63.00		-
4	Stair Case	m³	2.00		-
5	Lift Wall	m³	13.00		-
6	Stair Case Wall	m³	9.00		-
3.1.11	**Seventh Floor Level to Eight Floor Level**				
1	Column	m³	27.00		-
2	Beam	m³	40.00		-
3	Slab	m³	65.00		-
4	Stair Case	m³	2.00		-
5	Lift Wall	m³	13.00		-
6	Stair Case Wall	m³	9.00		-
3.1.12	**Eight Floor Level to Ninth Floor Level**				
1	Column	m³	27.00		-
2	Beam	m³	40.00		-
3	Slab	m³	65.00		-
4	Stair Case	m³	2.00		-
5	Lift Wall	m³	13.00		-
6	Stair Case Wall	m³	9.00		-
3.1.13	**Ninth Floor Level to Terrace Floor Level**				
1	Column	m³	27.00		-
2	Beam	m³	40.00		-
3	Slab	m³	65.00		-
4	Stair Case	m³	2.00		-
5	Lift Wall	m³	13.00		-
6	Stair Case Wall	m³	9.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.1.14	**Terrace Floor Level to Terrace Roof Level**				
1	Column	m³	6.00		-
2	Beam	m³	6.00		-
3	Slab	m³	20.00		-
4	Lift Wall	m³	16.00		-
5	Stair Case Wall	m³	11.00		-
3.1.15	**Terrace Roof Level to Machine Room Roof Level**				
1	Column	m³	2.00		-
2	Beam	m³	1.00		-
3	Slab	m³	8.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.2	**Formwork** (a) Rates shall include for: all necessary boarding, supports, erecting, framing, temporary cambering, cutting, perforations for reinforcing bars, bolts, straps, ties, hangers, pipes and removal of formwork.				
3.2.1	**Strip Foundation/Base**				
1	Raft Foundation	m²	110.00		-
2	Foundation Beam	m²	321.00		-
3.2.2	**Basement Floor To Ground Floor Level**				
1	Lift Wall	m²	285.00		-
2	Column	m²	483.00		-
3	Ground Floor Slab	m²	373.00		-
4	Ground Floor Beam	m²	297.00		-
5	Staircase From Basement To Ground	m²	28.00		-
6	Retaining Wall	m²	1,512.00		-
3.2.3	**Ground Floor Level to First Floor Level**				
1	Column	m²	267.00		-
2	Stair Case	m²	14.00		-
3	Lift Wall	m²	157.00		-
4	Beam	m²	297.00		-
5	Slab	m²	375.00		-
6	Stair Case Wall	m²	116.00		-
3.2.4	**First Floor Level to Second Floor Level**				
1	Column	m²	189.00		-
2	Beam	m²	297.00		-
3	Slab	m²	375.00		-
4	Stair Case	m²	12.00		-
5	Lift Wall	m²	123.00		-
6	Stair Case Wall	m²	85.00		-
3.2.5	**Second Floor Level to Third Floor Level**				
1	Column	m²	189.00		-
2	Beam	m²	297.00		-
3	Slab	m²	375.00		-
4	Stair Case	m²	12.00		-
5	Lift Wall	m²	123.00		-
6	Stair Case Wall	m²	85.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.2.6	**Third Floor Level to Fourth Floor Level**				
1	Column	m²	189.00		-
2	Beam	m²	292.00		-
3	Slab	m²	359.00		-
4	Stair Case	m²	12.00		-
5	Lift Wall	m²	123.00		-
6	Stair Case Wall	m²	85.00		-
3.2.7	**Fourth Floor Level to Fifth Floor Level**				
1	Column	m²	189.00		-
2	Beam	m²	297.00		-
3	Slab	m²	375.00		-
4	Stair Case	m²	12.00		-
5	Lift Wall	m²	123.00		-
6	Stair Case Wall	m²	85.00		-
3.2.8	**Fifth Floor Level to Sixth Floor Level**				
1	Column	m²	189.00		-
2	Beam	m²	297.00		-
3	Slab	m²	375.00		-
4	Stair Case	m²	12.00		-
5	Lift Wall	m²	123.00		-
6	Stair Case Wall	m²	85.00		-
3.2.9	**Sixth Floor Level to Seventh Floor Level**				
1	Column	m²	189.00		-
2	Beam	m²	292.00		-
3	Slab	m²	359.00		-
4	Stair Case	m²	12.00		-
5	Lift Wall	m²	123.00		-
6	Stair Case Wall	m²	85.00		-
3.2.10	**Seventh Floor Level to Eight Floor Level**				
1	Column	m²	189.00		-
2	Beam	m²	297.00		-
3	Slab	m²	375.00		-
4	Stair Case	m²	12.00		-
5	Lift Wall	m²	123.00		-
6	Stair Case Wall	m²	85.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.2.11	**Eight Floor Level to Ninth Floor Level**				
1	Column	m^2	189.00		-
2	Beam	m^2	297.00		-
3	Slab	m^2	375.00		-
4	Stair Case	m^2	12.00		-
5	Lift Wall	m^2	123.00		-
6	Stair Case Wall	m^2	85.00		-
3.1.13	**Ninth Floor Level to Terrace Floor Level**				
1	Column	m^2	189.00		-
2	Beam	m^2	297.00		-
3	Slab	m^2	375.00		-
4	Stair Case	m^2	12.00		-
5	Lift Wall	m^2	123.00		-
6	Stair Case Wall	m^2	85.00		-
3.1.14	**Terrace Floor Level to Terrace Roof Level**				
1	Column	m^2	75.00		-
2	Beam	m^2	71.00		-
3	Slab	m^2	130.00		-
4	Lift Wall	m^2	153.00		-
5	Stair Case Wall	m^2	106.00		-
3.1.15	**Terrace Roof Level to Machine Room Roof Level**				
1	Column	m^2	21.00		-
2	Beam	m^2	19.00		-
3	Slab	m^2	50.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.3	**Reinforcement**				
	(a) Rates shall include for: cleaning, fabrication, placing, the provision for all necessary temporary fixings , supports including tie wire and chair supports, laps , couplers , distribution bars and wastage.				
	(b) All reinforcing bars shall be high strength bars.				
	(c) All in accordance with the drawings and specifications.				
3.3.1	**Raft Foundation**				
1	Raft Foundation	t	33.00		-
2	Foundation Beam	t	50.00		-
3.3.2	**Basement Floor To Ground Floor Level**				
1	Lift Wall	t	8.00		-
2	Column	t	25.00		-
3	Ground Floor Slab	t	8.50		-
4	Ground Floor Beam	t	17.00		-
5	Staircase From Basement To Ground Incl. Base	t	0.75		-
6	Retaining Wall	t	32.00		-
3.3.3	**Ground Floor Level to First Floor Level**				
1	Column	t	14.00		-
2	Stair Case	t	0.25		-
3	Lift Wall	t	4.00		-
4	Beam	t	17.00		-
5	Slab	t	6.50		-
6	Stair Case Wall	t	1.75		-
3.3.4	**First Floor Level to Second Floor Level**				
1	Column	t	10.00		-
2	Stair Case	t	0.25		-
3	Lift Wall	t	3.00		-
4	Beam	t	17.00		-
5	Slab	t	6.50		-
6	Stair Case Wall	t	1.25		-
3.3.5	**Second Floor Level to Third Floor Level**				
1	Column	t	10.00		-
2	Stair Case	t	0.25		-
3	Lift Wall	t	3.00		-
4	Beam	t	16.50		-
5	Slab	t	6.50		-
6	Stair Case Wall	t	1.25		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.3.6	**Third Floor Level to Fourth Floor Level**				
1	Column	t	10.00		-
2	Stair Case	t	0.25		-
3	Lift Wall	t	3.00		-
4	Beam	t	17.00		-
5	Slab	t	6.00		-
6	Stair Case Wall	t	1.25		-
3.3.7	**Fourth Floor Level to Fifth Floor Level**				
1	Column	t	10.00		-
2	Stair Case	t	0.25		-
3	Lift Wall	t	3.00		-
4	Beam	t	17.00		-
5	Slab	t	6.50		-
6	Stair Case Wall	t	1.25		-
3.3.8	**Fifth Floor Level to Sixth Floor Level**				
1	Column	t	10.00		-
2	Stair Case	t	0.25		-
3	Lift Wall	t	3.00		-
4	Beam	t	16.50		-
5	Slab	t	6.50		-
6	Stair Case Wall	t	1.25		-
3.3.9	**Sixth Floor Level to Seventh Floor Level**				
1	Column	t	10.00		-
2	Stair Case	t	0.25		-
3	Lift Wall	t	3.00		-
4	Beam	t	17.00		-
5	Slab	t	6.00		-
6	Stair Case Wall	t	1.25		-
3.3.10	**Seventh Floor Level to Eight Floor Level**				
1	Column	t	10.00		-
2	Stair Case	t	0.25		-
3	Lift Wall	t	3.00		-
4	Beam	t	17.00		-
5	Slab	t	6.50		-
6	Stair Case Wall	t	1.25		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.3.11	**Eight Floor Level to Ninth Floor Level**				
1	Column	t	10.00		-
2	Beam	t	17.00		-
3	Slab	t	6.50		-
4	Stair Case	t	0.25		-
5	Lift Wall	t	3.00		-
6	Stair Case Wall	t	1.25		-
3.3.12	**Ninth Floor Level to Terrace Floor Level**				
1	Column	t	10.00		-
2	Stair Case	t	0.25		-
3	Lift Wall	t	3.00		-
4	Beam	t	17.00		-
5	Slab	t	6.50		-
6	Stair Case Wall	t	1.25		-
3.3.13	**Terrace Floor Level to Terrace Roof Level**				
1	Column	t	2.00		-
2	Beam	t	2.50		-
3	Slab	t	2.00		-
4	Lift Wall	t	3.50		-
5	Stair Case Wall	t	1.75		-
3.3.14	**Terrace Roof Level to Machine Room Roof Level**				
1	Column	t	0.50		-
2	Beam	t	0.50		-
3	Slab	t	0.75		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.4	**Other Concrete Works**				
3.4.1	**Lintel Works**				
	Provide lintel where the door/windows do not touch the concrete surface. Rate to include reinforcement , formwork & concrete completely .				
1A	Basement	Item	1.00		-
1	Ground Floor	Item	1.00		-
2	First Floor	Item	1.00		-
3	Second floor	Item	1.00		-
4	Third floor	Item	1.00		-
5	Fourth floor	Item	1.00		-
6	Fifth floor	Item	1.00		-
7	Sixth floor	Item	1.00		-
8	Seventh floor	Item	1.00		-
9	Eight floor	Item	1.00		-
10	Ninth floor	Item	1.00		-
11	Terrace floor & Machine Room	Item	1.00		-
3.4.2	**Vanity for Toilets & Pantry**				
	Preparation of vanity for toilets & pantry area as shown in the drawing. Rate to include reinforcement , formwork & concrete completely .				
1	Ground Floor	Item	1.00		-
2	First Floor	Item	1.00		-
3	Second floor	Item	1.00		-
4	Third floor	Item	1.00		-
5	Fourth floor	Item	1.00		-
6	Fifth floor	Item	1.00		-
7	Sixth floor	Item	1.00		-
8	Seventh floor	Item	1.00		-
9	Eight floor	Item	1.00		-
10	Ninth floor	Item	1.00		-
11	Terrace floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.4.3	**Ramp At Ground Floor**				
	Allow to make concrete ramp within the site/building premises as shown in the drawing & specification. Rate to include excavation and floor level , lean concrete , water proof membrane , reinforcement , formwork & concrete completely .	Item	1.00		-
	(Car access , main car portico , main pedestrian access)				
3.4.4	**Plinth Beam For Fixing Balustrade**				
	Preparation of plinth beam for fixing balustrade at balcony/terrace area as shown in the drawing. Rate to include reinforcement , formwork & concrete completely etc.				
	100 mm height	m	52.00		-
3.4.5	**Water Tank**				
	Allow for construction of water tank at basement completely.	Item	1.00		-
	Rate to include concreting , steel reinforce , formwork , plastering , waterproofing works etc…				
3.5	**Water Proofing for Wet Surface**				
3.5.1	Application of approved water proofing chemical for all toilet & balcony floor, in accordance with the drawings , specifications and manufacture instructions.				
1	Ground Floor	m^2	6.00		-
2	First Floor	m^2	6.00		-
3	Second floor	m^2	6.00		-
4	Third floor	m^2	6.00		-
5	Fourth floor	m^2	6.00		-
6	Fifth floor	m^2	6.00		-
7	Sixth floor	m^2	6.00		-
8	Seventh floor	m^2	6.00		-
9	Eight floor	m^2	6.00		-
10	Ninth floor	m^2	6.00		-
11	Terrace floor	m^2	6.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 03 **Concrete Works**				
3.5.2	Application of approved water proofing system for all terrace floor, outdoor area, roof top slab in accordance with the drawings , specifications and manufacture instructions.				
1	Third floor	m^2	33.00		-
2	Sixth floor	m^2	63.00		-
3	Terrace floor	m^2	308.00		-
4	Terrace floor top slab	m^2	159.00		-
5	Machine room top slab	m^2	32.00		-
3.6	**Expansion Joint , Construction Joint and Water Stop**				
	Allow for supply and fixing , preparation , filling expansion joints , construction joint and water stop as shown detailed drawing . (Can be claimed If use only)				
1	Expansion joint	Item	1.00		-
2	Construction joint	Item	1.00		-
3	Water stop	Item	1.00		-
	Total Of Bill No: 03 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 04 **Masonry & Plastering Works**				
4.1	**General**				
	(a) The Bidder is requested to refer the General Notes, Schedules, Drawings, Specifications and other relevant documents.				
	(b) Rates shall include for cleaning out cavities, forming rebated reveals and pointing and cleaning down to reveals where necessary fractional size blocks , all necessary machine cutting , filling of gaps , cutting or forming chases or edges of floor slabs, cutting or leaving holes and openings as recesses for and building in pipes, conduits, sleeves and similar as required for all trades; leaving surfaces rough or raking out joints for plastering and flashings, bedding , temporary supports to openings and for all necessary making good.				
	(c) Suitable filling material shall be used in all joints of concrete and masonry as a bonding agent according to the drawing.				
	(d) Rate shall include water proofing chemicals/admixtures unless other wise measured separately.				
	(e) All in accordance with the drawing and specification & The rates shall cover all the works completely unless other wise measured separately.				
	(f) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 04 **Masonry & Plastering Works**				
4.2	**Cement Block Work**				
	External Wall				
4.2.1	150 mm thick vertical Solid Block wall in 1:5 cement sand mortar .				
1A	Basement	m²	-		-
1	Ground Floor	m²	231.00		-
2	First Floor	m²	-		-
3	Second floor	m²	-		-
4	Third floor	m²	-		-
5	Fourth floor	m²	-		-
6	Fifth floor	m²	-		-
7	Sixth floor	m²	-		-
8	Seventh floor	m²	-		-
9	Eight floor	m²	-		-
10	Ninth floor	m²	-		-
11	Terrace floor	m²	197.00		-
12	Machine room floor	m²	88.00		-
	Internal Wall				
4.2.2	150 mm thick vertical Solid Block wall in 1:5 cement sand mortar .				
1A	Basement	m²	59.00		-
1	Ground Floor	m²	78.00		-
2	First Floor	m²	35.00		-
3	Second floor	m²	35.00		-
4	Third floor	m²	45.00		-
5	Fourth floor	m²	45.00		-
6	Fifth floor	m²	45.00		-
7	Sixth floor	m²	45.00		-
8	Seventh floor	m²	45.00		-
9	Eight floor	m²	45.00		-
10	Ninth floor	m²	45.00		-
11	Terrace floor	m²	45.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 04 **Masonry & Plastering Works**				
4.3	**Plastering**				
	(a) Cement plastering on walls and concrete surfaces as specified incl. wire mesh at the joints of concrete surfaces and walls. Rates shall include for cutting all decorative grooves as shown in the drawing .				
	(b) Rates for plastering shall includes for forming doors and windows revels.				
	(c) Rates for plastering shall include for providing chamfered edges straight and neat edges.				
	(d) Rate shall include water proofing admixtures/chemicals for external plastering.				
	(e) Rate to include steel mesh, fiber mesh where necessary & all works are according to the drawing.				
	(f) Rate to include Boss PU25 or Similar Anti Fungus Silicon Fill .				
	External Walls				
4.3.1	20 mm thk. External plastering (10 mm thk. 1 layer & 10 mm thk. 2 layer , on block/ concrete surface with 1:5 cement sand mortar finish with semi rough.				
1A	Basement (Will be done as required only)	m²	-		-
1	Ground Floor	m²	275.00		-
2	First Floor	m²	-		-
3	Second floor	m²	-		-
4	Third floor	m²	-		-
5	Fourth floor	m²	-		-
6	Fifth floor	m²	-		-
7	Sixth floor	m²	-		-
8	Seventh floor	m²	-		-
9	Eight floor	m²	-		-
10	Ninth floor	m²	-		-
11	Terrace floor	m²	207.00		-
12	Machine room floor	m²	88.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 04 **Masonry & Plastering Works**				
	External Walls - Colmns & Beam				
4.3.1A	20 mm thk. External plastering (10 mm thk. 1 layer & 10 mm thk. 2 layer , on block/ concrete surface with 1:5 cement sand mortar finish with semi rough.				
1	First Floor	Item	1.00		-
2	Second floor	Item	1.00		-
3	Third floor	Item	1.00		-
4	Fourth floor	Item	1.00		-
5	Fifth floor	Item	1.00		-
6	Sixth floor	Item	1.00		-
7	Seventh floor	Item	1.00		-
8	Eight floor	Item	1.00		-
9	Ninth floor	Item	1.00		-
	Internal Walls				
4.3.2	13 mm thk. Internal plastering on block/concrete surface with 1:5 cement sand mortar finish with smooth. (Except partition walls)				
1A	Basement	m²	117.00		-
1	Ground Floor	m²	155.00		-
2	First Floor	m²	70.00		-
3	Second floor	m²	70.00		-
4	Third floor	m²	90.00		-
5	Fourth floor	m²	90.00		-
6	Fifth floor	m²	90.00		-
7	Sixth floor	m²	90.00		-
8	Seventh floor	m²	90.00		-
9	Eight floor	m²	90.00		-
10	Ninth floor	m²	90.00		-
11	Terrace floor	m²	287.00		-
12	Machine room floor	m²	88.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 04 **Masonry & Plastering Works**				
4.4	**Cement Screed/Flooring**				
	For General Floor				
4.4.1	Cement sand mortar screed 1:3 with rough finish for tilling works.				
1A	Basement - Power Trowel	m^2	376.00		-
1	Ground Floor	m^2	177.00		-
2	Ground Floor - Power Trowel	m^2	123.00		-
3	First Floor	m^2	82.00		-
4	First Floor - Power Trowel	m^2	312.00		-
5	Second floor	m^2	395.00		-
6	Third floor	m^2	360.00		-
7	Fourth floor	m^2	360.00		-
8	Fifth floor	m^2	396.00		-
9	Sixth floor	m^2	329.00		-
10	Seventh floor	m^2	329.00		-
11	Eight floor	m^2	392.00		-
12	Ninth floor	m^2	385.00		-
13	Terrace floor	m^2	89.00		-
	For Staircase				
4.4.2	Cement sand mortar screed 1:3 with rough finish for tilling works.				
1A	Basement	m^2	35.00		-
1	Ground Floor	m^2	25.00		-
2	First Floor	m^2	15.00		-
3	Second floor	m^2	15.00		-
4	Third floor	m^2	15.00		-
5	Fourth floor	m^2	15.00		-
6	Fifth floor	m^2	15.00		-
7	Sixth floor	m^2	15.00		-
8	Seventh floor	m^2	15.00		-
9	Eight floor	m^2	15.00		-
10	Ninth floor	m^2	15.00		-
11	Terrace floor	m^2	-		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 04 **Masonry & Plastering Works**				
	For Toilets/Bathroom				
4.4.3	Cement sand mortar screed 1:3 with rough finish for tilling works.				
1A	Basement	m²	-		-
1	Ground Floor	m²	6.00		-
2	First Floor	m²	6.00		-
3	Second floor	m²	6.00		-
4	Third floor	m²	6.00		-
5	Fourth floor	m²	6.00		-
6	Fifth floor	m²	6.00		-
7	Sixth floor	m²	6.00		-
8	Seventh floor	m²	6.00		-
9	Eight floor	m²	6.00		-
10	Ninth floor	m²	6.00		-
11	Terrace floor	m²	6.00		-
	For Terrace & Roof Top Slab				
4.4.4	Cement sand mortar screed 1:3 with rough finish for tilling works.				
1	Third floor	m²	33.00		-
2	Sixth floor	m²	63.00		-
3	Terrace floor	m²	308.00		-
4	Terrace floor top slab	m²	159.00		-
5	Machine room top slab	m²	32.00		-
4.5	**Damp Proof Course Preparation**				
	Preparation of Bituminous Felt DPC as shown in the detailed drawing completely.	Item	1.00		-
	Total Of Bill No: 04 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 05 **Metal Works**				
5.1	**General**				
	(a) The Bidder is requested to refer the General Notes, Schedules, Drawings, Specifications and other relevant documents.				
	(b) Rates shall include for: all fabrication work, welding, marking, drilling, for bolts including those securing timbers, steel plates, bolts, nuts and any type of washer, riveted work, counter sinking and tapping for bolts or machine screws.				
	(c) Rates shall include for all painting and finished as specified.				
	(d)Rates shall include for fabrication and erection and temporary supports and fixing in to position.				
	(e) The contractor shall submit sample of SS and GI sections and all other accessories for approval for the Engineer.				
	(f) All are according to the drawings and specification. The rates shall cover all the works completely unless other wise measured separately.				
	(g) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
5.2	**Main Staircase Railing**				
	Supply & fixing staircase handrail as shown in drawing , specification & manufacture's details completely.				
	Rate to include anchor bolt , 36 mm dia. CHS balustrade primed & matte white paint finish , 50 mm dia. CHS handrail primed and matte white paint finish , 86 mm dia. X 2 mm plate welded to bottom of baluster etc…				
1A	Basement	m	17.00		-
1	Ground Floor	m	6.00		-
2	First Floor	m	5.00		-
3	Second floor	m	5.00		-
4	Third floor	m	5.00		-
5	Fourth floor	m	5.00		-
6	Fifth floor	m	5.00		-
7	Sixth floor	m	5.00		-
8	Seventh floor	m	5.00		-
9	Eight floor	m	5.00		-
10	Ninth floor	m	8.00		-
11	Terrace floor	m	-		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 05 **Metal Works**				
5.3	**Terrace & Balcony Balustrade/ Glass Railing**				
	Supply & fixing handrail for balcony/terrace 1100 mm height , 12 mm thick tempered glass , CAP rail 42 mm dia. , anchor bolt and base mount glazing chanesl completely as shown in the detail drawings & manufacture's specifications.				
1A	Basement	m	-		-
1	Ground Floor	m	-		-
2	First Floor	m	-		-
3	Second floor	m	-		-
4	Third floor	m	8.00		-
5	Fourth floor	m	-		-
6	Fifth floor	m	-		-
7	Sixth floor	m	15.00		-
8	Seventh floor	m	-		-
9	Eight floor	m	-		-
10	Ninth floor	m	-		-
11	Terrace floor	m	52.00		-
5.4	**External Ladder**				
	Supply & fixing external ladder located at terrace floor to machine , detail as shown in the drawing and specification.				
1	From terrace floor level to terrace roof level	nr	1.00		-
2	From terrace roof level to machine room	nr	1.00		-
5.5	**Ladder & Glass Railing For Pool Area**				
	Allow for supply and fixing ladder and glass railing for terrace pool area according to the detailed drawings and manufacturs details completely.	Item	1.00		-
	Total Of Bill No: 05 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 06 **Ceiling and Other Timber Works**				
6.1	**General**				
	(a) Rates shall include for: screws, nails, bolts, nuts, standard cable fixing or supporting clips, brackets, straps, rivets, plugs and all incidental accessories.				
	(b) The rates shall cover all the works completely according to the drawing unless otherwise measured separately.				
	(c) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
	(d) Please see finishing schedule "note" for more details.				
	(e) Painting works will be measured under Bill : 08 - Painting Works.				
	(f) Rate to include ceiling frame , fittings and accessories all related works unless otherwise not measured separately.				
6.2	**Acoustic Ceiling Panels**				
	Acoustic ceiling panels (Sound absorption rating of 0.70-1.00 NRC, Fire class 0 rating)				
1A	Basement	m^2	-		-
1	Ground Floor	m^2	48.00		-
2	First Floor	m^2	67.00		-
3	Second floor	m^2	384.00		-
4	Third floor	m^2	341.00		-
5	Fourth floor	m^2	341.00		-
6	Fifth floor	m^2	377.00		-
7	Sixth floor	m^2	310.00		-
8	Seventh floor	m^2	310.00		-
9	Eight floor	m^2	374.00		-
10	Ninth floor	m^2	374.00		-
11	Terrace floor	m^2	70.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 06 **Ceiling and Other Timber Works**				
6.3	**Suspended Ceiling** Suspended 8mm Plaster board ceiling with one coat pimer and two coats of interior grade emulsion paint finish				
1A	Basement	m²	-		-
1	Ground Floor	m²	206.00		-
2	First Floor	m²	342.00		-
3	Second floor	m²	24.00		-
4	Third floor	m²	24.00		-
5	Fourth floor	m²	24.00		-
6	Fifth floor	m²	24.00		-
7	Sixth floor	m²	24.00		-
8	Seventh floor	m²	24.00		-
9	Eight floor	m²	24.00		-
10	Ninth floor	m²	24.00		-
11	Terrace floor	m²	24.00		-
	Total Of Bill No: 06 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 07 **Door , Window & Glazing Works**				
7.1	**General**				
	(a) The Bidder is requested to refer the General Notes, Schedules, Drawings, Specifications and other relevant documents.				
	(b) Rates shall include for locks, latches, closers, push plates, pull handles, bolts, kick plates, hinges and all door & window hardware with other accessories. Material should be with superior quality.				
	(c) Rates shall include for door frames and window frames, mullions, transoms, trims, glass, tinting, timber panels, boardings, framing, lining, fastenings and all fixings and installation.				
	(d) All louvers, windows and sliding doors shall be as specified in the drawing & schedules..				
	(e) Rates shall include for all painting/coating as specified.				
	(f) The contractor shall submit sample for aluminum frames, timber door & window hardware , tempered heat reflective glass , shutter sample , sealants for door and windows , accessories and other similar for approval of the Engineer.				
	(g) All are according to drawings and specifications. All Doors shall be solid timber panel doors.				
	(h) All aluminum window shall be clear glass with tinted/reflective.				
	(i) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
	(j) The contractor shall refer schedules of door and window for more details to pricing.				

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 07 **Door , Window & Glazing Works**				
7.2	**Door & Window Units**				
7.2.1A	**Basement Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	-		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	1.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	-		-
4	D04 - 1710 x 2100 mm Electro galvanized metal frame, thickness to manufacture details	nr	-		-
5	D05 - 3116 x 2100 mm Electro galvanized metal frame, thickness 45 mm thick , high pressure laminate	nr	-		-
7.2.1	**Ground Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	-		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	11.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	-		-
4	D04 - 1710 x 2100 mm Electro galvanized metal frame, thickness to manufacture details	nr	2.00		-
5	D05 - 3116 x 2100 mm Electro galvanized metal frame, thickness 45 mm thick , high pressure laminate	nr	2.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 07 **Door , Window & Glazing Works**				
7.2.2	**First Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	1.00		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	8.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	-		-
7.2.3	**Second Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	1.00		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	8.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	-		-
7.2.4	**Third Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	1.00		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	8.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	3.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 07 **Door , Window & Glazing Works**				
7.2.5	**Fourth Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	1.00		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	8.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	2.00		-
7.2.6	**Fifth Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	1.00		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	8.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	2.00		-
7.2.7	**Sixth Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	2.00		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	8.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	2.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 07 **Door , Window & Glazing Works**				
7.2.8	**Seventh Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	2.00		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	8.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	1.00		-
7.2.9	**Eight Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	3.00		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	10.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	2.00		-
7.2.10	**Ninth Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	2.00		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	8.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	7.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 07 **Door , Window & Glazing Works**				
7.2.11	**Terrace Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	1.00		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	9.00		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	-		-
7.2.12	**Machine Room Floor**				
1	D01 - 1200 x 2100 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door	nr	-		-
2	D02 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick solid core high pressure laminate white door , anti bacterial finish PVC protection plate on inner face	nr	-		-
3	D03 - 925 x 2055 mm Electro galvanized metal frame 45 mm thick double glazed panel solid core door	nr	1.00		-
7.3	**Fixed Glass Window** Supply & fixing , fixed glass window as shown in drawing , technical specification & manufacture's details completely.				
1	Ground floor	m^2	44.00		-
2	Third floor	m^2	40.00		-
3	Fourth floor	m^2	40.00		-
4	Sixth floor	m^2	38.00		-
5	Seventh floor	m^2	38.00		-
6	Terrace floor	m^2	26.00		-
	Total Of Bill No: 07 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 08 **Painting Works**				
8.1	**General**				
	Painting Works (a) Rates shall include for the provision , erection and removal of scaffolding, preparation, rubbing down between coats and similar work, the protection and/or masking floors, fittings and similar work, removing and replacing door and window furniture.				
	(b) All painting work shall be carried in accordance with the Specifications				
	(c) Colour to be approved by the Architect & the Engineer.				
	(d) The brand of paint shall be with approved manufacture.				
	(e) The rates shall cover all the works completely according to the drawing unless otherwise measured separately.				
	(f) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
	(g) Please see finishing schedule for more details.				
8.2	**Walls**				
8.2.1	**Internal Walls**				
	Emulsion paint by approved manufacture finishing with wall putty , one coat of primer , two paint coat interior grade on internal wall , columns , beam. Rate to include walls smoothing works etc.				
1A	Basement	m^2	117.00		-
1	Ground Floor	m^2	155.00		-
2	First Floor	m^2	70.00		-
3	Second floor	m^2	70.00		-
4	Third floor	m^2	90.00		-
5	Fourth floor	m^2	90.00		-
6	Fifth floor	m^2	90.00		-
7	Sixth floor	m^2	90.00		-
8	Seventh floor	m^2	90.00		-
9	Eight floor	m^2	90.00		-
10	Ninth floor	m^2	90.00		-
11	Terrace floor	m^2	287.00		-
12	Machine room	m^2	88.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 08 **Painting Works**				
8.2.2	**Partition Wall Painting**				
	Emulsion paint by approved manufacture finishing with wall putty , one coat of primer , two paint coat interior grade on internal partition surface.				
1A	Basement	m²	-		-
1	Ground Floor	m²	296.00		-
2	First Floor	m²	152.00		-
3	Second floor	m²	152.00		-
4	Third floor	m²	360.00		-
5	Fourth floor	m²	364.00		-
6	Fifth floor	m²	316.00		-
7	Sixth floor	m²	328.00		-
8	Seventh floor	m²	332.00		-
9	Eight floor	m²	440.00		-
10	Ninth floor	m²	530.00		-
11	Terrace floor	m²	76.00		-
8.2.3	**Lift Wall - Inner Surface**				
	Exposed wall surface with one coat primer and one coat of emulsion paint finish as described in the finishing details. Rate to include smoothness by proper way.	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 08 **Painting Works**				
8.2.4	**External Wall Painting**				
	Emulsion paint by approved manufacture finishing with one coat of primer , two paint coat exterior grade on all external surface finish with texture.				
	Rate shall include water proofing admixtures / weather proof for external painting.				
	Note : This item is not considered due to outer glass wall system.				
1A	Basement	m²	-		-
1	Ground Floor	m²	-		-
2	First Floor	m²	-		-
3	Second floor	m²	-		-
4	Third floor	m²	-		-
5	Fourth floor	m²	-		-
6	Fifth floor	m²	-		-
7	Sixth floor	m²	-		-
8	Seventh floor	m²	-		-
9	Eight floor	m²	-		-
10	Ninth floor	m²	-		-
11	Terrace floor	m²	-		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 08 **Painting Works**				
8.3	**Soffit Painting**				
	Exposed slab with one coat primer and two coats weather sealing paint finish to soffit				
	Note : This item will not apply due to acoustic ceiling.				
1A	Basement	m^2	376.00		-
1	Ground Floor	m^2	-		-
2	First Floor	m^2	-		-
3	Second floor	m^2	-		-
4	Third floor	m^2	-		-
5	Fourth floor	m^2	-		-
6	Fifth floor	m^2	-		-
7	Sixth floor	m^2	-		-
8	Seventh floor	m^2	-		-
9	Eight floor	m^2	-		-
10	Ninth floor	m^2	-		-
11	Terrace floor	m^2	-		-
12	Machine room floor	m^2	32.00		-
8.4	**Ceiling Painting**				
	Suspended ceiling painting by one coat primer and two coats of interior grade emulsion paint.				
1A	Basement	m^2	-		-
1	Ground Floor	m^2	206.00		-
2	First Floor	m^2	342.00		-
3	Second floor	m^2	24.00		-
4	Third floor	m^2	24.00		-
5	Fourth floor	m^2	24.00		-
6	Fifth floor	m^2	24.00		-
7	Sixth floor	m^2	24.00		-
8	Seventh floor	m^2	24.00		-
9	Eight floor	m^2	24.00		-
10	Ninth floor	m^2	24.00		-
11	Terrace floor	m^2	24.00		-
	Total Of Bill No: 08 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 09 **Tiling Works**				
9.1	**General**				
	Floor Finishing & Wall Finishing				
	(a) Rates shall include for fixing , paving , grouting , pointing , finishing and any other similar works to ensure the required finish. Tile bed has measured separately under Masonry Works.				
	(b) All tiles shall be approved quality/brand or similar as given in the technical specifications and finishing schedule.				
	(c) The contractor shall submit samples of all finishing materials for approval of the Engineer / the Architect.				
	(d) All tiles shall be fixed using a proper adhesive/bonding material.				
	(e) The rates shall cover all the works completely according to the drawing unless otherwise measured separately.				
	(f) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
	(g) Please see finishing schedule for more details.				
9.2	**Floor Finishing Works**				
9.2.1	**Seamless PU, non-slip floor finish for staircase floor and necessary other area according to the finishing schedule.**				
1A	Basement	m^2	35.00		-
1	Ground Floor	m^2	74.00		-
2	First Floor	m^2	15.00		-
3	Second floor	m^2	15.00		-
4	Third floor	m^2	15.00		-
5	Fourth floor	m^2	15.00		-
6	Fifth floor	m^2	15.00		-
7	Sixth floor	m^2	15.00		-
8	Seventh floor	m^2	15.00		-
9	Eight floor	m^2	15.00		-
10	Ninth floor	m^2	15.00		-
11	Terrace floor	m^2	-		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 09 **Tiling Works**				
9.2.2	**900x600x100 Paving Stone**				
1A	Basement	m²	376.00		-
1	Ground Floor	m²	139.00		-
2	First Floor	m²	316.00		-
3	Second floor	m²	-		-
4	Third floor	m²	-		-
5	Fourth floor	m²	-		-
6	Fifth floor	m²	-		-
7	Sixth floor	m²	-		-
8	Seventh floor	m²	-		-
9	Eight floor	m²	-		-
10	Ninth floor	m²	-		-
11	Terrace floor	m²	-		-
9.2.3	**900x900x12 homogeneous tile**				
1A	Basement	m²	-		-
1	Ground Floor	m²	126.00		-
2	First Floor	m²	48.00		-
3	Second floor	m²	48.00		-
4	Third floor	m²	48.00		-
5	Fourth floor	m²	48.00		-
6	Fifth floor	m²	48.00		-
7	Sixth floor	m²	48.00		-
8	Seventh floor	m²	48.00		-
9	Eight floor	m²	48.00		-
10	Ninth floor	m²	48.00		-
11	Terrace floor	m²	48.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 09 **Tiling Works**				
9.2.4	**600x600x8 homogeneous tile non slip for toilet and outdoor floor**				
1A	Basement	m^2	-		-
1	Ground Floor	m^2	7.00		-
2	First Floor	m^2	26.00		-
3	Second floor	m^2	26.00		-
4	Third floor	m^2	59.00		-
5	Fourth floor	m^2	26.00		-
6	Fifth floor	m^2	26.00		-
7	Sixth floor	m^2	88.00		-
8	Seventh floor	m^2	26.00		-
9	Eight floor	m^2	26.00		-
10	Ninth floor	m^2	26.00		-
11	Terrace floor	m^2	309.00		-
12	Terrace floor - roof top	m^2	159.00		-
13	Machine room - roof top	m^2	32.00		-
9.2.5	**Vinyl tiles**				
1A	Basement	m^2	-		-
1	Ground Floor	m^2	-		-
2	First Floor	m^2	-		-
3	Second floor	m^2	316.00		-
4	Third floor	m^2	277.00		-
5	Fourth floor	m^2	316.00		-
6	Fifth floor	m^2	316.00		-
7	Sixth floor	m^2	253.00		-
8	Seventh floor	m^2	253.00		-
9	Eight floor	m^2	316.00		-
10	Ninth floor	m^2	316.00		-
11	Terrace floor	m^2	33.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 09 **Tiling Works**				
9.3	**Wall Finishing Works**				
9.3.1	**600x300x8 ceramic tile**				
1A	Basement	m²	-		-
1	Ground Floor	m²	211.00		-
2	First Floor	m²	161.00		-
3	Second floor	m²	161.00		-
4	Third floor	m²	161.00		-
5	Fourth floor	m²	161.00		-
6	Fifth floor	m²	161.00		-
7	Sixth floor	m²	161.00		-
8	Seventh floor	m²	161.00		-
9	Eight floor	m²	161.00		-
10	Ninth floor	m²	161.00		-
11	Terrace floor	m²	161.00		-
9.3.2	**600x600x8 ceramic tile**				
1A	Basement	m²	-		-
1	Ground Floor	m²	59.00		-
2	First Floor	m²	44.00		-
3	Second floor	m²	44.00		-
4	Third floor	m²	44.00		-
5	Fourth floor	m²	44.00		-
6	Fifth floor	m²	44.00		-
7	Sixth floor	m²	44.00		-
8	Seventh floor	m²	44.00		-
9	Eight floor	m²	44.00		-
10	Ninth floor	m²	44.00		-
11	Terrace floor	m²	44.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 09 **Tiling Works**				
9.4	**Tile Skirting**				
9.4.1	**100 mm height tile skirting by 900 x 900 x 12 mm homogenous tile material.**				
A	Basement floor	Item	-		-
1	Ground Floor	Item	1.00		-
2	First Floor	Item	1.00		-
3	Second floor	Item	1.00		-
4	Third floor	Item	1.00		-
5	Fourth floor	Item	1.00		-
6	Fifth floor	Item	1.00		-
7	Sixth floor	Item	1.00		-
8	Seventh floor	Item	1.00		-
9	Eight floor	Item	1.00		-
10	Ninth floor	Item	1.00		-
11	Terrace floor	Item	1.00		-
9.4.2	**100 mm height tile skirting by 600 x 600 x 8 mm homogenous tile material.**				
A	Basement floor	Item	-		-
1	Ground Floor	Item	1.00		-
2	First Floor	Item	1.00		-
3	Second floor	Item	1.00		-
4	Third floor	Item	1.00		-
5	Fourth floor	Item	1.00		-
6	Fifth floor	Item	1.00		-
7	Sixth floor	Item	1.00		-
8	Seventh floor	Item	1.00		-
9	Eight floor	Item	1.00		-
10	Ninth floor	Item	1.00		-
11	Terrace floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 09 **Tiling Works**				
9.5	**Vanity for Toilets & Pantry**				
	Finishing works for vanity at toilets & panty , according to the drawing. Rate to including all the finishing works completely.				
	Rate to consider related tiling works , masonry works and etc…..				
1	Ground Floor	Item	1.00		-
2	First Floor	Item	1.00		-
3	Second floor	Item	1.00		-
4	Third floor	Item	1.00		-
5	Fourth floor	Item	1.00		-
6	Fifth floor	Item	1.00		-
7	Sixth floor	Item	1.00		-
8	Seventh floor	Item	1.00		-
9	Eight floor	Item	1.00		-
10	Ninth floor	Item	1.00		-
11	Terrace floor	Item	1.00		-
9.6	**Tiling works for Pool**				
	Allow for supply and fixing tile according to the schedule and requested by the employer completely.	Item	1.00		-
	Total Of Bill No: 09 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 09.A **Stud Frame Partition Wall / Internal Partition Wall**				
9.1	**General**				
	(a) The Bidder is requested to refer the General Notes, Schedules, Drawings, Specifications and other relevant documents.				
	(b) The contractor shall submit samples of all finishing materials for approval of the Engineer / the Architect.				
	(c) The rates shall cover all the works completely according to the drawing unless otherwise measured separately.				
	(d) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
	(e) Please see finishing schedule/detailed drawings for more details.				
9.2	**Dry Wall Partition**				
	Supply and fix/placing prostud frame dry wall partition according to the detailed drawings, manufacture's specification.				
	Rate to include 125 x 33 mm prostud steel stud framing , 38 x 12.7 mm U-channel bridging strut , 125 mm thick R13 unfaced insulation insert , 16 mm thick M-board adhesive fixed to stud framing etc…				
1A	Basement	m^2	-		-
1	Ground Floor	m^2	148.00		-
2	First Floor	m^2	76.00		-
3	Second floor	m^2	76.00		-
4	Third floor	m^2	180.00		-
5	Fourth floor	m^2	182.00		-
6	Fifth floor	m^2	158.00		-
7	Sixth floor	m^2	164.00		-
8	Seventh floor	m^2	166.00		-
9	Eight floor	m^2	220.00		-
10	Ninth floor	m^2	265.00		-
11	Terrace floor	m^2	38.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 09.A **Stud Frame Partition Wall / Internal Partition Wall**				
9.3	**9th Floor - Cubical Partition** Allow supply and fixing/placing/install partition wall or dividing cubical at ninth floor labeled as " three separate executive office " shown the drawing , manufacture's specification completely. Note : This will change according to the employer's decision. Drg No : 306-11-114R00	Item	1.00		-
9.4	**8th Floor - Cubical Partition** Allow supply and fixing/placing/install full height sliding partition door at eight floor, shown the drawing between boardroom and boardroom lobby , manufacture's specification completely.	Item	1.00		-
	Total Of Bill No: 09.A - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 10 **Electrical Installation**				
10.1	**General**				
	(a) The Bidder is requested to refer the General Notes, Schedules, Drawings, Specifications and other relevant documents.				
	(b) All materials, equipment, wiring and workmanship shall good quality as required by STELCO.				
	(c) Rates shall include for electrical conduits , Cable , PVC sun box , fittings, equipment and similar all fixings to various building surfaces.				
	(d) Rates shall include for screws , nails , bolts, nuts , standard cable fixing or supporting clips, brackets, straps, rivets, plugs and all incidental accessories.				
	(e) Rates for work in trench shall include for excavation, maintaining faces of excavations, backfilling, compaction, appropriate cable covers, warning tape and disposal of surplus soil from site.				
	(f) Rates shall include all costs associated with provision of all holes , openings , chases in block walls , duct and other builders work completely.				
	(g) Electrical fittings shall in approved manufactures & it will be measured under separately.				
	(h) A point wiring for power point is measured as one point including all for each socket outlets and wiring for light & fan is measured as one point including all. All the fitting will be measured separately.				
	(i) Rates shall include for supply and complete installation				
	(j) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
10.2	**Main Connection**				
	Supply STELCO main connection as required completely. Rate to include main cable/feeder cable and laying cost from transformer to main panel board completely.	Item	1.00		-
10.3	**Main Panel Board/Main Switch Board**				
	Supply and installation of Main Panel Board completely including all electrical meters , the accessories as shown in detailed electrical drawings and technical specifications. Rate to include proper earthing system , connections , STELCO requirement , wiring , switch and other fittings etc. Rate to include necessary builder's work completely.	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 10 **Electrical Installation**				
10.4a	**Sub Main Distribution Board**				
	Supply and fixing/install sub main distribution board for each floor completely.	Item	1.00		-
10.4	**Distribution Board**				
	Supply and installation Distribution Board for power distribution with cable from Main Panel Board to require location with other required fittings completely as shown in the drawings and technical data. Rate to include cable , conduit and all the builders work completely.	Item	1.00		-
10.5	**Testing and Commissioning Works**				
1	Allow for whole electrical works testing and certify/commissioning.	Item	1.00		-
10.6	**Electrical Wiring**				
	Electrical wiring with copper conductor cable in conduits through walls , casing on soffits of slab or through soffit , through ceiling as specified. Rates shall include related fittings and accessories completely.				
1	Wiring with 1.5 mm^2 cable to lighting	Item	1.00		-
2	Wiring with 2.5 mm^2 cable to power points	Item	1.00		-
10.6A	**Cable for Telephone Outlet , Computer Network Outlets , TV Points.**				
1	Allow for laying cable for telephone outlet , computer network outlet , TV point from basement to terrace floor.	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 10 **Electrical Installation**				
10.7	**Light Fittings**				
	Supply and fixing light fittings completely with approved All are accordance to the drawings and specification.				
10.7.1	Basement Floor	Item	1.00		-
10.7.2	Ground Floor	Item	1.00		-
10.7.3	First Floor	Item	1.00		-
10.7.4	Second Floor	Item	1.00		-
10.7.5	Third Floor	Item	1.00		-
10.7.6	Fourth Floor	Item	1.00		-
10.7.7	Fifth Floor	Item	1.00		-
10.7.8	Sixth Floor	Item	1.00		-
10.7.9	Seventh Floor	Item	1.00		-
10.7.10	Eight Floor	Item	1.00		-
10.7.11	Ninth Floor	Item	1.00		-
10.7.12	Terrace Floor	Item	1.00		-
10.8	**Socket Outlets**				
	Supply and fixing socket outlets completely with approved manufactures. All socket outlets shall be accordance to the drawings and specification. Rate to include water proof cover for external socket outlets.				
10.8.1	Basement Floor	Item	1.00		-
10.8.2	Ground Floor	Item	1.00		-
10.8.3	First Floor	Item	1.00		-
10.8.4	Second Floor	Item	1.00		-
10.8.5	Third Floor	Item	1.00		-
10.8.6	Fourth Floor	Item	1.00		-
10.8.7	Fifth Floor	Item	1.00		-
10.8.8	Sixth Floor	Item	1.00		-
10.8.9	Seventh Floor	Item	1.00		-
10.8.10	Eight Floor	Item	1.00		-
10.8.11	Ninth Floor	Item	1.00		-
10.8.12	Terrace Floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 10 **Electrical Installation**				
10.9	**Switches**				
	Supply and fixing light switches completely with approved				
	All are accordance to the drawings and specification.				
10.9.1	Basement Floor	Item	1.00		-
10.9.2	Ground Floor	Item	1.00		-
10.9.3	First Floor	Item	1.00		-
10.9.4	Second Floor	Item	1.00		-
10.9.5	Third Floor	Item	1.00		-
10.9.6	Fourth Floor	Item	1.00		-
10.9.7	Fifth Floor	Item	1.00		-
10.9.8	Sixth Floor	Item	1.00		-
10.9.9	Seventh Floor	Item	1.00		-
10.9.10	Eight Floor	Item	1.00		-
10.9.11	Ninth Floor	Item	1.00		-
10.9.12	Terrace Floor	Item	1.00		-
10.10	**Emergency Light**				
	Supply and fixing emergency light with 3HR battery pack completely with approved manufactures.				
	All are accordance to the drawings and specification.				
A	Basement floor	Item	1.00		-
1	Ground Floor	Item	1.00		-
2	First Floor	Item	1.00		-
3	Second floor	Item	1.00		-
4	Third floor	Item	1.00		-
5	Fourth floor	Item	1.00		-
6	Fifth floor	Item	1.00		-
7	Sixth floor	Item	1.00		-
8	Seventh floor	Item	1.00		-
9	Eight floor	Item	1.00		-
10	Ninth floor	Item	1.00		-
11	Terrace floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 10 **Electrical Installation**				
10.11	**Building Lighting Protection System**				
	Supply and fixing/install lighting protection system at terrace floor and link to the ground pit according to the electrical details , layout & specification completely. Rate to include all the builder's work completely.	Item	1.00		-
	Note : Rate to consider mast , copper down conductor , lightning counter , inspection chamber , earth rod and ground pit constriction.				
10.12	**Air Terminal Unit**				
	Supply & fixing/install early emission streamer air terminal unit radius 70m as shown in the drawing completely.	Item	1.00		-
10.13	**CCTV Camera System**				
	Rates shall include supply and fixing all the equipments according to the detailed drawings , specification , manuals including cables , necessary fittings & accessories.				
	Note : Cables shall be CAT6				
10.13.1	Basement floor	Item	1.00		-
10.13.2	Ground Floor	Item	1.00		-
10.13.3	First Floor	Item	1.00		-
10.13.4	Second floor	Item	1.00		-
10.13.5	Third floor	Item	1.00		-
10.13.6	Fourth floor	Item	1.00		-
10.13.7	Fifth floor	Item	1.00		-
10.13.8	Sixth floor	Item	1.00		-
10.13.9	Seventh floor	Item	1.00		-
10.13.10	Eight floor	Item	1.00		-
10.13.11	Ninth floor	Item	1.00		-
10.13.12	Terrace floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 10 **Electrical Installation**				
10.14	**Access Control System**				
	Supply & fixing access control equipment for whole building according to the details and manufactures specification. Rate to include all power cable , data cable , sockets & related other fittings , accessories completely.				
	Note : All external exit door interlock with fire alarm & access control system.				
	Cable reference details :				
	Card reader - 8 conductor # 22 AWG				
	Magnetic lock - 4 conductor # 18 AWG				
	Network to panel - CAT6 cable				
	Exit button - 2 conductor # 18 AWG				
10.14.1	Basement floor	Item	1.00		-
10.14.2	Ground floor	Item	1.00		-
10.14.3	First floor	Item	1.00		-
10.14.4	Second floor	Item	1.00		-
10.14.5	Third floor	Item	1.00		-
10.14.6	Fourth floor	Item	1.00		-
10.14.7	Fifth floor	Item	1.00		-
10.14.8	Sixth floor	Item	1.00		-
10.14.9	Seventh floor	Item	1.00		-
10.14.10	Eight floor	Item	1.00		-
10.14.11	Ninth floor	Item	1.00		-
10.14.12	Terrace floor	Item	1.00		-
10.15	**Internet Connection**				
	Allow to provide internet main connection & provisions for each floor apartments completely.	Item	1.00		-
10.16	**Signage Works**				
	Allow to provide signage as requirement of design for the works including identification signs , directional signs , warning & caution signs , wall mounted information signs , basic identification system elements , placement of signs , sign messaging , sign hardware system and installation etc...	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 10 **Electrical Installation**				
10.17	**Server Room Equipment**				
	Supply & fixing/install server room equipment according to the requirement with cable , fittings , accessories etc.	Item	1.00		-
10.18	**Transformer**				
	Supply & install transformer as requirement of the project/building . Rate to including related builder's works , fittings & accessories etc..	Item	1.00		-
10.19	**Generator**				
	Supply & install generator as requirement of the project/building . Rate to including related builder's works , fittings & accessories etc..	Item	1.00		-
10.20	**Cable Trunking**				
	Supply and fixing/placing cable trunking works with cover through void vertical as shown in the drawing completely.	Item	1.00		-
	Total Of Bill No: 10 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 11 **Hydraulics , Drainage and Sanitary Fixtures**				
11.0	**General**				
	(a) The Bidder is requested to refer the General Notes, Schedules, Drawings, Specifications and other relevant documents.				
	(b) Rates shall include for pipe laying works cutting & waste of pipe etc. & joining pipes , connecting pipes to sanitary fixture and appliances , valves , sockets, running joints, connectors, elbows, junctions, reducers, expansion joints , backnuts and similar , incidental fittings, clips, saddles, brackets, straps, hangers, screws, nails and fixing complete.				
	(c) Rates shall include cutting and forming holes , mortises , chases and casting to block walls.				
	(d) Drainage works shall include excavation , pipe laying & backfilling and disposal of surplus soil from site. Rate to include necessary bends , junctions , reducers , valve & etc.				
	(e) All pipe work shall be uPVC.				
	(f) Rates for the sanitary fittings and applications shall include all the material for proper fixing as shown in the drawings with approved manufactures , assembling , jointing together with fixing component parts and perfect working order on completion and protecting the works.				
	(g) All sanitary fixtures used shall be of superior quality and approved by the Architect / the Engineer on submission of samples.				
	(h) Rates shall include all the works completely unless otherwise measured separately.				
	(i) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
11.1	**Main Connection**				
1	Allow for main connection from MWSC completely. Rate to include statutory authorities charges and other relate cost.	Item	1.00		-
2	Building main sewer line connect to road main line. Rate to include all related charges.	Item	1.00		-
3	Building storm water & waste water line connect to road main drain. Rate to include all related charges.	Item	1.00		-
11.2	**Testing and Certify/Commissioning Works** Allow for whole electrical works testing and certify/commissioning.	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 11 **Hydraulics , Drainage and Sanitary Fixtures**				
11.3	**Pipe work - Fresh water**				
	Allow for supply and installation of pipe work to all floors toilets & kitchen from ground floor including all the necessary pipes , fittings and other accessories as shown in the detailed drawings.				
	Pipe shall be PPR-PN 20.				
1	Basement floor	Item	1.00		-
2	Ground Floor	Item	1.00		-
3	First Floor	Item	1.00		-
4	Second floor	Item	1.00		-
5	Third floor	Item	1.00		-
6	Fourth floor	Item	1.00		-
7	Fifth floor	Item	1.00		-
8	Sixth floor	Item	1.00		-
9	Seventh floor	Item	1.00		-
10	Eight floor	Item	1.00		-
11	Ninth floor	Item	1.00		-
12	Terrace floor	Item	1.00		-
11.4	**Pipe Work - Sewage , Waste Water & Storm Water**				
	Pipe works for Sewage , Waste water & Storm water collection from all floor toilets , kitchens & terrace storm water/rain water disposal , balcony rain water disposal pipe work , plant box drain pipe network to ground floor lifting station/collection chamber. Rate shall include necessary pipes , fittings , accessories & etc.				
1	Basement floor	Item	1.00		-
2	Ground Floor	Item	1.00		-
3	First Floor	Item	1.00		-
4	Second floor	Item	1.00		-
5	Third floor	Item	1.00		-
6	Fourth floor	Item	1.00		-
7	Fifth floor	Item	1.00		-
8	Sixth floor	Item	1.00		-
9	Seventh floor	Item	1.00		-
10	Eight floor	Item	1.00		-
11	Ninth floor	Item	1.00		-
12	Terrace floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 11 **Hydraulics , Drainage and Sanitary Fixtures**				
11.4.1	**Vent Pipe System**				
	Supply and laying of building Vent piping network for whole building as shown in the drawings completely. Rate shall include necessary fittings & accessories.	Item			-
11.5	**Sanitary Fixtures & Accessories**				
	Supply and fixing sanitary fixtures according to the given drawing and technical specifications complete including brackets, flush pipes, overflows, plugs , washers , necessary fittings & accessories.				
	All the works according to the drawings and technical specifications.				
11.5.1	Basement Floor	Item	1.00		-
11.5.2	Ground Floor	Item	1.00		-
11.5.3	First Floor	Item	1.00		-
11.5.4	Second floor	Item	1.00		-
11.5.5	Third floor	Item	1.00		-
11.5.6	Fourth floor	Item	1.00		-
11.5.7	Fifth floor	Item	1.00		-
11.5.8	Sixth floor	Item	1.00		-
11.5.9	Seventh floor	Item	1.00		-
11.5.10	Eight floor	Item	1.00		-
11.5.11	Ninth floor	Item	1.00		-
11.5.12	Terace floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 11 **Hydraulics , Drainage and Sanitary Fixtures**				
11.6	**Floor Trap , Floor Drain**				
11.6.1	Supply and fixing floor trap according to the drawing. Rate to include fittings and accessories.				
1	Basement floor	Item	1.00		-
2	Ground floor	Item	1.00		-
3	First floor	Item	1.00		-
4	Second floor	Item	1.00		-
5	Third floor	Item	1.00		-
6	Fourth floor	Item	1.00		-
7	Fifth floor	Item	1.00		-
8	Sixth floor	Item	1.00		-
9	Seventh floor	Item	1.00		-
10	Eight floor	Item	1.00		-
11	Ninth floor	Item	1.00		-
12	Terrace floor	Item	1.00		-
11.6.2	Supply and fixing floor gully according to the drawing. Rate to include fittings and accessories.				
1	Basement floor	Item	1.00		-
2	Ground floor	Item	1.00		-
3	First floor	Item	1.00		-
4	Second floor	Item	1.00		-
5	Third floor	Item	1.00		-
6	Fourth floor	Item	1.00		-
7	Fifth floor	Item	1.00		-
8	Sixth floor	Item	1.00		-
9	Seventh floor	Item	1.00		-
10	Eight floor	Item	1.00		-
11	Ninth floor	Item	1.00		-
12	Terrace floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 11 **Hydraulics , Drainage and Sanitary Fixtures**				
11.7	**Pump**				
1	Supply and installation/fixing of water booster pump at basement floor completely including pump stand , base etc.	Item	1.00		-
11.8	**Inspection Chamber**				
	(a) Rates shall include for excavation, concrete works , maintaining faces of drain pipe trenches and pits, backfilling, disposal of surplus spoil , bends, junctions, reducers, expansion joints and all joints and other incidental materials.				
	(b) All pipe work shall be uPVC				
1	Inspection Chamber(IC) 750 x 750 mm size, complete as shown in the detailed drawing including all pipe connections and similar.	Item	1.00		-
11.9	**Water Meters**				
1	Supply and fixing of MWSC water meter for each floor completely according to the drawing at ground floor.	Item	1.00		-
	Total Of Bill No: 11 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 12 **Air Conditioning Works**				
12.1	**General**				
	(a) The Bidder is requested to refer the General Notes, Schedules, Drawings, Specifications and other relevant documents.				
	(b) Rates shall include for complete supply, installation, ducting, wiring, pipe work (insulated liquid, gas and drain), electrical and fixings as per the drawings.				
	(c) Rate to include builders works as necessary complete the works.				
	(d) Rate to include indoor & out door A/C unit as shown in the drawing completely.				
	(e) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
	(f) Rate shall include all the works completely unless otherwise measured separately.				
	(g) The contractor shall re measured quantities If differ according to the drawing under Bill 15 & 16.				
12.1.A	**Testing and Certify/Commissioning Works**				
	Allow for whole air condition & ventilation works testing and certify/commissioning.	Item	1.00		-
12.2	**Air Conditioning Unit**				
	Supply and install FCU/Wall Mount unit according to the detailed drawing completely . Rate to include necessary piping works , related builder's works completely and fixing fittings and accessories.				
12.2.1	Basement Floor	Item	1.00		-
12.2.2	Ground Floor	Item	1.00		-
12.2.3	First Floor	Item	1.00		-
12.2.4	Second Floor	Item	1.00		-
12.2.5	Third Floor	Item	1.00		-
12.2.6	Fourth Floor	Item	1.00		-
12.2.7	Fifth Floor	Item	1.00		-
12.2.8	Sixth Floor	Item	1.00		-
12.2.9	Seventh Floor	Item	1.00		-
12.2.10	Eight Floor	Item	1.00		-
12.2.11	Ninth Floor	Item	1.00		-
12.2.12	Terrace Floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 12 **Air Conditioning Works**				
12.2A	**VRV Outdoor Unit**				
	Supply and fixing/placing VRV outdoor unit located at terrace floor as shown detailed drawings, specification and manual etc…	Item	1.00		-
12.2B	**HRV Unit**				
	Supply and fixing/placing HRV unit each floor as shown detailed drawings, specification and manual etc…				
12.2B.1	Basement floor	Item	1.00		-
12.2B.2	Ground Floor	Item	1.00		-
12.2B.3	First Floor	Item	1.00		-
12.2B.4	Second floor	Item	1.00		-
12.2B.5	Third floor	Item	1.00		-
12.2B.6	Fourth floor	Item	1.00		-
12.2B.7	Fifth floor	Item	1.00		-
12.2B.8	Sixth floor	Item	1.00		-
12.2B.9	Seventh floor	Item	1.00		-
12.2B.10	Eight floor	Item	1.00		-
12.2B.11	Ninth floor	Item	1.00		-
12.2B.12	Terrace floor	Item	1.00		-
12.3	**Online Exhaust Fan**				
	Rates shall include for supply , installation, wiring , pipe work, electrical , fittings, connect to light switch and necessary accessories as per the drawings.				
12.3.1	Basement floor	Item	1.00		-
12.3.2	Ground Floor	Item	1.00		-
12.3.3	First Floor	Item	1.00		-
12.3.4	Second floor	Item	1.00		-
12.3.5	Third floor	Item	1.00		-
12.3.6	Fourth floor	Item	1.00		-
12.3.7	Fifth floor	Item	1.00		-
12.3.8	Sixth floor	Item	1.00		-
12.3.9	Seventh floor	Item	1.00		-
12.3.10	Eight floor	Item	1.00		-
12.3.11	Ninth floor	Item	1.00		-
12.3.12	Terrace floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 12 **Air Conditioning Works**				
12.4	**Item Deleted**				
12.5	**Grill - Internal & External (Air Intake & Exhaust)**				
	Supply and fixing grills as shown in the detailed drawing & specification completely.				
12.5.1	Basement floor	Item	1.00		-
12.5.2	Ground Floor	Item	1.00		-
12.5.3	First Floor	Item	1.00		-
12.5.4	Second floor	Item	1.00		-
12.5.5	Third floor	Item	1.00		-
12.5.6	Fourth floor	Item	1.00		-
12.5.7	Fifth floor	Item	1.00		-
12.5.8	Sixth floor	Item	1.00		-
12.5.9	Seventh floor	Item	1.00		-
12.5.10	Eight floor	Item	1.00		-
12.5.11	Ninth floor	Item	1.00		-
12.5.12	Terrace floor	Item	1.00		-
12.6	**Flexible Duct**				
	Supply and laying/fixing flexible duct as shown detailed drawing , specification completely.				
1A	Basement	Item	1.00		-
1	Ground Floor	Item	1.00		-
2	First Floor	Item	1.00		-
3	Second floor	Item	1.00		-
4	Third floor	Item	1.00		-
5	Fourth floor	Item	1.00		-
6	Fifth floor	Item	1.00		-
7	Sixth floor	Item	1.00		-
8	Seventh floor	Item	1.00		-
9	Eight floor	Item	1.00		-
10	Ninth floor	Item	1.00		-
11	Terrace floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No : 12 **Air Conditioning Works**				
12.7	**Aluminum Rigid Duct** Supply and laying/fixing aluminum rigid duct as shown detailed drawing , specification completely.				
12.7.1	Basement	Item	1.00		-
12.7.2	Ground Floor	Item	1.00		-
12.7.3	First Floor	Item	1.00		-
12.7.4	Second floor	Item	1.00		-
12.7.5	Third floor	Item	1.00		-
12.7.6	Fourth floor	Item	1.00		-
12.7.7	Fifth floor	Item	1.00		-
12.7.8	Sixth floor	Item	1.00		-
12.7.9	Seventh floor	Item	1.00		-
12.7.10	Eight floor	Item	1.00		-
12.7.11	Ninth floor	Item	1.00		-
12.7.12	Terrace floor	Item	1.00		-
12.8	**Air Grill - Internal (Supply , Return , Exhaust)** Supply and fixing air grill for internal air handling works as shown detailed drawing , specification completely.				
12.8.1	Basement	Item	1.00		-
12.8.2	Ground Floor	Item	1.00		-
12.8.3	First Floor	Item	1.00		-
12.8.4	Second floor	Item	1.00		-
12.8.5	Third floor	Item	1.00		-
12.8.6	Fourth floor	Item	1.00		-
12.8.7	Fifth floor	Item	1.00		-
12.8.8	Sixth floor	Item	1.00		-
12.8.9	Seventh floor	Item	1.00		-
12.8.10	Eight floor	Item	1.00		-
12.8.11	Ninth floor	Item	1.00		-
12.8.12	Terrace floor	Item	1.00		-
	Total Of Bill No: 12 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 13 **Lift Works**				
13.1	**GENERAL**				
	(a) The Bidder is requested to refer Drawings, Specifications and other relevant documents.				
	(b) Rates shall include for all necessary electrical wiring and accessories required for completion of the lift installation.				
	(c) All items shall be supply and complete installation completely.				
	(d) All the works are according to the drawing and directed by the Engineer.				
	(e) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
13.2	**Supply and Installation of Lift**				
1	Supply and installation of Lift - 01 (Capsule Elevator) according to the given drawing & manufacture's specification.	nr	1.00		-
2	Supply and installation of Lift - 02 (Capsule Elevator) according to the given drawing & manufacture's specification.	nr	1.00		-
3	Supply and installation of Lift - 03 (Fire Elevator) according to the given drawing & manufacture's specification.	nr	1.00		-
	Total Of Bill No: 13 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14 **Fire Fighting & Alarm System**				
14.0	**GENERAL**				
	(a) The Bidder is requested to refer the General Notes, Schedules, Drawings, Specifications and other relevant documents.				
	(b) Shop drawings of the system shall be prepared to the standard of the government's relevant authority and submitted to the Consultant for approval.				
	(c) All are according to the drawing and specification. Rates shall include all the works completely unless otherwise measured separately.				
	(d) Rate to include valves , fittings & all other necessary accessories.				
	(e) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
14.1.A	**Testing and Certify/Commissioning Works**				
	Allow for whole fire alarm & fighting works testing and certify/commissioning.	Item	1.00		-
14.1	**Fire Fighting**				
	Rate to include supply and fixing completely with proper manufactures quality.				
	Note : The contractor shall read general notes with detailed drawings.				
14.1.1	**Basement floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	5		-
2	C02 portable fire extinguisher - 2 Kg	nr	5		-
4	DCP portable fire extinguisher - 6 Kg	nr	1		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-
14.1.2	**Ground Floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	3		-
2	C02 portable fire extinguisher - 2 Kg	nr	4		-
4	DCP portable fire extinguisher - 6 Kg	nr	2		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14 **Fire Fighting & Alarm System**				
14.1.3	**First Floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	2		-
2	C02 portable fire extinguisher - 2 Kg	nr	5		-
4	DCP portable fire extinguisher - 6 Kg	nr	4		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-
14.1.4	**Second floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	2		-
2	C02 portable fire extinguisher - 2 Kg	nr	5		-
4	DCP portable fire extinguisher - 6 Kg	nr	4		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-
14.1.5	**Third floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	4		-
2	C02 portable fire extinguisher - 2 Kg	nr	5		-
4	DCP portable fire extinguisher - 6 Kg	nr	2		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-
14.1.6	**Fourth floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	4		-
2	C02 portable fire extinguisher - 2 Kg	nr	4		-
4	DCP portable fire extinguisher - 6 Kg	nr	1		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-
14.1.7	**Fifth floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	4		-
2	C02 portable fire extinguisher - 2 Kg	nr	4		-
4	DCP portable fire extinguisher - 6 Kg	nr	1		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-
14.1.8	**Sixth floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	4		-
2	C02 portable fire extinguisher - 2 Kg	nr	4		-
4	DCP portable fire extinguisher - 6 Kg	nr	1		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14 **Fire Fighting & Alarm System**				
14.1.9	**Seventh floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	4		-
2	C02 portable fire extinguisher - 2 Kg	nr	4		-
4	DCP portable fire extinguisher - 6 Kg	nr	1		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-
14.1.10	**Eight floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	4		-
2	C02 portable fire extinguisher - 2 Kg	nr	4		-
4	DCP portable fire extinguisher - 6 Kg	nr	1		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-
14.1.11	**Ninth floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	4		-
2	C02 portable fire extinguisher - 2 Kg	nr	4		-
4	DCP portable fire extinguisher - 6 Kg	nr	1		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-
14.1.12	**Terrace floor**				
1	H2O portable fire extinguisher - 9 Ltr	nr	4		-
2	C02 portable fire extinguisher - 2 Kg	nr	4		-
4	DCP portable fire extinguisher - 6 Kg	nr	1		-
5	25 mm dia. 45m long hose reel with cabinet	nr	1		-
14.1.13	**Machine Room**				
1	H2O portable fire extinguisher - 9 Ltr	nr	1		-
2	C02 portable fire extinguisher - 2 Kg	nr	1		-
4	DCP portable fire extinguisher - 6 Kg	nr	0		-
5	25 mm dia. 45m long hose reel with cabinet	nr	0		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14 **Fire Fighting & Alarm System**				
14.2	**Fire Alarm**				
	Rate to include supply and fixing completely with proper manufactures quality. Note : * All fire resistant cables shall be enclosed in pvc conduit. * All the equipment used must be approved by MNDF regulation * All fire alarm works shall be executed in compliance with NFPA 72 prevailing latest international building code. * All external exit door interlock with fire alarm & access control system. * Rate to consider water proof cover.				
14.2.1	**Basement floor**				
1	Addressable type fire alarm control panel	nr			-
2	Addressable firemen two communication and voice alarm panel	nr			-
3	Addressable type fire alarm repeater panel	nr			-
4	Addressable type manual call point	nr	2		-
5	Addressable type smoke detector	nr	7		-
6	Addressable type heat detector	nr			-
7	Addressable type combined sounder with strobe light	m	2		-
8	Addressable type strobe light	m			-
9	Addressable monitor module	m	5		-
10	Addressable control module	m	1		-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	85		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	50		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	2		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14 **Fire Fighting & Alarm System**				
14.2.2	**Ground Floor**				
1	Addressable type fire alarm control panel	nr	1		-
2	Addressable firemen two communication and voice alarm panel	nr	1		-
3	Addressable type fire alarm repeater panel	nr			-
4	Addressable type manual call point	nr	3		-
5	Addressable type smoke detector	nr	10		-
6	Addressable type heat detector	nr	1		-
7	Addressable type combined sounder with strobe light	m	3		-
8	Addressable type strobe light	m	2		-
9	Addressable monitor module	m			-
10	Addressable control module	m	2		-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	110		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	65		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	2		-
14.2.3	**First Floor**				
1	Addressable type fire alarm control panel	nr			-
2	Addressable firemen two communication and voice alarm panel	nr			-
3	Addressable type fire alarm repeater panel	nr			-
4	Addressable type manual call point	nr	2		-
5	Addressable type smoke detector	nr	12		-
6	Addressable type heat detector	nr	1.00		-
7	Addressable type combined sounder with strobe light	m	2		-
8	Addressable type strobe light	m	2		-
9	Addressable monitor module	m			-
10	Addressable control module	m			-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	105		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	83		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	3		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14 **Fire Fighting & Alarm System**				
14.2.4	**Second floor**				
1	Addressable type fire alarm control panel	nr			-
2	Addressable firemen two communication and voice alarm panel	nr			-
3	Addressable type fire alarm repeater panel	nr			-
4	Addressable type manual call point	nr	2		-
5	Addressable type smoke detector	nr	12		-
6	Addressable type heat detector	nr	1.00		-
7	Addressable type combined sounder with strobe light	m	2		-
8	Addressable type strobe light	m	2		-
9	Addressable monitor module	m			-
10	Addressable control module	m			-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	105		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	83		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	3		-
14.2.5	**Third floor**				
1	Addressable type fire alarm control panel	nr			-
2	Addressable firemen two communication and voice alarm panel	nr			-
3	Addressable type fire alarm repeater panel	nr			-
4	Addressable type manual call point	nr	2		-
5	Addressable type smoke detector	nr	12		-
6	Addressable type heat detector	nr	1.00		-
7	Addressable type combined sounder with strobe light	m	2		-
8	Addressable type strobe light	m	2		-
9	Addressable monitor module	m	1		-
10	Addressable control module	m	1		-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	110		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	78		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	3		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14 **Fire Fighting & Alarm System**				
14.2.6	**Fourth floor**				
1	Addressable type fire alarm control panel	nr			-
2	Addressable firemen two communication and voice alarm panel	nr			-
3	Addressable type fire alarm repeater panel	nr			-
4	Addressable type manual call point	nr	2		-
5	Addressable type smoke detector	nr	12		-
6	Addressable type heat detector	nr	1.00		-
7	Addressable type combined sounder with strobe light	m	2		-
8	Addressable type strobe light	m	2		-
9	Addressable monitor module	m	0		-
10	Addressable control module	m	0		-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	110		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	78		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	3		-
14.2.7	**Fifth floor**				
1	Addressable type fire alarm control panel	nr			-
2	Addressable firemen two communication and voice alarm panel	nr			-
3	Addressable type fire alarm repeater panel	nr			-
4	Addressable type manual call point	nr	2		-
5	Addressable type smoke detector	nr	12		-
6	Addressable type heat detector	nr	1.00		-
7	Addressable type combined sounder with strobe light	m	2		-
8	Addressable type strobe light	m	2		-
9	Addressable monitor module	m			-
10	Addressable control module	m			-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	105		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	83		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	3		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14 **Fire Fighting & Alarm System**				
14.2.8	**Sixth floor**				
1	Addressable type fire alarm control panel	nr			-
2	Addressable firemen two communication and voice alarm panel	nr			-
3	Addressable type fire alarm repeater panel	nr			-
4	Addressable type manual call point	nr	2		-
5	Addressable type smoke detector	nr	12		-
6	Addressable type heat detector	nr	1.00		-
7	Addressable type combined sounder with strobe light	m	2		-
8	Addressable type strobe light	m	2		-
9	Addressable monitor module	m			-
10	Addressable control module	m			-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	105		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	83		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	3		-
14.2.9	**Seventh floor**				
1	Addressable type fire alarm control panel	nr			-
2	Addressable firemen two communication and voice alarm panel	nr			-
3	Addressable type fire alarm repeater panel	nr			-
4	Addressable type manual call point	nr	2		-
5	Addressable type smoke detector	nr	12		-
6	Addressable type heat detector	nr	1.00		-
7	Addressable type combined sounder with strobe light	m	2		-
8	Addressable type strobe light	m	2		-
9	Addressable monitor module	m			-
10	Addressable control module	m			-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	105		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	83		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	3		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14 **Fire Fighting & Alarm System**				
14.2.10	**Eight floor**				
1	Addressable type fire alarm control panel	nr			-
2	Addressable firemen two communication and voice alarm panel	nr			-
3	Addressable type fire alarm repeater panel	nr			-
4	Addressable type manual call point	nr	2		-
5	Addressable type smoke detector	nr	12		-
6	Addressable type heat detector	nr	1.00		-
7	Addressable type combined sounder with strobe light	m	2		-
8	Addressable type strobe light	m	2		-
9	Addressable monitor module	m			-
10	Addressable control module	m			-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	105		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	83		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	3		-
14.2.11	**Ninth floor**				
1	Addressable type fire alarm control panel	nr			-
2	Addressable firemen two communication and voice alarm panel	nr			-
3	Addressable type fire alarm repeater panel	nr			-
4	Addressable type manual call point	nr	2		-
5	Addressable type smoke detector	nr	12		-
6	Addressable type heat detector	nr	1.00		-
7	Addressable type combined sounder with strobe light	m	2		-
8	Addressable type strobe light	m	2		-
9	Addressable monitor module	m			-
10	Addressable control module	m			-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	110		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	85		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	3		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14 **Fire Fighting & Alarm System**				
14.2.12	**Terrace floor**				
1	Addressable type fire alarm control panel	nr			-
2	Addressable firemen two communication and voice alarm panel	nr			-
3	Addressable type fire alarm repeater panel	nr	1		-
4	Addressable type manual call point	nr	2		-
5	Addressable type smoke detector	nr	8		-
6	Addressable type heat detector	nr	1.00		-
7	Addressable type combined sounder with strobe light	m	2		-
8	Addressable type strobe light	m	2		-
9	Addressable monitor module	m			-
10	Addressable control module	m	7		-
11	1.5 mm2 Fire resistant cable for fire detection and alarm system	m	89		-
12	1.5 mm2 Fire resistant cable for firemen communication systems	m	38		-
13	Fireman telephone jack	m	2		-
14	Emergency voice speaker	m	3		-
14.3	**GI piping works for wet riser , dry riser and hose reel** Rate to consider pipe network for horizontal and vertical pipes including ball valve , landing valve , non return valve etc..				
1	Basement floor	Item	1		-
2	Ground floor	Item	1		-
3	First floor	Item	1		-
4	Second floor	Item	1		-
5	Third floor	Item	1		-
6	Fourth floor	Item	1		-
7	Fifth floor	Item	1		-
8	Sixth floor	Item	1		-
9	Seventh floor	Item	1		-
10	Eight floor	Item	1		-
11	Ninth floor	Item	1		-
12	Terrace floor	Item	1		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14 **Fire Fighting & Alarm System**				
14.4	**Fire Pump**				
	Supply and fixing/install fire pump as shown specification , drawings , manufacture's details & builder's works completely.				
1	Main Electric Fire Pump - Duty 1500 L/min Flow rate at 11 bar approved fire pump to be provide with all necessary accessories.	nr	1		-
2	Jockey Electrical Pump 60 L/min Flow rate at 12 bar approved pump to be provide with all necessary accessories.	nr	1		-
3	Main Electric Fire Pump - Stand by 1500 L/min Flow rate at 11 bar approved fire pump to be provide with all necessary accessories.	nr	1		-
4	Allow for supply & fixing pressure vessel 300 Ltr as shown detailed drawing.	nr	1		-
	Total Of Bill No: 14 - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14A **Other Works**				
14A.1	**GENERAL**				
	(a) The Bidder is requested to refer the General Notes, Schedules, Drawings, Specifications and other relevant documents.				
	(b) All are according to the drawing and specification. Rates shall include all the works completely unless otherwise measured separately.				
	(c) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
14A.2	**Kitchen Cupboard/Pantry Cupboards**				
	Supply & fixing/placing kitchen cupboard/pantry cupboard as suitable as directed by the employer/client completely.				
1	Ground floor	Item	-		-
2	First floor	Item	1.00		-
3	Second floor	Item	1.00		-
4	Third floor	Item	1.00		-
5	Fourth floor	Item	1.00		-
6	Fifth floor	Item	1.00		-
7	Sixth floor	Item	1.00		-
8	Seventh floor	Item	1.00		-
9	Eight floor	Item	1.00		-
10	Ninth floor	Item	1.00		-
12	Terrace floor	Item	1.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14A **Other Works**				
14A.3	**Curtains**				
	Supply & fixing curtains for internal window as directed by the client, completely.				
1	Ground floor	Item	1.00		-
2	First floor	Item	1.00		-
3	Second floor	Item	1.00		-
4	Third floor	Item	1.00		-
5	Fourth floor	Item	1.00		-
6	Fifth floor	Item	1.00		-
7	Sixth floor	Item	1.00		-
8	Seventh floor	Item	1.00		-
9	Eight floor	Item	1.00		-
10	Ninth floor	Item	1.00		-
12	Terrace floor	Item	1.00		-
14A.4	**Pool Construction**				
	Allow for the construction swimming pool at terrace floor according to the manufactures details/specification and drawings completely. Rate to consider pool mounting pier , pool base and pool side wall , pool pump room , balancing tank etc….	Item	1.00		-
14A.5	**Boundary Wall**				
	Boundary Wall Type 1 (Detail 1) Rate to include soil excavation , backfilling , concreting , waterproofing works , plastering , painting etc….	Item	1.00		-
	Total Of Bill No: 14A - Carried to Bill Summary				**-**

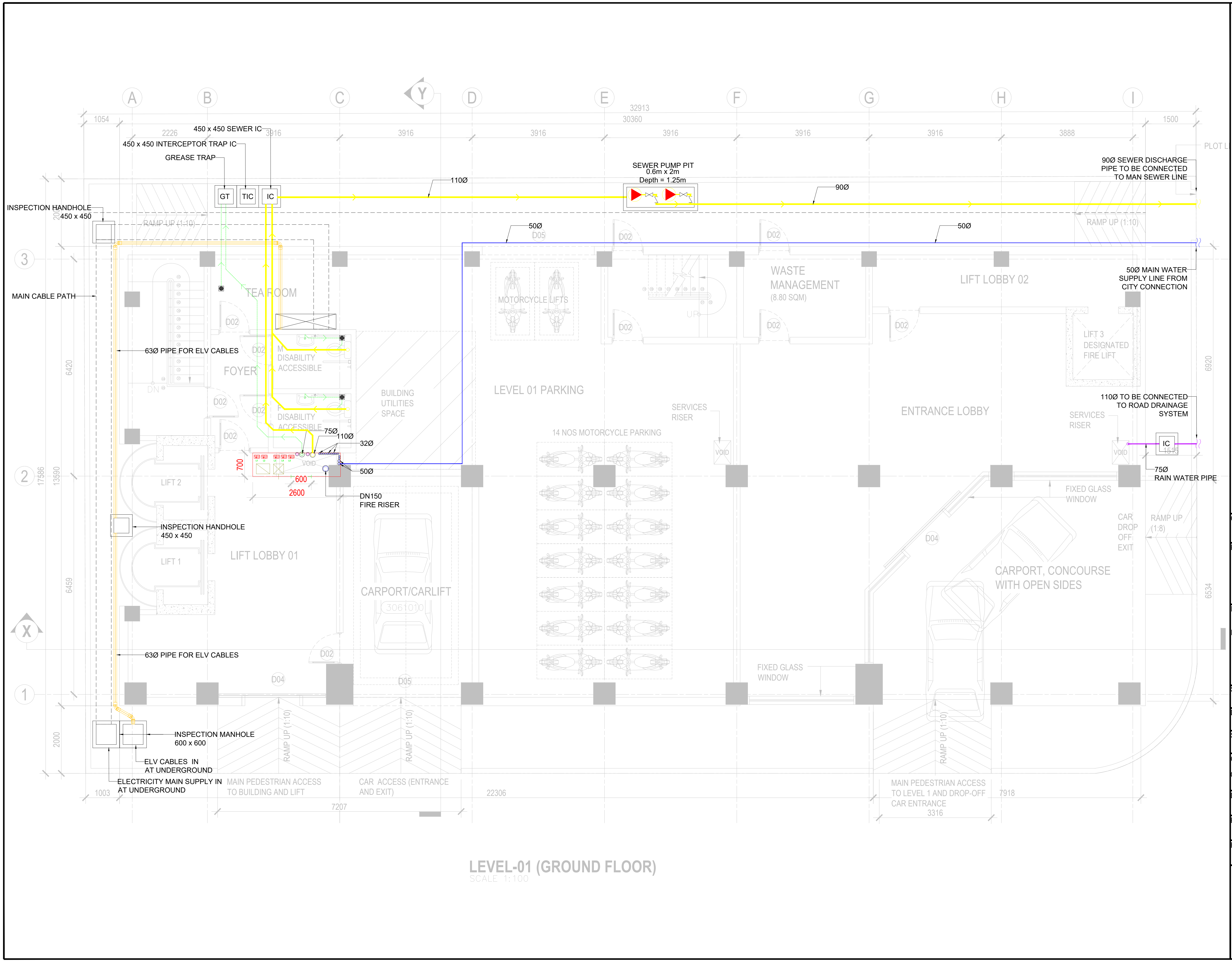
Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14B **Exterior Glass Curtain Wall System & Wall Cladding**				
14B.1	**GENERAL**				
	(a) The Bidder is requested to refer the General Notes, Schedules, Drawings, Specifications and other relevant documents.				
	(b) All are according to the drawing and specification. Rates shall include all the works completely unless otherwise measured separately.				
	(c) Where there may be any discrepancies between the drawings and BOQ , details given in the drawings shall proceed.				
	(d) The Bidder is required to refer drawings before quote for this work. If Its subject to addition quantities can be consider under Bill 15.				
14B.2	**Proprietary Curtain Wall System**				
	Proprietary curtain wall system diagonal mullions feature of curtain wall system according to the manufactures details and specification completely.				
	At 979 mm spacing , column to column.				
	Openable top half of curtain wall windows to manufactures details.				
	Rate to included all the works unless otherwise measured seperetely.				
1	Ground floor (Cladding Panel)	m^2			-
2	First floor	m^2	230.00		-
3	Second floor	m^2	230.00		-
4	Third floor	m^2	208.00		-
5	Fourth floor	m^2	208.00		-
6	Fifth floor	m^2	230.00		-
7	Sixth floor	m^2	230.00		-
8	Seventh floor	m^2	208.00		-
9	Eight floor	m^2	208.00		-
10	Ninth floor	m^2	230.00		-
11	Terrace floor	m^2	197.00		-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 14B **Exterior Glass Curtain Wall System & Wall Cladding**				
14B.3	**Tempered Glass For Observation Lift Cover (Lift 1 & 2)**				
	Supply and fixing tempered glass wall curved observation lift wall as shown detailed drawings according to the manufacture's specification.	Item	1.00		-
14B.4	**Wall Cladding**				
	Supply & fixing wall cladding panel for ground floor exterior wall surface as shown drawing , manufactures details etc..				
1	Ground floor	m^2	231.00		-
	Total Of Bill No: 14B - Carried to Bill Summary				**-**

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 15 **Additional Works**				
15.1	**General** The Contractor shall describe and price hereunder any items/quantities shown on the drawings, mentioned in the Specifications, or required for the satisfactory completion of the project, not mentioned BOQ.				
	Total Of Bill No: 15 - Carried over to summary				-

Item	Description	Unit	Quantity	Rate (MVR)	Amount (MVR)
	Bill No: 16 **Omission Works**				
16.1	General				
	Total Of Bill No: 16 - Carried over to summary				

APPENDIX Q. SERVICE LINE DRAWINGS FOR WATER, SEWER AND ELECTRICITY



LEVEL-01 (GROUND FLOOR)

SCALE 1:100

Revision	Date	Drawn By	Checked By

This drawing should be used only for the project mentioned on this sheet

Client :
THE HAWKS PVT LTD

Project Title :
OFFICE COMPLEX HULHUMALE'

Building Name :
OFFICE COMPLEX

Drawing Title :
MEP UTILITIES ACCESS PLAN GROUND FLOOR

Scale :
1:100

Discipline :
MEP

Stage :
SUBMISSION

Original Drawn By :
NADEERA

Date :
MARCH 2024

Checked By :
THALAAL

Drawing Number :
00

Revision Number :
R00

File Name :
306HAWKS.dwg

GEDOR CONSULTING PVT. LTD.

Deens Villa
Meheli Goalhi
Malé 20012
Republic of Maldives

Tel: 960 3318452
E-Mail: admin@gedor.com.mv
Webpage: gedor.com.mv

All dimensions to be checked on site.

APPENDIX R. CONTRIBUTORS TO EIA

Chapter	Contributor's	Signature
Chapter 1: Introduction	Mahfooz Abdul Wahhab	
Chapter 2: Statutory Requirements	Mahfooz Abdul Wahhab	
Chapter 3: Project Description	Mahfooz Abdul Wahhab	
Chapter 4: Methodology	Ibrahim Rashihu Adam	
Chapter 5: Existing Environment	Ibrahim Rashihu Adam	
Chapter 6: Stakeholder Consultation	Mahfooz Abdul Wahhab	
Chapter 7: Options Assessment	Mahfooz Abdul Wahhab	
Chapter 7: Potential Impacts Analysis	Mahfooz Abdul Wahhab	
Chapter 9: Environmental Management	Mahfooz Abdul Wahhab	

Chapter 10: Justification and Conclusion	Mahfooz Abdul Wahhab	