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NAME OF PROJECT

GEOTECHNICAL INVESTIGATION FOR THE PROPOSED CONSTRUCTION OF HIGH-RISE RESIDENTIAL BUILDING CONSISTING OF TWO BASEMENT + GROUND + STILT + 19 UPPER FLOORS AT VELACHERRY, CHENNAI

CLIENT

M/S IYRA PROPERTIES,
31, RAJAMANNAR STREET,
PARTHASARATHIPURAM, T. NAGAR,
CHENNAI – 600 017.

TITLE

GEOTECHNICAL INVESTIGATION REPORT

REPORT NO.: GT- 2806

DATE	REVISON	DESCRIPTION		AUTHORISED SIGNATORY
26/06/2024	0.0	SUBMISSION OF GEOTECHNICAL REPORT FOR DESIGN OF FOUNDATION	SIGN	
			DATE	26/06/2024
			DESIGNATION	MANAGING DIRECTOR
			NAME	**DR. C.V. PRASAD**

REPORT TEXT

GEOTECHNICAL REPORT FOR THE DESIGN OF FOUNDATIONS

1.0 PROJECT INFORMATION MATRIX:

NATURE OF PROJECT	**: PROPOSED RESIDENTIAL BUILDING**
CLIENT	**: M/s IYRA PROPERTIES**
STRUCTURE	**: 2 BASEMENT + STILT + 19 UPPER FLOORS**
PROJECT LOCATION	**: PERUNGUDI, CHENNAI**
JOB CODE	**: GT-2758**

1.1 SCOPE OF WORK:

1.1.1 FIELD WORK:

- Carrying out five investigation bore holes of 150 mm diameter in the overburden soil and NX size Core drilling in the rock formation
- The depth of investigation for the completed seven boreholes are minimum 12.0m and maximum up to 16.0m below the existing ground level and the termination is based on the rock core recovery ratio.
- Conducting Standard Penetration Test (SPT) within the borehole at every 1.0m depth interval up in the top 6.0m followed by 1.5m depth interval up to 12.0m
- The SPT is conducted at an interval of 2.0m from 12.0m and further in rock formation, the core samples are obtained at an interval of 1.5m.
- Collection of water samples if groundwater table met within the investigation depth.

1.1.2 FIELD SUB SOIL PROFILES:

The field sub soil profiles are presented in Figs.2.1 to Fig. 2.5.

- The soil classification presented in these profiles are based on visual identification and SPT-Values.
- The field sub soil description will be corrected as per laboratory identification tests and will be presented in the final reports.

2.0 GENERALISED SUB SOIL FORMATION:

The sub soil stratification of the project location is as follows

0.0m to 2.0m	Filled Up/ Predominantly Building Debris
2.0m to 10.5m/12.5m	Very Soft, Silty Clay With Lenses of Stiff Clay @ 2.0m
10.5m/12.5m & Beyond	Moderately to Slightly Weathered Rock – Grade W3 & W2 Granitic Rock Formation

3.0 FOUNDATION SYSTEM:

3.1 BEARING STRATUM:

For the proposed structural configuration, the strata beyond 10.5m (@ BH-01, BH-02 & BH-03) & 12.5m (@ BH-04 & BH-05) from the existing ground level meets the requirement of bearing strata from both shear and compressibility response to super structural load.

3.2 FOUNDATION SYSTEM:

In the present case, the proposed structural configuration consists of 2 basement floors and the depth of excavation including raft thickness is about 8.0m (Considering the height of basement of 3.5m and raft thickness of 1.0m).

The sub surface stratification at founding level and up to a depth of about 12.5m being Very Soft, Silty Clay, hence raft foundation system is not feasible due to shear and settlement considerations. Hence, it is advisable to adopt deep pile foundation system.

The piles can be installed by drilling with direct mud circulation technique **(Bored Cast Insitu Piles)** and the recommended safe load carrying capacity of bored cast insitu piles in compression, tension and lateral for different diameters with 1.5D socket into the underlying rock formation is worked out as per IS 2911-Part-I-Section-2 and are presented in Table 1.0.

Typical computations are presented in Annexure-I

NOTE ON LATERAL CAPACITY OF PILES:

OPTION-I

In the case of lateral load transfer, effective resistance from soil shear takes place below 12.5m hence the lateral load resistance from soil is worked out and presented in Table 5.1 considering soil characteristics from 12.5m & below.

Hence in lateral load design transfer the lateral load at pile cut-off level to 12.5m along with moment due to lever arm from pile cut-off and 12.5m.

OPTION-II

In case, lateral load carrying capacity of piles considering soil resistance do not meet optimization of piles, adopt the following method:

- Arrive the number of piles from vertical load consideration
- Distribute the lateral below the column equally to all piles in the group
- Carry out the structural design of piles with vertical load, moment from superstructure at top of the piles and moment due to lateral load with lever arm from bottom of pile cap to 12.5m below the existing ground level.

3.3 SHORING SYSTEM:

In the present case, the formation right from the existing ground level up to 11.0m/12.5m is predominantly very soft silty clay. Hence for the kind of sub soil, diaphragm wall or contiguous piles with bentonite piles/ secant piles is an ideal system which can also acts as a cut off wall for lateral seepage.Since the scope of work does not cover the design of shoring system the same is not presented in the report.

3.4 DEWATERING/ GROUND WATER LOWERING DESIGN:

In order to lower the ground water table within the zone of excavation, the dewatering operation shall be carried out inside the foundation excavation, which in turn limits the cone of depression within the boundary of the shoring system.

Adopt dewatering boreholes within the zone of excavation, taken to depth of 13.0m from the existing ground level. Since the design of dewatering system is beyond the scope of investigation the same is not provided in the report.

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TABLE:- 1.0 RECOMMENDED SAFE LOAD CARRYING CAPACITIES OF BORED CAST-IN SITU PILES

S. NO.	IN VICINITY OF BOREHOLES	ZONATION	TOP OF ROCK FORMATION (m)	ASSUMED LENGTH OF CUT-OFF BELOW EGL (m)	RECOMMENDED SOCKETING DEPTH (1.5D) (m)	LENGTH OF PILE BELOW GROUND LEVEL (m)	DIAMETER OF PILE (mm)	SAFE LOAD CARRYING CAPACITY (kN)		
								VERTICAL LOAD CARRYING CAPACITY	PULL OUT CAPACITY	LATERAL LOAD CARRYING CAPACITYCONSIDERED CUT-OFF OF 11.0m BGL
1.0	BH-01, BH-02 & BH-03	ZONE-A	11.0	8.0	0.8	**11.8**	500	1200	400	80
2.0					0.9	**11.9**	600	1700	500	100
3.0					1.1	**12.1**	750	2300	700	120
4.0					1.2	**12.2**	800	2800	900	150
5.0					1.4	**12.4**	900	3500	1000	180
6.0					1.5	**12.5**	1000	4000	1100	250

S. NO.	IN VICINITY OF BOREHOLES	ZONATION	TOP OF ROCK FORMATION (m)	ASSUMED LENGTH OF CUT-OFF BELOW EGL (m)	RECOMMENDED SOCKETING DEPTH (1.5D) (m)	LENGTH OF PILE BELOW GROUND LEVEL (m)	DIAMETER OF PILE (mm)	SAFE LOAD CARRYING CAPACITY (kN)		
								VERTICAL LOAD CARRYING CAPACITY	PULL OUT CAPACITY	LATERAL LOAD CARRYING CAPACITYCONSIDERED CUT-OFF OF 13.0m BGL
1.0	BH-04 & BH-05	ZONE-B	13.0	8.0	0.8	**13.8**	500	1200	400	80
2.0					0.9	**13.9**	600	1700	500	100
3.0					1.1	**14.1**	750	2300	700	120
4.0					1.2	**14.2**	800	2800	900	150
5.0					1.4	**14.4**	900	3500	1000	180
6.0					1.5	**14.5**	1000	4000	1100	250

Note: Since there is a lateral variation in the degree of weathering of underlying granitic rock, the depth of termination of piles varies and this aspect has to be considered in pile termination.

3.5 LOWER BASEMENT SLAB UPLIFT:

Since there is possibility of leakage of ground water from the tip of the diaphragm wall, check the lower basement slab/raft for uplift considering ground water table at existing ground level.

AUTHORISED SIGNATORY

DR. C.V. PRASAD
GEO MARINE CONSULTANTS (P) LTD.,

ANNEXURE-I

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ESTIMATION OF SAFE LOAD CARRYING CAPACITY OF BORED CAST-INSITU PILES

Type of Pile	Bored	Diameter of Pile			Length of Pile From Natural Ground Level (m)	12.4	As Per IS:2911-(P-I,S-2)-2010
Reference Bore Hole	BH-01, BH-02 & BH-03		900	mm	Surcharge Pressure	0	kPa

Layer No.	Layer Thk. (m) Top Below N.G.L	Bottom Below N.G.L	Thickness	Type of Strata	Ave. SPT	(γ) kN/m³ of Layer	(γ) kN/m³ Ave. upto Layer	Shear Parameters (C_u) kPa	Shear Parameters (ϕ) Deg.	Effective Overburden Pressure (kPa) At top of Layer	At Bot. of Layer	At Mid. of Layer	Adhession Factor (α)	Earth Pressure Coefficient (k)	Skin Friction (Q_f) kN
1.0	0.0	8.0	8.0	Cut-Off Level											
2.0	8.0	11.0	3.0	Silty Clay	1	13.5	13.5	7	-	0.0	10.5	5.3	1.0	-	qf $_2$ 59.4

Summation of Positive Skin Resitance (kN)	Q_f=	59.38
Summation of Negative Skin Resistance (kN)	-Qf=	0.00
Safe Positive Skin Friction for Vertical Load Load Carrying Capacity (kN) (Q_f/2.5)	Q_{sf}=	23.75
Safe Positive Skin Friction for Pull Out Capacity (kN) (Q_f/3)	Q_{spf}=	19.79

COMPUTATION OF ROCK SOCKET CAPACITY, IS 2911 (PART 1/SEC 2):2010, ANNEX-B, B-8

Type of Strata:	Completely Weathered Granitic Rock	
Diameter of the Pile (D):	0.90	m
Shear Strength of Rock in the Socketed Length (Grade-D, Ref Figure-3, Page No. 13, IS 2911/1/2-2010) (Cu_2):"N" Value=150 (Adopted Grade-E for the Design)	1350	kPa
(Recommended Value as per IS 2911 (Part 1/Sec 2), Annex-B, B-8), α:	0.90	"
Socket Length into the rock, 1.5D (L):	1.35	
Factor of Safety, as per IS 2911 (Part 1/Sec 2), Annex B-8 (F_s):	3.00	
Safe Socketing Capacity (QSoc= $Cu_2 \alpha \pi DL/Fs$):	1546	kN

COMPUTATION OF END BEARING RESISTANCE, IS 2911 (PART 1/SEC 2):2010, ANNEX-B, B-8

Type of Strata:	Completely Weathered Granitic Rock	
Diameter of the Pile (D):	0.90	m
Shear Strength of Rock below Pile Base (Grade-D, Ref Figure-3, Page No. 13, IS 2911/1/2-2010) (Cu1):"N" Value=150 (Adopted Grade-E for the Design)	1350	kPa
Bearing Capacity Factor (Nc), Ref B-8, Page No.13, IS 2911/1/2-2010:	9.00	"
Cross Sectional Area of Pile Toe (A_p):	0.64	
Factor of Safety, as per IS 2911 (Part 1/Sec 2), Annex B-8 (F_s):	3.00	
Safe End Bearing Capacity ($Q_{End}=C_{u1}N_cA_p/F_s$):	2576	kN
Self Weight of Pile (P_{SW}):	119.34	kN
Allowable Vertical Load Carrying Capacity (Q_{AV}): $Q_{AV}= QE_{nd}+Q_{Soc}+ Q_{sf}-Q_f$	**4122**	**kN**
Allowable Pull Out Capacity (Q_{AP}): $Q_{AP}= Q_{Soc}+Q_{spf}$	**1566**	**kN**

Where

Cu=Undrained Shear Strength of Clay
K=Coef. Earth Pressure at Rest
d=Dia. Of Pile
ϕ=Angle of Shearing Resistance
q_i=Effecitve Overburden Pressure at middle of Layer
α=Adhession Factor
N_c=Bearing Capacity Factor = 9
N_q=Bearing Capacity Factor, Ref. Fig.1 of IS: Code Referred above
T_i=Thickness of Layer
Q (i.e) Effecitve Overburden Pressure at pile tip=Effective height of overburden X (γ-10)

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ESTIMATION OF SAFE LOAD CARRYING CAPACITY OF BORED CAST-INSITU PILES

Type of Pile	Bored	Diameter of Pile			Length of Pile From Natural Ground Level (m)	13.8	As Per IS:2911-(P-I,S-2)-2010
Reference Bore Hole	BH-04 & BH-05		500	mm	Surcharge Pressure	0	kPa

Layer No.	Layer Thk. (m) Top Below N.G.L	Bottom Below N.G.L	Thickness	Type of Strata	Ave. SPT	(γ) kN/m³ of Layer	(γ) kN/m³ Ave. upto Layer	Shear Parameters (C_u) kPa	Shear Parameters (ϕ) Deg.	Effective Overburden Pressure (kPa) At top of Layer	At Bot. of Layer	At Mid. of Layer	Adhession Factor (α)	Earth Pressure Coefficient (k)	Skin Friction (Q_f) kN		
1.0	0.0	8.0	8.0	Cut-Off Level													
2.0	8.0	13.0	5.0	Silty Clay	1	13.5	13.5	7	-	0.0	17.5	8.8	1.0	-	qf	2	55.0

Summation of Positive Skin Resitance (kN)	Q_f=	54.98
Summation of Negative Skin Resistance (kN)	-Qf=	0.00
Safe Positive Skin Friction for Vertical Load Load Carrying Capacity (kN) (Q_f/2.5)	Q_{sf}=	21.99
Safe Positive Skin Friction for Pull Out Capacity (kN) (Q_f/3)	Q_{spf}=	18.33

COMPUTATION OF ROCK SOCKET CAPACITY, IS 2911 (PART 1/SEC 2):2010, ANNEX-B, B-8

Type of Strata:	Completely Weathered Granitic Rock	
Diameter of the Pile (D):	0.50	m
Shear Strength of Rock in the Socketed Length (Grade-D, Ref Figure-3, Page No. 13, IS 2911/1/2-2010) (Cu_2):"N" Value=150 (Adopted Grade-E for the Design)	1350	kPa
(Recommended Value as per IS 2911 (Part 1/Sec 2), Annex-B, B-8), α:	0.90	"
Socket Length into the rock, 1.5D (L):	0.75	
Factor of Safety, as per IS 2911 (Part 1/Sec 2), Annex B-8 (F_s):	3.00	
Safe Socketing Capacity (QSoc= $Cu_2 \alpha \pi DL/Fs$):	477	kN

COMPUTATION OF END BEARING RESISTANCE, IS 2911 (PART 1/SEC 2):2010, ANNEX-B, B-8

Type of Strata:	Completely Weathered Granitic Rock	
Diameter of the Pile (D):	0.50	m
Shear Strength of Rock below Pile Base (Grade-D, Ref Figure-3, Page No. 13, IS 2911/1/2-2010) (Cu1):"N" Value=150 (Adopted Grade-E for the Design)	1350	kPa
Bearing Capacity Factor (Nc), Ref B-8, Page No.13, IS 2911/1/2-2010:	9.00	"
Cross Sectional Area of Pile Toe (A_p):	0.20	
Factor of Safety, as per IS 2911 (Part 1/Sec 2), Annex B-8 (F_s):	3.00	
Safe End Bearing Capacity ($Q_{End}=C_{u1}N_cA_p/F_s$):	795	kN
Self Weight of Pile (P_{SW}):	41.01	kN
Allowable Vertical Load Carrying Capacity (Q_{AV}): $Q_{AV}= QE_{nd}+Q_{Soc}+ Q_{sf}-Q_f$	**1272**	**kN**
Allowable Pull Out Capacity (Q_{AP}): $Q_{AP}= Q_{Soc}+Q_{spf}$	**495**	**kN**

Where

Cu=Undrained Shear Strength of Clay
K=Coef. Earth Pressure at Rest
d=Dia. Of Pile
ϕ=Angle of Shearing Resistance
q_i=Effecitve Overburden Pressure at middle of Layer
α=Adhession Factor
N_c=Bearing Capacity Factor = 9
N_q=Bearing Capacity Factor, Ref. Fig.1 of IS: Code Referred above
T_i=Thickness of Layer
Q (i.e) Effecitve Overburden Pressure at pile tip=Effective height of overburden X (γ-10)

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LATERAL LOAD CARRYING CAPACITY OF BORED CAST- SITU PILES

1.0 GEOMETRICAL & PILE DETAILS:

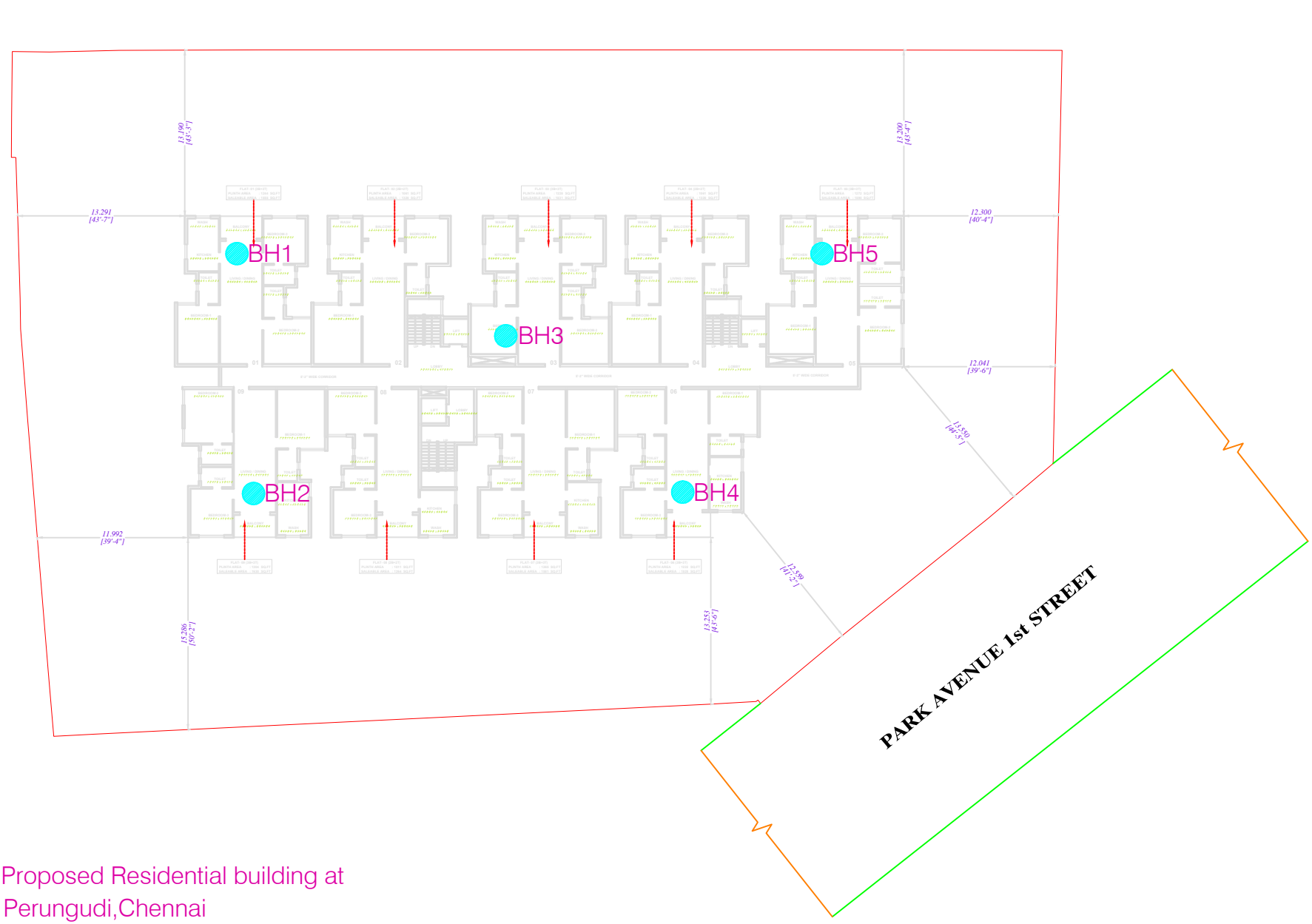
Type of Pile Head Considered		Fixed	
Diameter of Pile (d)	:	0.90	m
Unsupported Length of Pile (L_1)	:	0.00	"
Length of Pile below E.G.L (L_P)	:	12.00	"
Depth of Soil Offering Resistance to Lateral Load (BGL)	:	11.000	"
Length of Pile below 15.0m Level (Le)	:	1.000	"
Grade of Concrete (M)	:	25	MN/m^2
Young's Modulus of Concrete (E)	:	25000000	kN/m^2
Momemnt of Inertia (I)	:	0.032206	m^4

2.0 SUB SOIL DETAILS & LOAD CARRYING CAPACITY:

Type of Soil Strata	:	Sand	
Ground Water Condition	:	Submerged	
Design SPT "N" Value below Scour Level/Liquefaction Level	:	50	
T=(EI/nh)1/5			
(n can be read as h in the above and below equation in case of Sand)			
nh=	:	7234.043	kN/m^3
In Case of Sand	:	-	kN/m^4
T=	:	2.57	m
Hence, L1/T	:	0.00	
Value of L_f/T	:	2.20	
L_f	:	5.65	m
Effective Length of Pile L_e	:	5.65	"
Lateral deflection at 15.0m level under unit lateral load			
$y= (H \times (L_1+L_f)^3)/ 12EI$	:	0.019	mm
	:	0.000019	m
Allowable Lateral Deflection at 15.0m Level, Y	:	5.00	mm
Lateral Load Capacity for 5.0mm Deflection @ top of 15.0m Level:		268.45	kN
Recommended Lateral Load Carrying Capacity of Pile	:	268.45	kN

3.0 FIXED END MOMENT:

Fixed End Moment,$M_F=H(L_1+L_f)/2$		758	
Reduction Factor (L_1/T)	:	0.83	m
Actual Moment (Fixed End Moment/Reduction Factor),M_F		**629**	kN-m



Proposed Residential building at
Perungudi,Chennai

21.05.24

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SITE INVESTIGATION RECORD

BORE HOLE No.	BH-01
SHEET	1 OF 2

PROJECT NAME	PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING	DIA OF BORE HOLE	150mm ✓ / NX

LOCATION	Perungudi, Chennai	MACHINE No.	CR-06	Free Fall Energy (%)	60	BORE START DATE	06/06/2024
STRUCTURE	2 Basement + Stilt + 19 Upper Floors	DRILLING METHOD	Rotary	CO-ORDINATES	-	BORE END DATE	08/06/2024
JOB CODE	GT-2806	FLUSHING MEDIUM	Bentonite	E	-	TOTAL DRILL DAYS	3

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min.	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	15-30	30-45	SPT Value: N_{80}	SPT Value: N_{60}	Sample Details: Depth	Type	RL (m)	Layer Data: Legend	No	Depth	Geotechnical Description
1	06/06/2024	15	30	SC	-	-	12	12	9	-	21	1.25	SS	-1.25				Filled Up Building Debris & Soil Mixture
		To										1.70				L1	1.8	
		15	34															
		15	52	SC	-	-												
2		To										2.00	SS	-2.0				
		15	53				2	3	3	-	6							Grey,Moist,Medium Stiff,**Silty CLAY (CH)** Clay of High Plasticity
		16	10									2.45						
		To		SC	-	-												
3		16	11									3.00	SS	-3.0		L2	3.0	
		16	22				45 Cm Penet for 1 Blow			-	0							
		To		SC	-	-						3.45						
		16	23															
4		17	00				45 Cm Penet for 1 Blow			-	0	4.00	SS	-4.0				
		To		SC	-	-						4.45						
		17	01															
5		09	00				45 Cm Penet for 1 Blow			-	0	5.00	SS	-5.0				
		To		SC	-	-						5.45						
		09	01															
6		09	20				45 Cm Penet for 0 Blow			-	0	6.00	SS	-6.0				
		To		SC	-	-						6.45						Grey,Black,Moist,Very Soft,**Silty CLAY (CH)** Clays of High Plasticity
		09	01															
7	07/06/2024	09	45				-	-	-	-	-	7.00	*UDS	-7.0				
		To		SC	-	-												
		09	46				45 Cm Penet for 0 Blow			-	0	7.50	SS	-7.5				
8		10	00									7.95						
		To		SC	-	-												
		10	01															
9		10	25				1	1	2	-	3	9.00	SS	-9.0				
		To		SC	-	-						9.45						
10		10	43															

CS - Core Sample	DS - Disturbed Sample	LOGGED	S. Stephenraj	PROJECT SITE DETAILS		REMARKS
SS - Split Spoon Sample	SC - Soil Cutter	DATE	07/06/2024	GROUND LEVEL (m)	0.00	*UDS-SAMPLE FAILED
UDS- Undisturbed Sample	TCB - Tungsten Carbide Bit	CHECKED	V. Aravindhan	WATER TABLE (m)	1.60	
WS - Wash Sample	DB - Diamond Bit	DATE	21/06/2024	CASING DEPTH (m)	0.00	

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SITE INVESTIGATION RECORD

BORE HOLE No.	BH-01
SHEET	2 OF 2

PROJECT NAME	PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING	DIA OF BORE HOLE	150mm ☐ / NX ✓

LOCATION	Perungudi, Chennai	MACHINE No.	CR-06	Free Fall Energy (%)	60	BORE START DATE	06/06/2024
STRUCTURE	2 Basement + Stilt + 19 Upper Floors	DRILLING METHOD	Rotary	CO-ORDINATES	N -	BORE END DATE	08/06/2024
JOB CODE	GT-2806	FLUSHING MEDIUM	Bentonite		E -	TOTAL DRILL DAYS	3

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min.	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	15-30	30-45	SPT Value: N_{80}	SPT Value: N_{60}	Sample Details: Depth	Type	RL (m)	Layer Data: Legend	No	Depth	Geotechnical Description
												10.50	SS	-10.5		L3	10.5	Grey,Black,Moist,Very Soft,**Silty CLAY (CH)** Clays of High Plasticity
							8 Cm Penet for 50 Blow			-	**>100**	10.58			+ + + + +	L4	11.0	Very Dense,**Completely Weathered Rock - Grade W5 Formation**
11	07/06/2024	11 To 13	45 00	DB	67	40									+ + + + +			
12							-	-	-	-	-	12.00	CS	-12.0	+ + + + +			Medium to Dark Grey,Medium to Coarse Grain Structure,Low to Medium Fractures,Discoloured @ Fractures,**Moderately Weathered Rock - Grade W3 Formation** Hypersthene Granitic Rock Formation
		14 To 17	00 00	DB	55	45												
13							-	-	-	-	-	13.50	CS	-13.5	+ + + + +	L5	13.5	
14	08/06/2024	10 To 12	00 35	DB	87	73									+ + + + +			Medium to Dark Grey,Medium to Coarse Grain Structure,Fractiures @ Times,**Slightly Weathered Rock - Grade W2 Formation** Hypersthene Granitic Rock Formation
15							-	-	-	-	-	15.00	CS	-15.0	+ + + + +	L6	15.0	
16																		
17																		
18																		
19																		
20																		

CS - Core Sample	DS - Disturbed Sample	LOGGED	S. Stephenraj	PROJECT SITE DETAILS		REMARKS
SS - Split Spoon Sample	SC - Soil Cutter	DATE	08/06/2024	GROUND LEVEL (m)	0.00	
UDS- Undisturbed Sample	TCB - Tungsten Carbide Bit	CHECKED	V. Aravindhan	WATER TABLE (m)	1.60	
WS - Wash Sample	DB - Diamond Bit	DATE	21/06/2024	CASING DEPTH (m)	0.00	

Borehole terminated at 15 m depth below E.G.L

FIG.2.1 Sub Soil Profile at BH-01 Location

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SITE INVESTIGATION RECORD

BORE HOLE No.	BH-02
SHEET	1 OF 2
DIA OF BORE HOLE	150mm ✓ / NX ✓

PROJECT NAME	PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING							BORE START DATE	10/06/2024
LOCATION	Perungudi, Chennai	MACHINE No.		CR-06	Free Fall Energy (%)		60	BORE START DATE	10/06/2024
STRUCTURE	2 Basement + Stilt + 19 Upper Floors	DRILLING METHOD		Rotary	CO-ORDINATES		-	BORE END DATE	11/06/2024
JOB CODE	GT-2806	FLUSHING MEDIUM		Bentonite		E	-	TOTAL DRILL DAYS	2

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min.	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	15-30	30-45	SPT Value: N_{80}	SPT Value: N_{60}	Sample Details: Depth	Type	RL (m)	Layer Data: Legend	No	Depth	Geotechnical Description
1	10/06/2024	10	30	SC	-	-												
		To					18	10	18	-	28	1.25	SS	-1.25				Filled Up Building Debris & Soil Mixture
		10	35									1.70				L1	1.8	
		10	45															
2		To		SC	-	-												
		10	46				2	2	4	-	6	2.00	SS	-2.0				
		11	00									2.45						Brown Grey,Moist,Medium Stiff,**Silty CLAY (CH)** Clays of High Plasticity
		To		SC	-	-												
3		11	01													L2	3.0	
							45 Cm Penet for 1 Blow			-	0	3.00	SS	-3.0				
		11	15									3.45						
		To		SC	-	-												
4		11	16															
							45 Cm Penet for 1 Blow			-	0	4.00	SS	-4.0				
		11	30									4.45						
		To		SC	-	-												
5		11	31															
							45 Cm Penet for 1 Blow			-	0	5.00	SS	-5.0				
		11	45									5.45						
		To		SC	-	-												
6		11	46															
							45 Cm Penet for 1 Blow			-	0	6.00	SS	-6.0				
		12	00									6.45						
		To		SC	-	-												Grey,Black,Moist,Very Soft,**Silty CLAY (CH)** Clays of High Plasticity
7		12	01															
							45 Cm Penet for 1 Blow			-	0	7.50	SS	-7.5				
		12	30									7.95						
8		To		SC	-	-												
		12	31															
							45 Cm Penet for 1 Blow			-	0	9.00	SS	-9.0				
9		14	00									9.45						
		To		SC	-	-												
10		14	10				7 Cm Penet for 50 Blow			-	>100	10.00	SS	-10.0		L3	10.0	

CS - Core Sample	DS - Disturbed Sample	LOGGED	S. Stephenraj	PROJECT SITE DETAILS	REMARKS
SS - Split Spoon Sample	SC - Soil Cutter	DATE	10/06/2024	GROUND LEVEL (m) 0.00	
UDS- Undisturbed Sample	TCB - Tungsten Carbide Bit	CHECKED	V. Aravindhan	WATER TABLE (m) 1.20	
WS - Wash Sample	DB - Diamond Bit	DATE	21/06/2024	CASING DEPTH (m) 0.00	

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No.	BH-02
SHEET	2 OF 2

PROJECT NAME	PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING	DIA OF BORE HOLE	150mm / NX ✓

LOCATION	Perungudi, Chennai	MACHINE No.	CR-06	Free Fall Energy (%)	60	BORE START DATE	10/06/2024
STRUCTURE	2 Basement + Stilt + 19 Upper Floors	DRILLING METHOD	Rotary	CO-ORDINATES	N -	BORE END DATE	11/06/2024
JOB CODE	GT-2806	FLUSHING MEDIUM	Bentonite		E -	TOTAL DRILL DAYS	2

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min.	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	SPT Details: Blows/cm. 15-30	SPT Details: Blows/cm. 30-45	SPT Value: N_{80}	SPT Value: N_{60}	Sample Details: Depth	Sample Details: Type	Sample Details: RL (m)	Layer Data: Legend	Layer Data: No	Layer Data: Depth	Geotechnical Description
11	11/06/2024	09	0	DB	64	28	-	-	-	-	-	11.50	CS	-11.5	+ + + + + + + + + + + +	L4	11.5	Medium to Dark Grey,Medium to Coarse Grain Structure,Low to Medium Fractures,Discoloured @ Fractures,**Moderately Weathered Rock - Grade W3 Formation** Hypersthene Granitic Rock Formation
12		To 12	00															
		14	00	DB	85	45	-	-	-	-	-	12.50	CS	-12.5	+ + + + + + + + + + + +	L5	12.5	Medium to Dark Grey,Medium to Coarse Grain Structure,Fractiures @ Times,**Slightly Weathered Rock - Grade W2 Formation** Hypersthene Granitic Rock Formation
		To 16	00															
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		

CS - Core Sample	DS - Disturbed Sample	LOGGED	S. Stephenraj	PROJECT SITE DETAILS		REMARKS
SS - Split Spoon Sample	SC - Soil Cutter	DATE	11/06/2024	GROUND LEVEL (m)	0.00	
UDS- Undisturbed Sample	TCB - Tungsten Carbide Bit	CHECKED	V. Aravindhan	WATER TABLE (m)	1.20	
WS - Wash Sample	DB - Diamond Bit	DATE	21/06/2024	CASING DEPTH (m)	0.00	

Borehole terminated at 12.5 m depth below E.G.L

FIG.2.2 Sub Soil Profile at BH-02 Location

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No.	BH-03
SHEET	1 OF 2
DIA OF BORE HOLE	150mm ✓ / NX ✓

PROJECT NAME	PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING							BORE START DATE	12/06/2024
LOCATION	Perungudi, Chennai	MACHINE No.		CR-06	Free Fall Energy (%)		60	BORE START DATE	12/06/2024
STRUCTURE	2 Basement + Stilt + 19 Upper Floors	DRILLING METHOD		Rotary	CO-ORDINATES		-	BORE END DATE	15/06/2024
JOB CODE	GT-2806	FLUSHING MEDIUM		Bentonite		E	-	TOTAL DRILL DAYS	3

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min.	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	15-30	30-45	SPT Value: N_{80}	SPT Value: N_{60}	Sample Details: Depth	Type	RL (m)	Layer Data: Legend	No	Depth	Geotechnical Description
1	12/06/2024	15	30	SC	-	-												
		To																
		15	40				10	12	3	-	15	1.25	SS	-1.25				Filled Up
		15	50									1.70						Building Debris & Soil Mixture
		To		SC	-	-										L1	1.8	
2		15	51				0	1	1	-	2	2.00	SS	-2.0				
		16	01									2.45						
		To		SC	-	-												
		16	02															
3							45 Cm Penet for 1 Blow			-	0	3.00	SS	-3.0				
		16	30									3.45						
		To		SC	-	-												
		16	31															
4							45 Cm Penet for 1 Blow			-	0	4.00	SS	-4.0				
		09	00									4.45						
		To		SC	-	-												
		09	01															
5							45 Cm Penet for 1 Blow			-	0	5.00	SS	-5.0				
		09	30									5.45						
		To		SC	-	-												
		09	31															Grey & Brown Shades Up to 3.0m, Grey,Black,Moist,Very Soft,**Silty CLAY (CH)** Clays of High Plasticity
6	13/06/2024						45 Cm Penet for 1 Blow			-	0	6.00	SS	-6.0				
		10	00									6.45						
		To		SC	-	-												
7		10	01															
							45 Cm Penet for 1 Blow			-	0	7.50	SS	-7.5				
												7.95						
8		10	30															
		To		SC	-	-												
		10	31															
9							45 Cm Penet for 1 Blow			-	0	9.00	SS	-9.0				
	15/06/2024											9.45						
		09	00															
		To		SC	-	-												
10		09	10															

CS - Core Sample	DS - Disturbed Sample	LOGGED	S. Stephenraj	PROJECT SITE DETAILS	REMARKS
SS - Split Spoon Sample	SC - Soil Cutter	DATE	15/06/2024	GROUND LEVEL (m) 0.00	
UDS- Undisturbed Sample	TCB - Tungsten Carbide Bit	CHECKED	V. Aravindhan	WATER TABLE (m) 0.80	
WS - Wash Sample	DB - Diamond Bit	DATE	21/06/2024	CASING DEPTH (m) 0.00	

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No.	BH-03		
SHEET	2	OF	2
DIA OF BORE HOLE	150mm		
	NX	✓	

PROJECT NAME	PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING							BORE START DATE	12/06/2024
LOCATION	Perungudi, Chennai	MACHINE No.		CR-06	Free Fall Energy (%)		60		
STRUCTURE	2 Basement + Stilt + 19 Upper Floors	DRILLING METHOD		Rotary	CO-ORDINATES	N	-	BORE END DATE	15/06/2024
JOB CODE	GT-2806	FLUSHING MEDIUM		Bentonite		E	-	TOTAL DRILL DAYS	3

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min.	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	15-30	30-45	SPT Value: N_{80}	SPT Value: N_{60}	Sample Details: Depth	Type	RL (m)	Layer Data: Legend	No	Depth	Geotechnical Description
11	15/06/2024	10	00	DB	74	27	SPT Hammer Rebounded			-	>100	10.50	WS	-10.5		L2	10.5	Grey,Black,Moist,Very Soft,**Silty CLAY (CH)** Clays of High Plasticity
		To																
		10	13															
12							-	-	-	-	-	12.00	CS	-12.0				Medium to Dark Grey,Medium to Coarse Grain Structure,Fractiures @ Times,**Slightly Weathered Rock - Grade W2 Formation** Hypersthene Granitic Rock Formation
		14	00															
13		To		DB	70	70												
		17	00															
							-	-	-	-	-	13.50	CS	-13.5		L3	13.5	
14																		
15																		
16																		
17																		
18																		
19																		
20																		

CS - Core Sample	DS - Disturbed Sample	LOGGED	S. Stephenraj	PROJECT SITE DETAILS	REMARKS
SS - Split Spoon Sample	SC - Soil Cutter	DATE	15/06/2024	GROUND LEVEL (m) 0.00	
UDS- Undisturbed Sample	TCB - Tungsten Carbide Bit	CHECKED	V. Aravindhan	WATER TABLE (m) 0.80	
WS - Wash Sample	DB - Diamond Bit	DATE	21/06/2024	CASING DEPTH (m) 0.00	

Borehole terminated at 13.5 m depth below E.G.L

FIG.2.3 Sub Soil Profile at BH-03 Location

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No.	BH-04
SHEET	1 OF 2

PROJECT NAME	PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING	DIA OF BORE HOLE	150mm ✓ / NX

LOCATION	Perungudi, Chennai	MACHINE No.	CR-06	Free Fall Energy (%)	60	BORE START DATE	17/06/2024
STRUCTURE	2 Basement + Stilt + 19 Upper Floors	DRILLING METHOD	Rotary	CO-ORDINATES	-	BORE END DATE	18/06/2024
JOB CODE	GT-2806	FLUSHING MEDIUM	Bentonite	E	-	TOTAL DRILL DAYS	2

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min.	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	15-30	30-45	SPT Value: N_{80}	SPT Value: N_{60}	Sample Details: Depth	Type	RL (m)	Layer Data: Legend	No	Depth	Geotechnical Description
1	17/06/2024	15	00	SC	-	-												Filled Up Building Debris & Soil Mixture
		To																
		15	10				10	12	8	-	20	1.25	SS	-1.25				
		15	25									1.70				L1	1.8	
		To		SC	-	-												
2		15	26				4	5	7	-	12	2.00	SS	-2.0				
		15	45									2.45						Brown Grey,Moist,Stiff,**Silty CLAY (CH)** Clays of High Plasticity
		To		SC	-	-												
		15	46				45 Cm Penet for 0 Blow			-	0	3.00	SS	-3.0				
3		15	55									3.45				L2	3.0	
		To		SC	-	-												
		15	56				-	-	-	-	-	3.50	*UDS	-3.5				
		16	00															
		To		SC	-	-												
4		16	01				45 Cm Penet for 0 Blow			-	0	4.00	SS	-4.0				
		16	20									4.45						
		To		SC	-	-												
		16	21															
5							45 Cm Penet for 0 Blow			-	0	5.00	SS	-5.0				
		16	40									5.45						
		To		SC	-	-												
		16	41															
6							45 Cm Penet for 0 Blow			-	0	6.00	SS	-6.0				
		16	50									6.45						Grey,Black,Moist,Very Soft,**Silty CLAY (CH)** Clays of High Plasticity
		To		SC	-	-												
7		16	51				-	-	-	-	-	7.00	*UDS	-7.0				
		17	15															
		To		SC	-	-												
		17	16				45 Cm Penet for 0 Blow			-	0	7.50	SS	-7.5				
8		17	30									7.95						
		To		SC	-	-												
		17	31															
9							45 Cm Penet for 0 Blow			-	0	9.00	SS	-9.0				
		09	00									9.45						
		To		SC	-	-												
10		09	02															

CS - Core Sample	DS - Disturbed Sample	LOGGED	S. Stephenraj	PROJECT SITE DETAILS		REMARKS
SS - Split Spoon Sample	SC - Soil Cutter	DATE	17/06/2024	GROUND LEVEL (m)	0.00	
UDS- Undisturbed Sample	TCB - Tungsten Carbide Bit	CHECKED	V. Aravindhan	WATER TABLE (m)	1.00	*UDS-SAMPLE FAILED
WS - Wash Sample	DB - Diamond Bit	DATE	21/06/2024	CASING DEPTH (m)	0.00	

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No.	BH-04		
SHEET	2	OF	2
DIA OF BORE HOLE	150mm ✓	NX ✓	

PROJECT NAME	PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING						BORE START DATE	17/06/2024
LOCATION	Perungudi, Chennai	MACHINE No.	CR-06	Free Fall Energy (%)	60			
STRUCTURE	2 Basement + Stilt + 19 Upper Floors	DRILLING METHOD	Rotary	CO-ORDINATES	N	-	BORE END DATE	18/06/2024
JOB CODE	GT-2806	FLUSHING MEDIUM	Bentonite		E	-	TOTAL DRILL DAYS	2

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min.	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	15-30	30-45	SPT Value: N_{80}	SPT Value: N_{60}	Sample Details: Depth	Type	RL (m)	Layer Data: Legend	No	Depth	Geotechnical Description
11	18/06/2024	09	30	SC	-	-	1	1	2	-	3	10.50	SS	-10.5				
		To										10.95						Grey,Black,Moist,Very Soft,**Silty CLAY (CH)** Clays of High Plasticity
		09	32															
12							10	24	SPT Hammer Rebound	-	>100	12.00	SS	-12.0		L3	12.0	
		10	00									12.30			+ + + + + + + + +	L4	12.5	Very Dense,**Completely Weathered Rock - Grade W5 Rock Formation**
		To		SC	64	41									+ + + + + + + + +			Medium to Dark Grey,Low to Medium Fractures,Discoloured @ Fractures,**Moderately Weathered Rock - Grade W3 Formation**
13		12	00												+ + + + + + + + +	L5	13.5	Hypersthene Granitic Rock Formation
							-	-	-	-	-	13.50	CS	-13.5	+ + + + + + + + +			
14		Total Drilling Time 2Hrs 10min		DB	75	75									+ + + + + + + + +			Medium to Dark Grey,Medium to Coarse Grain Structure,Fractiures @ Times,**Slightly Weathered Rock - Grade W2 Formation** Hypersthene Granitic Rock Formation
15							-	-	-	-	-	15.00	CS	-15.0				
		15	45															
		To		DB	100	100												
		16	20															
16							-	-	-	-	-	16.00	CS	-16.0		L6	16.0	
17																		
18																		
19																		
20																		

CS - Core Sample	DS - Disturbed Sample	LOGGED	S. Stephenraj	PROJECT SITE DETAILS	REMARKS
SS - Split Spoon Sample	SC - Soil Cutter	DATE	18/06/2024	GROUND LEVEL (m) 0.00	
UDS- Undisturbed Sample	TCB - Tungsten Carbide Bit	CHECKED	V. Aravindhan	WATER TABLE (m) 1.00	
WS - Wash Sample	DB - Diamond Bit	DATE	21/06/2024	CASING DEPTH (m) 0.00	

Borehole terminated at 16 m depth below E.G.L

FIG.2.4 Sub Soil Profile at BH-04 Location

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No.	BH-05
SHEET	1 OF 2

PROJECT NAME	PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING	DIA OF BORE HOLE	150mm ✓ / NX

LOCATION	Perungudi, Chennai	MACHINE No.	CR-06	Free Fall Energy (%)	60	BORE START DATE	19/06/2024
STRUCTURE	2 Basement + Stilt + 19 Upper Floors	DRILLING METHOD	Rotary	CO-ORDINATES	-	BORE END DATE	20/06/2024
JOB CODE	GT-2806	FLUSHING MEDIUM	Bentonite	E	-	TOTAL DRILL DAYS	2

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min.	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	15-30	30-45	SPT Value: N_{80}	SPT Value: N_{60}	Sample Details: Depth	Type	RL (m)	Layer Data: Legend	No	Depth	Geotechnical Description
1		14	00															
		To		SC	-	-												Filled Up Building Debris & Soil Mixture
		14	10				10	2	6	-	8	1.25	SS	-1.25				
		14	20									1.70				L1	1.8	
		To		SC	-	-												
2		14	21				5	3	2	-	5	2.00	SS	-2.0				
		14	30									2.45						Brown Grey,Moist,Medium Stiff,**Silty CLAY (CH)** Clays of High Plasticity
		To		SC	-	-												
		14	31															
3		14	40				45 Cm Penet for 1 Blow			-	0	3.00	SS	-3.0		L2	3.0	
		To		SC	-	-						3.45						
		14	41				-	-	-	-	-	3.50	*UDS	-3.5				
		14	53															
		To		SC	-	-												
4	19/06/2024	14	54				45 Cm Penet for 0 Blow			-	0	4.00	SS	-4.0				
		15	15									4.45						
		To		SC	-	-												
		15	16															
5							45 Cm Penet for 0 Blow			-	0	5.00	SS	-5.0				
		15	30									5.45						
		To		SC	-	-												
		15	31															
6							45 Cm Penet for 0 Blow			-	0	6.00	SS	-6.0				
		15	45									6.45						
		To		SC	-	-												Grey,Black,Moist,Very Soft,**Silty CLAY (CH)** Clays of High Plasticity
		15	46															
7		16	00				-	-	-	-	-	7.00	UDS	-7.0				
		To		SC	-	-												
		16	01				45 Cm Penet for 0 Blow			-	0	7.50	SS	-7.5				
8		16	15									7.95						
		To		SC	-	-												
		16	16															
9							45 Cm Penet for 0 Blow			-	0	9.00	SS	-9.0				
												9.45						
	20/06/2024	09	00															
		To		SC	-	-												
10		09	01															

CS - Core Sample	DS - Disturbed Sample	LOGGED	S. Stephenraj	PROJECT SITE DETAILS		REMARKS
SS - Split Spoon Sample	SC - Soil Cutter	DATE	19/06/2024	GROUND LEVEL (m)	0.00	(*F)-Sample Failed
UDS- Undisturbed Sample	TCB - Tungsten Carbide Bit	CHECKED	V. Aravindhan	WATER TABLE (m)	0.50	
WS - Wash Sample	DB - Diamond Bit	DATE	21/06/2024	CASING DEPTH (m)	0.00	

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No.	BH-05
SHEET	2 OF 2

PROJECT NAME	PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING	DIA OF BORE HOLE	150mm ✓ / NX ✓

LOCATION	Perungudi, Chennai	MACHINE No.	CR-06	Free Fall Energy (%)	60	BORE START DATE	19/06/2024
STRUCTURE	2 Basement + Stilt + 19 Upper Floors	DRILLING METHOD	Rotary	CO-ORDINATES	N -	BORE END DATE	20/06/2024
JOB CODE	GT-2806	FLUSHING MEDIUM	Bentonite		E -	TOTAL DRILL DAYS	2

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min.	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	15-30	30-45	SPT Value: N_{80}	SPT Value: N_{60}	Sample Details: Depth	Type	RL (m)	Layer Data: Legend	No	Depth	Geotechnical Description
11	20/06/2024	09	20	SC	-	-	45 Cm Penet for 1 Blow			-	0	10.50	SS	-10.5				
		To										10.95						Grey,Black,Moist,Very Soft,**Silty CLAY (CH)** Clays of High Plasticity
12		09	21				1	1	SPT Hammer Rebound	-	>100	12.00	SS	-12.0				
												12.30				L3	12.3	
		10	00												+ + +			
13		To		DB	68	68									+ + +			
		13	00												+ + +			
							-	-	-	-	-	13.50	CS	-13.5	+ + +			Medium to Dark Grey,Medium to Coarse Grain Structure,Fractiures @ Times,**Slightly Weathered Rock - Grade W2 Formation** Hypersthene Granitic Rock Formation
14		14	00												+ + +			
		To		DB	100	100									+ + +			
		16	00												+ + +			
15							-	-	-	-	-	15.00	CS	-15.0	+ + +	L4	15.0	
16																		
17																		
18																		
19																		
20																		

CS - Core Sample	DS - Disturbed Sample	LOGGED	S. Stephenraj	PROJECT SITE DETAILS		REMARKS
SS - Split Spoon Sample	SC - Soil Cutter	DATE	20/06/2024	GROUND LEVEL (m)	0.00	
UDS- Undisturbed Sample	TCB - Tungsten Carbide Bit	CHECKED	V. Aravindhan	WATER TABLE (m)	0.50	
WS - Wash Sample	DB - Diamond Bit	DATE	21/06/2024	CASING DEPTH (m)	0.00	

Borehole terminated at 15 m depth below E.G.L

FIG.2.5 Sub Soil Profile at BH-05 Location

ANNEXURE-II

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No. 01
PAGE No. 01

PROJECT NAME: IYRA DEVELOPERS - PERUNGUDI

DIA OF BORE HOLE: 150mm ✓ / 100mm

LOCATION | MACHINE No. | CHAINAGE (m) | BORE START DATE: 06/06/2024
STRUCTURE | DRILLING METHOD: Rotary | CO-ORDINATES N | BORE END DATE: 08/06/2024
JOB CODE | FLUSHING MEDIUM: Bentonite | E | TOTAL DRILLING DAYS

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	15-30	30-45	SPT 'N' Value	Sample Details: Depth	No.	Type	Layer Data: Depth (m)	Geotechnical Description
1	06/06/2024	15	30	SOIL CUTTER			12	12	9	21	1.25	1	SS.	1.25	Greyish Filled up Soil
		15	34												
2		15	52				2	3	3	6	2.0	2	S.S.	2.0	Greyish Medium Stiff Clay
		15	53												
3		16	10				45 cms Penetration for 1 blow				3.0	3	SS.	3.0	Brown, Gray Very Soft Clay
		16	11												
4		16	32				45 cms for 1 blow				4.0	4	S.S.	4.0	Greyish Very Soft Clay
		16	33												
5		17	00				45 cms 1 blow				5.0	5	S.S.	5.0	—do—
		17	01												
6		09	50				45 cms For Self Hammer weight				6.0	6	SS	6.0	Grey, Black Very Soft Clay
		09	01												
7		09	20										VANE failed	7.0	
		09	21												
		09	45				45 cms Penetration				7.80	7	S.S	7.80	—do—
8		09	46				For Self Hammer weight								
9	07/06/2024	10	00				1	1	1	2	9.0	8	S.S	9.0	Blackish Clay with Stones
		10	01												
0															

CS - Core Sample | DS - Disturbed Sample | SUPERVISOR NAME: S. STEPHEN RAJ
SS - Split Spoon Sample | SC - Soil Cutter | SIGNATURE
UDS - Undisturbed Sample | TCB - Tungsten Carbide Bit | DATE: 07/06/2024
WS - Wash Sample | DB - Diamond Bit | CLIENT IN-CHARGE

PROJECT SITE DETAILS
GROUND LEVEL (m)
WATER TABLE (m)
CASING DEPTH (m)

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No.	01
PAGE No.	02
DIA OF BORE HOLE	150mm ✓ / 100mm
BORE START DATE	06/06/2024
BORE END DATE	08/06/2024
TOTAL DRILLING DAYS	

PROJECT NAME	IYRA DEVELOPERS – PERUNGUDI						
LOCATION		MACHINE No.		CHAINAGE (m)			
STRUCTURE		DRILLING METHOD	Rotary	CO-ORDINATES	N		
JOB CODE		FLUSHING MEDIUM	Bentonite		E		

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	SPT Details: Blows/cm. 15-30	SPT Details: Blows/cm. 30-45	SPT 'N' Value	Sample Details: Depth	Sample Details: No.	Sample Details: Type	Layer Data: Depth (m)	Geotechnical Description
1	06/06/2024	10	25	SC			8CM Soils	Refusal				9	SS.	10.5	Grey, Highly weathered Rock
		10	55												
2		11	45	DB	87	40						10	CS	12.0	Grey, Black Hard Rock
		13	00												
3															
4		14	00	DB	55	45						11	CS	13.50	—DO—
		17	00												
5	07/06/2024	09	00	DB	87	73						12	C.S.	15.0	—DO—
		12	00												
6															
	Bore Hole Terminated at 15.0M Below the Ground Lvl														
7															
8															
9															
0															

CS - Core Sample	DS - Disturbed Sample.	SUPERVISOR NAME	S. STEPHEN RAJ	PROJECT SITE DETAILS	
SS - Split Spoon Sample	SC - Soil Cutter	SIGNATURE		GROUND LEVEL (m)	
UDS - Undisturbed Sample	TCB - Tungsten Carbide Bit	DATE	08/06/2024	WATER TABLE (m)	
WS - Wash Sample	DB - Diamond Bit	CLIENT IN-CHARGE		CASING DEPTH (m)	

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No. 02
PAGE No. 01

PROJECT NAME: IYRA DEVELOPERS - PERUNGUDI
DIA OF BORE HOLE: 150mm ✓ / 100mm
LOCATION:
MACHINE No.:
CHAINAGE (m):
BORE START DATE: 10/06/2024
STRUCTURE:
DRILLING METHOD: Rotary
CO-ORDINATES: N / E
BORE END DATE:
JOB CODE:
FLUSHING MEDIUM: Bentonite
TOTAL DRILLING DAYS:

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	SPT Details: Blows/cm. 15-30	SPT Details: Blows/cm. 30-45	SPT 'N' Value	Sample Details: Depth	Sample Details: No.	Sample Details: Type	Layer Data: Depth (m)	Geotechnical Description
1	10/06/2024	10	30	SOIL CUTTER			18	10	18	28	1.25	1	SPLIT SPOON SAMPLER	1.25	Filled upsoil
		10	35												
2		10	45				2	2	4	6	2.0	2		2.0	Brown, Grey Medium Stiff clay
		10	46												
3		11	00				45 CMS FOR 1 blow					3		3.0	Brown, Grey very soft clay
		11	01												
4		11	15				45 CMS FOR 1 blow					4		4.0	-DO-
		11	16												
5		11	30				45 CMS FOR 1 blow					5		5.0	Grey, Black very soft clay
		11	31												
6		11	45				45 CMS FOR 1 blow					6		6.0	-DO-
		11	46												
7		12	00				45 CMS / blow					7		7.0	Black very soft clay
		12	01												
8															
9		12	30				45 CMS FOR 1 blow					8		9.0	-DO-
		12	31												
10		14	00				7 CMS / 50 blows					9		10.0	Greyish weathered Rock
		14	10												

CS - Core Sample
SS - Split Spoon Sample
UDS - Undisturbed Sample
WS - Wash Sample

DS - Disturbed Sample.
SC - Soil Cutter
TCB - Tungsten Carbide Bit
DB - Diamond Bit

SUPERVISOR NAME: S. STEPHEN RAJ
SIGNATURE: S.S
DATE: 10/06/2024
CLIENT IN-CHARGE:

PROJECT SITE DETAILS
GROUND LEVEL (m):
WATER TABLE (m):
CASING DEPTH (m):

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No.	02
PAGE No.	02
DIA OF BORE HOLE	150mm ✓ / 100mm
BORE START DATE	10/06/2024
BORE END DATE	11/06/2024
TOTAL DRILLING DAYS	

PROJECT NAME	IYRA DEVELOPERS – PERUNGUDI						
LOCATION		MACHINE No.		CHAINAGE (m)			
STRUCTURE		DRILLING METHOD	Rotary	CO-ORDINATES	N		
JOB CODE		FLUSHING MEDIUM	Bentonite		E		

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	SPT Details: Blows/cm. 15-30	SPT Details: Blows/cm. 30-45	SPT 'N' Value	Sample Details: Depth	Sample Details: No.	Sample Details: Type	Layer Data: Depth (m)	Geotechnical Description
1	11/06/2024	09	00	DB	64	28					11.50	10	C.S.	11.50	Grayish Hard Rock
		12	00												
		14	00	DB	85	45					12.50	11	CS	12.50	-do-
		16	00												
5	Bore Hole Terminated at 12.50m Below the Ground level														
6															
7															
8															
9															
0															

CS - Core Sample	DS - Disturbed Sample.	SUPERVISOR NAME	S. STEPHEN RAJ	PROJECT SITE DETAILS	
SS - Split Spoon Sample	SC - Soil Cutter	SIGNATURE		GROUND LEVEL (m)	
UDS-Undisturbed Sample	TCB - Tungsten Carbide Bit	DATE	11/06/2024	WATER TABLE (m)	
WS - Wash Sample	DB - Diamond Bit	CLIENT IN-CHARGE		CASING DEPTH (m)	

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No. 03
PAGE No. V

PROJECT NAME: IYRA DEVELOPERS - PERUNGUDI
DIA OF BORE HOLE: 150mm / 100mm

LOCATION | MACHINE No. | CHAINAGE (m) | BORE START DATE: 12/06/2024
STRUCTURE | DRILLING METHOD: Rotary | CO-ORDINATES N | BORE END DATE: 15/06/2024
JOB CODE | FLUSHING MEDIUM: Bentonite | CO-ORDINATES E | TOTAL DRILLING DAYS

Depth Below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	Blows/cm. 15-30	Blows/cm. 30-45	SPT 'N' Value	Sample Details: Depth	No.	Type	Layer Data: Depth (m)	Geotechnical Description
1	12/06/2024	15	30	SOIL CUTTER			10	12	3	15	1.25	1	SPLIT SPOON SAMPLE	1.25	Filled up soil
		15	40												
2		15	50				0	1	1	2	2.0	2		2.0	Brown, Grey Soft Clay
		15	51												
3		16	00				45cms for blow					3		3.0	Grey, Brown Very soft clay
		16	02												
4		16	30				45cms for blow					4		4.0	-DO-
		16	31												
5		09	00				45cms for blow					5		5.0	Grey, Black Very soft clay
		09	01												
6		09	30				45cms for blow					6		6.0	-DO-
		09	31												
7		10	00				45cms for blow					7		7.50	-DO-
		10	01												
8	13/06/2024	10	30				45cms for blow					8		9.0	-DO-
		10	31												
9															
0															

CS - Core Sample | DS - Disturbed Sample
SS - Split Spoon Sample | SC - Soil Cutter
UDS-Undisturbed Sample | TCB - Tungsten Carbide Bit
WS - Wash Sample | DB - Diamond Bit

SUPERVISOR NAME: S STEPHENRAJ
SIGNATURE
DATE: 13/06/2024
CLIENT IN-CHARGE

PROJECT SITE DETAILS
GROUND LEVEL (m)
WATER TABLE (m)
CASING DEPTH (m)

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No.	03
PAGE No.	02
DIA OF BORE HOLE	150mm / 100mm —
BORE START DATE	12/06/2024
BORE END DATE	16/06/2024
TOTAL DRILLING DAYS	

PROJECT NAME	IYRA DEVELOPERS – PERUNGUDI						
LOCATION		MACHINE No.		CHAINAGE (m)			
STRUCTURE		DRILLING METHOD	Rotary	CO-ORDINATES	N		
JOB CODE		FLUSHING MEDIUM	Bentonite		E		

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	SPT Details: Blows/cm. 15-30	SPT Details: Blows/cm. 30-45	SPT 'N' Value	Sample Details: Depth	Sample Details: No.	Sample Details: Type	Layer Data: Depth (m)	Geotechnical Description
1	15/06/2024	09	00	SC			Hammer Rebound							10.50	Greyish Weathered Rock
		09	10				No Penetration								
							N > 100								
2		10	00	DB	74	27						10	C.S	12.0	Greyish Hard Rock
		10	13												
3												11	C.S	13.50	-DO-
		14	00	DB	70	70									
4		17	00												
															Bore Hole Terminated at 13.50M Below the Ground Level
6															
7															
8															
9															
0															

CS - Core Sample	DS - Disturbed Sample.	SUPERVISOR NAME	S. STEPHEN RAJ	PROJECT SITE DETAILS	
SS - Split Spoon Sample	SC - Soil Cutter	SIGNATURE		GROUND LEVEL (m)	
UDS-Undisturbed Sample	TCB - Tungsten Carbide Bit	DATE	16/06/2024	WATER TABLE (m)	
WS - Wash Sample	DB - Diamond Bit	CLIENT IN-CHARGE		CASING DEPTH (m)	

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No. 04
PAGE No. 01

PROJECT NAME: IYRA DEVELOPERS - PERUNGUDI
DIA OF BORE HOLE: 150mm ✓ / 100mm
LOCATION:
MACHINE No.:
CHAINAGE (m):
BORE START DATE: 17/06/2024
STRUCTURE:
DRILLING METHOD: Rotary
CO-ORDINATES: N / E
BORE END DATE: 18/06/2024
JOB CODE:
FLUSHING MEDIUM: Bentonite
TOTAL DRILLING DAYS:

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	SPT Details: Blows/cm. 15-30	SPT Details: Blows/cm. 30-45	SPT 'N' Value	Sample Details: Depth	Sample Details: No.	Sample Details: Type	Layer Data: Depth (m)	Layer Data: Geotechnical Description
1	17/06/2024	15	00	SOIL CUTTER			10	12	8	20	1.25	1	S.S	1.25	Filled up soil
		15	10												
2		15	25				4	5	7	12	2.0	2	S.S	2.0	Brown, Greyish Medium stiff clay
		15	26												
3		15	45				45 cms for 1 blow					3	S.S	3.0	Brown, Grey very Soft clay
		15	46												
		15	55				UDS failed					UDS		3.50	-DO-
4		15	56												
		16	00				45 cms for its own Hammer weight					4	S.S	4.0	-DO-
		16	01												
5		16	20				45 cms Penetration For its own Hammer weight					5	S.S.	5.0	Greyish Very Soft clay
		16	21												
6		16	40												
		16	41				45 cms Penetration For its own Hammer weight					6	S.S.	6.0	-DO-
7		16	50												
		16	51									Failed	UDS	7.0	-DO-
8		17	15												
		17	16				45 cms for its own Hammer weight					8	SS	8.50	Blackish Very Soft clay
9															
							45 cms for its own Hammer weight					9	S.S	9.0	-DO-
0		17	31												

CS - Core Sample	DS - Disturbed Sample.	SUPERVISOR NAME	S. STEPHENRAJ	PROJECT SITE DETAILS	
SS - Split Spoon Sample	SC - Soil Cutter	SIGNATURE		GROUND LEVEL (m)	
UDS-Undisturbed Sample	TCB - Tungsten Carbide Bit	DATE	17/06/2024	WATER TABLE (m)	
WS - Wash Sample	DB - Diamond Bit	CLIENT IN-CHARGE		CASING DEPTH (m)	

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No. 04
PAGE No. 02

PROJECT NAME: IYRA DEVELOPERS – PERUNGUDI
DIA OF BORE HOLE: 150mm ✓ / 200mm

LOCATION		MACHINE No.		CHAINAGE (m)		BORE START DATE	17/06/2021
STRUCTURE		DRILLING METHOD	Rotary	CO-ORDINATES	N	BORE END DATE	18/06/2021
JOB CODE		FLUSHING MEDIUM	Bentonite		E	TOTAL DRILLING DAYS	

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	SPT Details: Blows/cm. 15-30	SPT Details: Blows/cm. 30-45	SPT 'N' Value	Sample Details: Depth	Sample Details: No.	Sample Details: Type	Layer Data: Depth (m)	Layer Data: Geotechnical Description
1		09	00	SC			1	1	1	2	10.50	10	S.S	10.50	Blackish Soft clay
		09	02												
2		09	30	SC			10	24	26	Hard		11	S.S.	12.0	Greyish Weathered Rock
		09	32				Refusal ND 100								
3															
4	18/06/2021	10	00	DB	64	41						12	C.S	13.50	Greyish Hard Rock
		12	00												
												13	CS	15.0	— Do —
5		12	20	DB	75	75									
		13	00												
		14	00												
		15	30												
6		15	45	DB	100	100						14	CS	16.0	— Do —
		16	20												
7	Bore hole Terminated at 16.0 m Below the Ground level.														
8															
9															
0															

CS - Core Sample	DS - Disturbed Sample	SUPERVISOR NAME	S. STEPHEN RAJ	PROJECT SITE DETAILS	
SS - Split Spoon Sample	SC - Soil Cutter	SIGNATURE		GROUND LEVEL (m)	
UDS-Undisturbed Sample	TCB - Tungsten Carbide Bit	DATE	18/06/2021	WATER TABLE (m)	
WS - Wash Sample	DB - Diamond Bit	CLIENT IN-CHARGE		CASING DEPTH (m)	

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No. 05
PAGE No. 01

PROJECT NAME: IYRA DEVELOPERS — PERUNGUDI

DIA OF BORE HOLE: 150mm ✓ / 100mm

LOCATION		MACHINE No.		CHAINAGE (m)		BORE START DATE	19/06/2021
STRUCTURE		DRILLING METHOD	Rotary	CO-ORDINATES	N	BORE END DATE	20/06/2021
JOB CODE		FLUSHING MEDIUM	Bentonite		E	TOTAL DRILLING DAYS	

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	SPT Details: Blows/cm. 15-30	SPT Details: Blows/cm. 30-45	SPT 'N' Value	Sample Details: Depth	Sample Details: No.	Sample Details: Type	Layer Data: Depth (m)	Geotechnical Description
1		14	00				10	2	6	8	1.25	1	S.S	1.25	Filled up soil
		14	20												
2		14	20				5	3	2	5	2.0	2	S.S	2.0	Brown, Grey Medium Stiff Clay
		14	21												
3		14	30				45 CMS for 100				3.0	3	S.S.	3.0	Brown, Grey Very Soft Clay
		14	31												
4		14	50				UDS failed								
		14	51												
5	19/06/21	14	53				45 CMS Penetration for its own Hammer weight					4	SS.	4.0	Grey Black Very Soft Clay
		14	54												
6		15	15				45 CMS for its own Hammer weight					5	SS	5.0	-DO-
		15	16												
7		15	30				45 CMS Penetration for its own weight					6	S.S.	6.0	-DO-
		15	31												
8		15	45									7	UDS	7.0	-DO-
		15	46												
9		16	00				45 CMS for its own Hammer weight					8	S.S.	8.0	-DO-
		16	01												
10		16	15				45 CMS for its own Hammer weight					9	S.S.	9.0	-DO-
		16	16												

CS - Core Sample
SS - Split Spoon Sample
UDS-Undisturbed Sample
WS - Wash Sample

DS - Disturbed Sample
SC - Soil Cutter
TCB - Tungsten Carbide Bit
DB - Diamond Bit

SUPERVISOR NAME: S. STEPHEN RMS
SIGNATURE: S.S
DATE: 19/06/2021
CLIENT IN-CHARGE:

PROJECT SITE DETAILS
GROUND LEVEL (m):
WATER TABLE (m):
CASING DEPTH (m):

GEOMARINE
THE SPIRIT OF ENGINEERING

SITE INVESTIGATION RECORD

BORE HOLE No. 05
PAGE No. 02

PROJECT NAME: IYRA DEVELOPERS – PERUNGUDI
DIA OF BORE HOLE: 150mm ✓ / 100mm
LOCATION:
MACHINE No.:
CHAINAGE (m):
STRUCTURE:
DRILLING METHOD: Rotary
CO-ORDINATES: N / E
JOB CODE:
FLUSHING MEDIUM: Bentonite
BORE START DATE: 19/06/2024
BORE END DATE: 20/06/2024
TOTAL DRILLING DAYS:

Depth below E.G.L. (m)	Drilling progress per metre: Date	Time: Hr.	Time: Min	Type of Drill Bit (SC / TCB / DB)	Core Details: Total Core Recovery %	Core Details: R.Q.D %	SPT Details: Blows/cm. 0-15	SPT Details: Blows/cm. 15-30	SPT Details: Blows/cm. 30-45	SPT 'N' Value	Sample Details: Depth	Sample Details: No.	Sample Details: Type	Layer Data: Depth (m)	Layer Data: Geotechnical Description
1		09	00	SC			45cms/blow					10	SS.	10.50	Blackish Kayssathclay
		09	01												
2		09	20	SC			1	1	[illegible]						
		09	21				Rebound NO penetration						S.S	12.0	-DO-
														12.30	
3		10	00	DB	68	68									Hard Rock
		13	00										C-S	13.50	-DO-
4															
		14	00												
5		16	00	DB	100	100							C.S.	15.0	-DO-
6															
															Bore hole Terminated at 15.0M Below The Ground Level
7															
8															
9															
0															

CS - Core Sample
SS - Split Spoon Sample
UDS-Undisturbed Sample
WS - Wash Sample
DS - Disturbed Sample
SC - Soil Cutter
TCB - Tungsten Carbide Bit
DB - Diamond Bit

SUPERVISOR NAME: S. STEPHEN RAJ
SIGNATURE:
DATE: 20/06/2024
CLIENT IN-CHARGE:

PROJECT SITE DETAILS
GROUND LEVEL (m):
WATER TABLE (m):
CASING DEPTH (m):

GEO MARINE
THE SPIRIT OF ENGINEERING





GEO MARINE
THE SPIRIT OF ENGINEERING

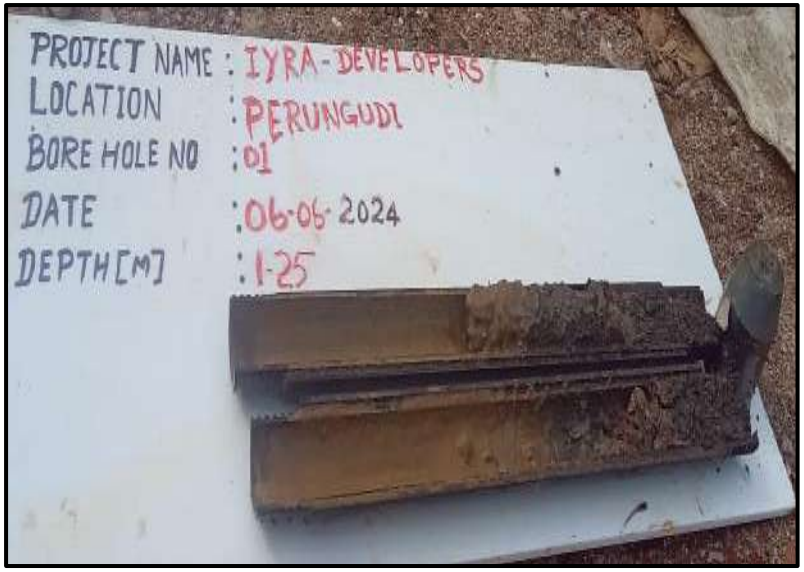


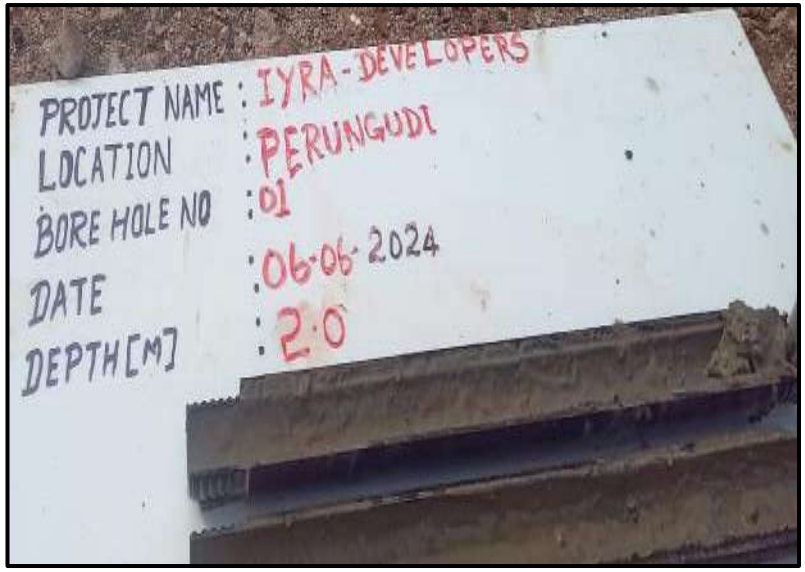


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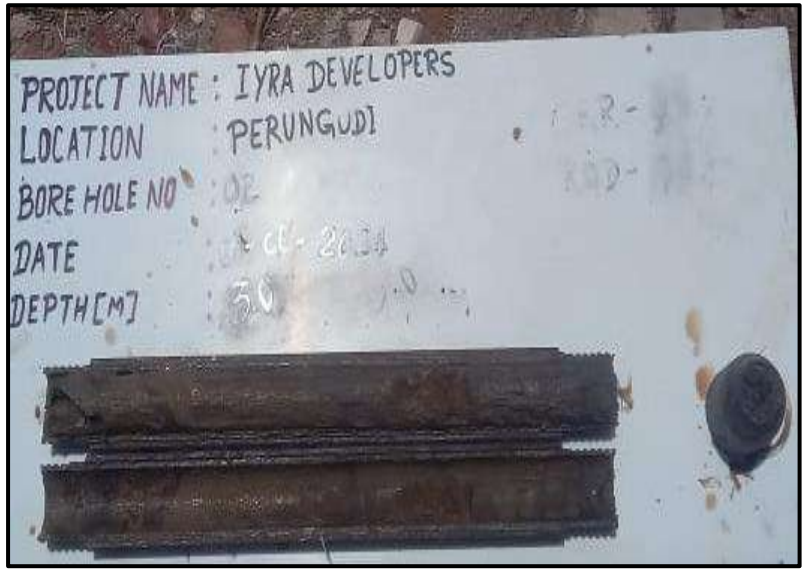




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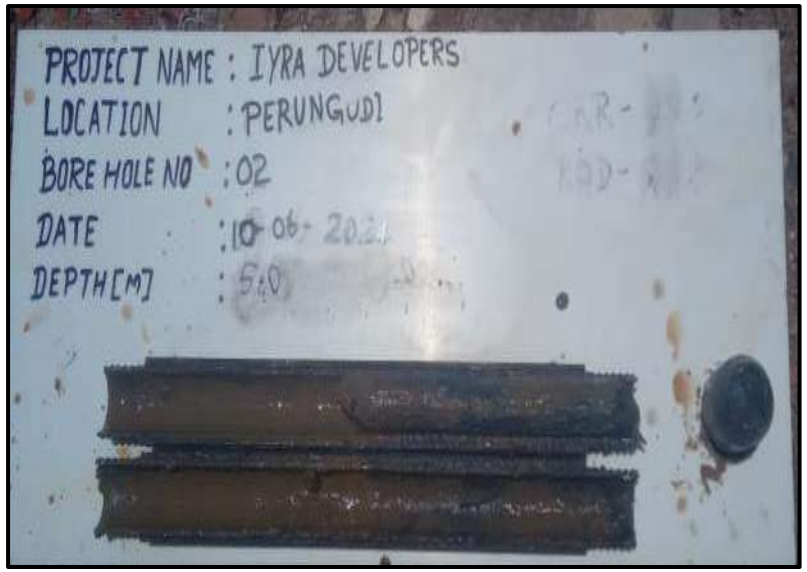




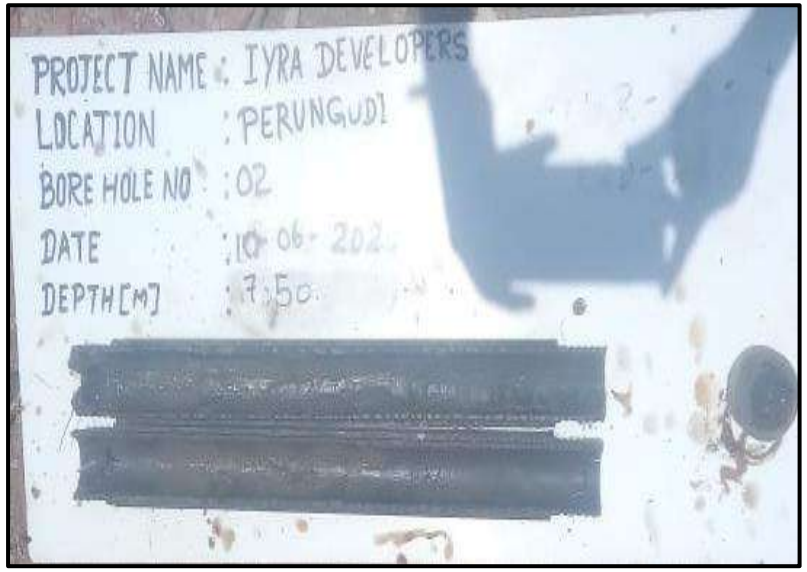




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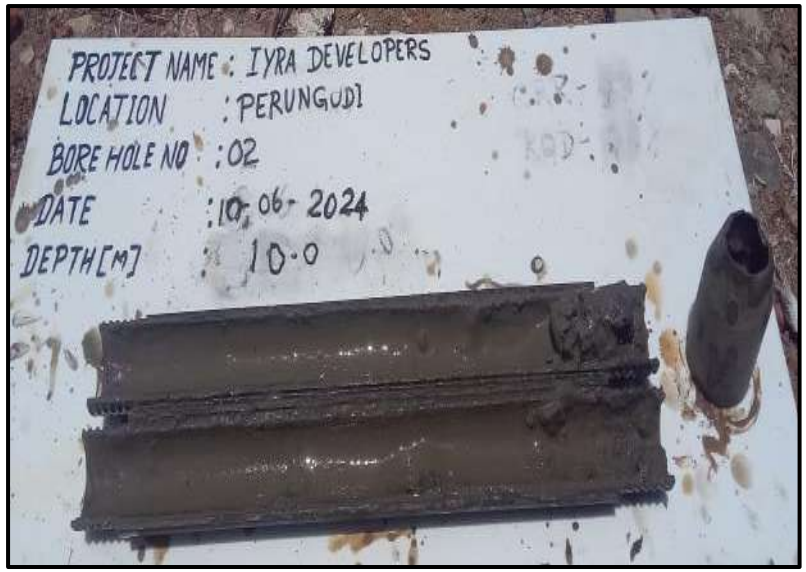








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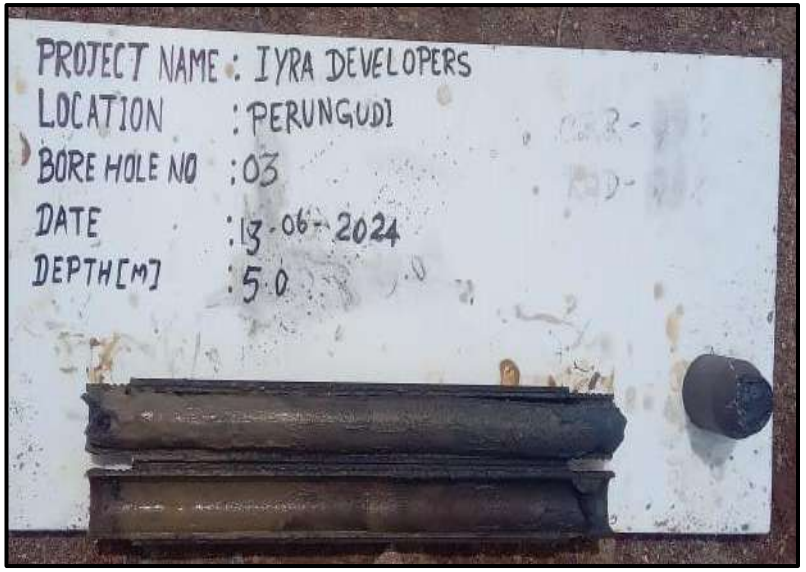






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PROJECT NAME : IYRA DEVELOPERS
LOCATION : PERUNGUDI
BORE HOLE NO : 03
DATE : 13-06-2024
DEPTH[M] : 9.0


PROJECT NAME : IYRA DEVELOPERS
LOCATION : PERUNGUDI
BORE HOLE NO : 04
DATE : 17-06-2024
DEPTH[M] : 1.25


PROJECT NAME : IYRA DEVELOPERS
LOCATION : PERUNGUDI
BORE HOLE NO : 04
DATE : 17-06-2024
DEPTH[M] : 2.0


PROJECT NAME : IYRA DEVELOPERS
LOCATION : PERUNGUDI
BORE HOLE NO : 04
DATE : 17-06-2024
DEPTH[M] : 3.0

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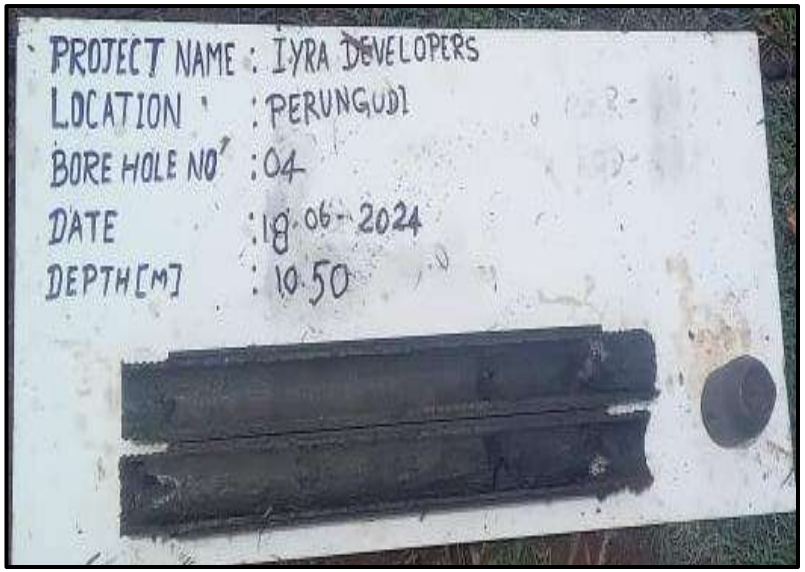


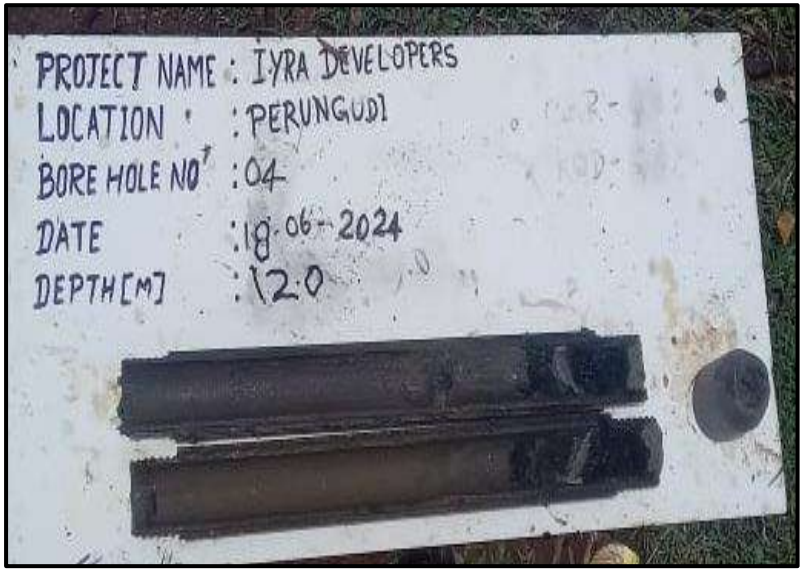




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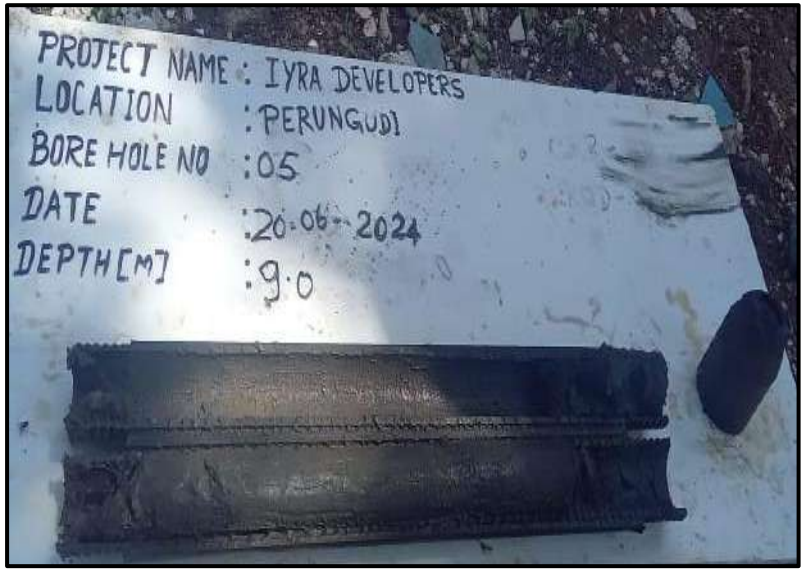







PROJECT NAME : IYRA DEVELOPERS
LOCATION : PERUNGUDI
BORE HOLE NO : 05
DATE : 19-06-2024
DEPTH [M] : 6.0


PROJECT NAME : IYRA DEVELOPERS
LOCATION : PERUNGUDI
BORE HOLE NO : 05
DATE : 19-06-2024
DEPTH [M] : 7.50


PROJECT NAME : IYRA DEVELOPERS
LOCATION : PERUNGUDI
BORE HOLE NO : 05
DATE : 20-06-2024
DEPTH [M] : 9.0


PROJECT NAME : IYRA DEVELOPERS
LOCATION : PERUNGUDI
BORE HOLE NO : 05
DATE : 20-06-2024
DEPTH [M] : 10.50

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our services doesn't just end there

Buying & Selling Services

Property Buying Assistance, Property Selling Support, Market Price Analysis, Owner Outreach and Negotiation.

Legal & Documentation Services

Certified EC, Patta, legal opinions, property verification, due diligence, litigation solutions, and legal heir certificates.

Property Development & Approvals

Building plan approvals, construction, layout and sub-division approvals, zone conversion, and occupancy certification.

NRI & Investment Services

Escrow Services, Rentals, Litigation Solutions, Property Valuation and Property Management

Compliance & Special Services

Demolition, Vaasthu checks, regularization of unauthorized buildings, and office space solutions.



empowering your real estate decisions with smart tools

Property Valuation & Cost Estimation

Guideline Value, Apartment Composite Value, Stamp Duty & Registration Fees Calculator, Building Value Calculator, Capital Gains Calculator, Area Unit Converter, Length Unit Converter

Ownership, Compliance & Legal Verification

Encumbrance Certificate (EC) Search, Find Your SRO, Temple Property Check, WAQF Property Check, View Patta/Chitta, View FMB, Patta Analyzer, EC Analyzer

Zoning & Land Use Analysis

Land Use Zone Finder, CRZ Zone Check, Aquifer Zone Check, CBA Check, EWS Check, Road Width Check, Proposed Road Widening Check, FSI Calculator

Property Documentation & Workflow Tools

Forms & Templates, Document Generator, Document Translation, Dictionary

Vastu & Property Management Tools

Home Vastu Shastra, Plot Vastu Shastra, Property Management

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