Verified RealEstate™

Your trusted partner for buying, selling, and managing property, ensuring hassle-free service with 100% transparency.

3/350/2 Mettukuppam,
OMR Thoraipakkam,
Chennai, India

hello@verified.realestate
+91 9996 12 9996

Official Property Record

Digitally Verified Record - Powered by Verified RealEstate™



VELTECH CONSULTING ENGINEERS

No.10, Elumalainaicken Street, Selaiyur, Chennai-73.
Contact No: 9962022065
Email:veltechconsultingengineers@gmail.com

An ISO 9001:2015 Certified

GEOTECHNICAL INVESTIGATION REPORT

PROJECT: GEOTECHNICAL INVESTIGATION REPORT FOR THE PROPOSED CONSTRUCTION OF (STILT+3) RESIDENTIAL BUILDING AT T.S.NO. 38/1, WARD J, BLOCK 7, D.NO 16/42, LAKSHMIPURAM EAST STREET, DEVAKOTAI - 630 302.

VELTECH CONSULTING ENGINEERS CHENNAI 600073

CLIENT : M/s. Eco green Housing and Mr. KT.Lakshmanan.,

REPORT NO	DATE	REVISION-0
VCE/23/GIR–467	27.04.2024	Submission for Design of Foundation

27.04.2024

To

CLIENT : M/s. Eco green Housing and
Mr. KT.Lakshmanan.,

SUB: GEOTECHNICAL INVESTIGATION REPORT FOR THE PROPOSED CONSTRUCTION OF (STILT+3) RESIDENTIAL BUILDING AT T.S.NO.38/1, WARD J, BLOCK 7, D.NO 16/42, LAKSHMIPURAM EAST STREET, DEVAKOTAI - 630 302.

Dear Sir,

We are glad to submit two copy of our final Geotechnical Investigation Report for the above captioned project.

We look forward to hearing from you at your earliest convenience regarding this report.

We are pleased to work for you in this project. We assure our continual services to our best.

Yours Truly,

FOR VELTECH CONSULTING ENGINEERS

VELTECH CONSULTING ENGINEERS CHENNAI 600073

Er. R.VENKATA KRISHNAIAH.M.E.,

Geotechnical Consultant

GEOTECHNICAL INVESTIGATION REPORT

VELTECH CONSULTING ENGINEERS

CLIENT: M/s.Eco green Housing and Mr.KT Lakshmanan.,

Project: (Stilt+3) Residential Building

TABLE OF CONTENT	PAGE NO
INTRODUCTION	2
SCOPE OF WORK	2
SITE DESCRIPTION	2
EXPLORATION TECHNIQUES	3
LABORATORY TESTING	4
SUBSURFACE SOIL DESCRIPTION	4
GROUND WATER	5
FOUNDATION RECOMMENDATIONS	5
FOUNDATION CONSIDERATIONS	6
GENERAL CONSIDERATION	7

Appendix - A

- Borelog Sheets

Appendix - B

- Laboratory Test Results

Appendix - C

- Photos

VELTECH CONSULTING ENGINEERS CHENNAI 600073

INTRODUCTION

This report presents the geotechnical investigations results carried out by Veltech Consulting Engineers, for the proposed construction of (Stilt+3) Residential Building At T.S.No.38/1, Ward J, Block 7, D.No 16/42, Lakshmipuram East Street, Devakotai - 630 302.

This work was authorized by the **Client :M/s.Eco green Housing and Mr.KT.Lakshmanan.,**

Standard Penetration Testing for boreholes were drilled at the site up to a maximum depth of 10.0m below existing ground level.

The investigation consists of drilling three boreholes, soil sampling, field and laboratory testing and preparation of a Geotechnical Report for the Proposed Construction of Stilt+3) Residential Building At T.S.No. 38/1, Ward J, Block 7, D.No 16/42, Lakshmipuram East Street, Devakotai - 630 302.

SCOPE OF WORK

The scope of this investigation is to:

- Conducting Standard Penetration Test (SPT) at regular depth intervals.
- Collecting split spoon samples or disturbed soil samples
- Conducting relevant laboratory tests
- Recommend a suitable foundation system and safe bearing pressure at foundation level.

SITE DESCRIPTION

The site for the proposed construction of Stilt+3) Residential Building At T.S.No.38/1, Ward J, Block 7, D.No 16/42, Lakshmipuram East Street, Devakotai - 630 302.

The elevation of site is same from the nearby road level.

VELTECH CONSULTING ENGINEERS CHENNAI 600073

EXPLORATION TECHNIQUES

After the visual inspection of the site, the subsurface investigation was carried out as mentioned below:

Three (3) exploration boreholewas drilled to a maximum depth of 10.0m

BH-1was started on 23.04.2024 and completed on 23.04.2024.

BH-2 & BH-3 was started on 24.04.2024 and completed on 24.04.2024.

Equipment Used

The equipment used for performing the drilling operations is a Calyx Rotary Drill Rig with direct mud circulation technique. The drill mud used was made out of Sodium Bentonite.

Methodology of drilling

In the soil strata, the drilling operations have been carried out using special drill bits and cutters coupled with direct mud circulation.

In-Situ Strength Tests:
Standard Penetration Test:

Standard penetration tests were conducted at the borehole locations, in accordance with IS: 2131. The tests were conducted at every change of strata up to the depth of termination of the borehole as directed by the engineer-in-charge.

Collection of Samples:
Disturbed Soil Samples

The SPT-samples collected were used as disturbed soil samples. These samples were used for visual and physical identification and for conducting laboratory classification tests as per I.S.1498-1970.

VELTECH CONSULTING ENGINEERS CHENNAI 600073

LABORATORY TESTING

All the extracted soil samples were brought to our Laboratory for further examination in accordance with IS: 1498-1970. Selected samples were subjected to the following physical tests.

1. **Moisture Content**
2. **Sieve Analysis (IS: 2720 Part IV — 1985)**
3. **Liquid limit (IS: 2720 Part V — 1985)**
4. **Plastic Limit and Plasticity Index (IS: 2720 Part VI — 1972)**
5. **Differential Free Swell Test**

The laboratory test results are given in Appendix "C".

SUBSURFACE SOIL DESCRIPTION

Based on boreholes information, sub surface soil profile for the proposed construction Of (Stilt+3) Residential Buildingis given below:

BH-1

Depth (m)		Soil Description
From	To	
0.0	1.5	Brownish white high plastic and high swelling clay
1.5	2.8	Brownish grey high plastic and high swelling clay
2.8	4.0	Brownish red clayey gravel sand with silt mixtures
4.0	5.5	Brownish white clayey gravel sand with silt mixtures
5.5	7.5	Brownish white high plastic and high swelling clay
7.5	9.0	Brownish yellow fine sand
9.0	10.0	Brownish yellow weathered rock

VELTECH CONSULTING ENGINEERS CHENNAI 600073

BH-2

Depth (m)		Soil Description
From	To	
0.0	1.0	Filling Soil
1.0	2.7	Brownish grey medium plastic and swelling silty clay
2.7	5.5	Brownish red clayey gravel sand with silt mixtures
5.5	7.0	Brownish yellow high plastic and swelling clay
7.0	8.0	Brownish white clayey fine sand with silt mixtures

BH-3

Depth (m)		Soil Description
From	To	
0.0	1.5	Brownish white medium plastic and medium swelling clay
1.5	2.9	Brownish grey high plastic and high swelling clay
2.9	5.5	Brownish black clayey gravel sand with silt mixtures
5.5	8.0	Brownish white medium plastic and medium swelling silty clay

GROUND WATER

Ground water table wasfound at the depth of 5.0m below the existing ground level at the time of field investigation. However it will fluctuate due to seasonal variations.

FOUNDATION RECOMMENDATIONS

Based on the borehole information and laboratory test results in addition to the nature of structure, the recommendations for the proposed structure are given below.

VELTECH CONSULTING ENGINEERS CHENNAI 600073

SHALLOW FOUNDATION

- Isolated/Strip foundation shall be adopted for the proposed structure.
- Excavate upto the depth of 3.0m and backfill by gravels for 100cm thickness with proper compaction.
- Foundation shall be placed at **2.0m** depth below the existing ground level on a gravel fill of 100cm thickness.
- An allowable bearing pressure of **175 kN/m^2** at the depth of **2.0m upon fill** shall be taken for design.
- Grade beams shall be adopted in order to minimize differential settlements.
- The type of foundation shall be decided by the structural engineer based upon foundation loads and the structural design conditions.
- The probable maximum and differential settlement of the soil under any part of the foundation must be limited to safe and tolerable limits.

FOUNDATION CONSIDERATIONS

A PCC (Plain Cement Concrete) layer of 20-30cm thickness is recommended below the Pile cap/ foundation. Any over excavation in the foundation trenches should be re-filled by plain concrete and any disturbed and loose materials found in the foundation trenches should be removed before placement of P.C.C.

VELTECH CONSULTING ENGINEERS CHENNAI 600073

Excavated material cannot be used as general backfill material. As per general practice the backfill material should not contain more than 15 % fines passing 0.075 mm sieve, retain 40% on 4.75mm size sieve while the maximum size of gravel allowed is 50mm.

Backfilling materials shall be placed in horizontal layers not exceeding 25 cm thickness and each layer shall be compacted to at least 95% of the maximum dry density.

GENERAL CONSIDERATIONS

The recommendations for foundation design and construction are based on the information obtained from the boreholes drilled at site. When foundation construction is underway, the recommendations of this report should be checked through field inspection, to validate the information for use during the construction stage. Any variation in underground conditions revealed by the borehole should be brought to our attention for alternate recommendations, if required.

Yours Truly,
FOR VELTECH CONSULTING ENGINEERS





Er.R.VENKATA KRISHNAIAH.M.E.,
Geotechnical Consultant

VELTECH CONSULTING ENGINEERS

CLIENT : M/s.Eco green Housing and
Mr. KT Lakshmanan.,

Project : (Stilt+3) Residential Building

APPENDIX A

BOREHOLE LOG

VELTECH CONSULTING ENGINEERS * CHENNAI 600073

BOREHOLE LOG

Client	: M/s.Eco green Housing and Mr.KT Lakshmanan	Water Table	: 5.0m
Type of building	: (Stilt+3) Residential Building	Ele . Of G.L	: Nil
Location	: Lakshmipuram East street, Devakottai.	Type Of Boring	: Rotary
B.H. No	: 1	Dia of Boring	: 150mm
Final Depth	: 10.0m	Started on	: 23.04.2024
		Ended on	: 23.04.2024

Depth (m)	GWL	SYMBOL	DESCRIPTION	SPT COUNT 0 -15 cm	15 -30 cm	30 -45 cm	N- Value	Relative Density /Consistency
0.0 – 2.5			Brownish white high plastic and high swelling clay	2	3	4	7	Stiff
			Brownish grey high plastic and high swelling clay	5	6	8	14	Stiff
3.0 – 5.0			Brownish red clayey gravel sand with silt mixtures	40	50/15cm			Very dense
	▼		Brownish white clayey gravel sand with silt mixtures	27	50/15cm			Very dense
5.5 – 7.0			Brownish white high plastic and high swelling clay Ditto	50/15cm penetration				Hard
7.5 – 8.5			Brownish yellow fine sand	50/'5'cm penetration				Very dense
9.0 – 9.5			Brownish yellow weathered rock	50/'5'cm penetration				Very dense
10.0 – 10.5			Borehole 1 terminated at the depth of 10.0m					

CHENNAI 600073

Scanned with OKEN Scanner

BOREHOLE LOG

Client	: M/s.Eco green Housing and Mr.KT Lakshmanan	Water Table	: 5.0m
		Ele . Of G.L	: Nil
Type of building	: (Stilt+3) Residential Building	Type Of Boring	: Rotary
Location	: Lakshmipuram East street, Devakottai.	Dia of Boring	: 150mm
B.H. No	: 2	Started on	: 24.04.2024
Final Depth	: 8.0m	Ended on	: 24.04.2024

Depth (m)	GWL	SYMBOL	DESCRIPTION	SPT COUNT 0 -15 cm	15 -30 cm	30 -45 cm	N- Value	Relative Density /Consistency
0.0 – 1.0			Filling Soil					
1.0 – 2.5			Brownish grey medium plastic and swelling silty clay	3	3	4	7	Firm
2.5 – 5.0	▼		Brownish red clayey gravel sand with silt mixtures	5	6	16	22	Medium dense
4.5 – 5.0			Ditto	50/15cm penetration				Very dense
5.5 – 6.5			Brownish yellow high plastic and swelling clay	50/15cm penetration				Hard
6.5 – 7.5			Ditto					
7.0 – 7.5			Brownish white clayey fine sand with silt mixtures	50/15cm penetration				Very dense
8.0 – 10.5			Borehole 2 terminated at the depth of 8:0m					

VELTECH CONSULTING ENGINEERS CHENNAI 600073

Scanned with OKEN Scanner

BOREHOLE LOG

Client	: M/s.Eco green Housing and Mr.KT Lakshmanan	Water Table	: 5.0m
Type of building	: (Stilt+3) Residential Building	Ele . Of G.L	: Nil
Location	: Lakshmipuram East street, Devakottai.	Type Of Boring	: Rotary
B.H. No	: 3	Dia of Boring	: 150mm
Final Depth	: 8.0m	Started on	: 24.04.2024
		Ended on	: 24.04.2024

Depth (m)	GWL	SYMBOL	DESCRIPTION	SPT COUNT 0 -15 cm	15 -30 cm	30 -45 cm	N- Value	Relative Density /Consistency
0.0 – 2.5			Brownish white medium plastic and medium swelling clay	2	3	4	7	Stiff
			Brownish grey high plastic and high swelling clay	2	4	5	9	Stiff
3.0 – 5.0	▼		Brownish black clayey gravel sand with silt mixtures	19	50/15cm			Very dense
			Ditto	18	50/15cm			Very dense
5.5 – 7.5			Brownish white medium plastic and medium swelling silty clay	50/15cm penetration				Hard
			Ditto	50/15cm penetration				Hard
8.0 – 10.5			Borehole 3 terminated at the depth of 8.0m					

VELTECH CONSULTING ENGINEERS * CHENNAI 600073

No.10, Elumalainaicken Street, Selaiyur, Chennai - 600 073.
E-mail : veltechconsultingengineers@gmail.com. Mob : 99620 22065

Scanned with OKEN Scanner

VELTECH CONSULTING ENGINEERS

CLIENT : M/s.Eco green Housing and
Mr. KT Lakshmanan.,

Project : (Stilt+3) Residential Building

APPENDIX B

LABORATORY TEST RESULTS

VELTECH CONSULTING ENGINEERS * CHENNAI 600073

Scanned with OKEN Scanner

GEOTECHNICAL INVESTIGATION REPORT

VELTECH CONSULTING ENGINEERS

CLIENT : M/s.Eco green Housing and
Mr. KT Lakshmanan.,

Project : (Stilt+3) Residential Building

1- a) PHYSICAL ANALYSIS OF SOIL BH-1

Test results of Moisture content , Atterberg limits

DEPTH M	Moisture Content%	Atterberg limits				IS Classification
		W_L%	W_P%	I_P%	FSI%	
1.0	27.35	55	27	28	56	CH
2.0	29.22	52	24	28	55	CH
3.0	18.86	Non Plastic				SM
4.5	14.32	Non Plastic				SM
6.0	15.63	54	24	30	55	CH
8.0-10.0	Weathered rock					

1-b) GRAIN SIZE ANALYSIS OF SOIL – BH-1

DEPTH M	GRAVEL SAND %	COARSE SAND %	MEDIUM SAND %	FINE SAND %	SILT + CLAY%
1.0	-	-	2	7	91
2.0	-	-	5	11	84
3.0	24	21	14	5	36
4.5	15	4	25	18	38
6.0	-	-	3	10	87

VELTECH CONSULTING ENGINEERS CHENNAI 600073

Scanned with OKEN Scanner

GEOTECHNICAL INVESTIGATION REPORT

VELTECH CONSULTING ENGINEERS

CLIENT : M/s.Eco green Housing and
Mr. KT Lakshmanan.,

Project : (Stilt+3) Residential Building

2- a) PHYSICAL ANALYSIS OF SOIL BH-2

Test results of Moisture content , Atterberg limits

DEPTH M	Moisture Content%	Atterberg limits				IS Classification
		W_L%	W_P%	I_P%	FSI%	
1.0	Filling soil					
2.0	22.65	48	23	25	45	CI
3.0	26.39	Non Plastic				SC
4.5	14.61	Non Plastic				SM
6.0	24.17	51	25	26	50	CH
8.0	19.26	Non Plastic				SC

2-b) GRAIN SIZE ANALYSIS OF SOIL – BH-2

DEPTH M	GRAVEL SAND %	COARSE SAND %	MEDIUM SAND %	FINE SAND %	SILT + CLAY%
1.0	Filling soil				
2.0	-	1	9	21	69
3.0	18	15	22	7	38
4.5	32	8	15	12	33
6.0	-	-	4	16	80
8.0	5	3	12	39	41

VELTECH CONSULTING ENGINEERS CHENNAI 600073

Scanned with OKEN Scanner

GEOTECHNICAL INVESTIGATION REPORT

VELTECH CONSULTING ENGINEERS

CLIENT : M/s.Eco green Housing and
Mr. KT Lakshmanan.,

Project : (Stilt+3) Residential Building

3- a) PHYSICAL ANALYSIS OF SOIL BH-3

Test results of Moisture content , Atterberg limits

DEPTH M	Moisture Content%	Atterberg limits				IS Classification
		W_L%	W_P%	I_P%	FSI%	
1.0	24.77	43	21	22	45	CI
2.0	26.38	50	26	24	55	CH
3.0	15.68	Non Plastic				SM
4.5	13.25	Non Plastic				SM
6.0	20.49	49	22	27	50	CI
8.0	16.21	44	20	24	45	CI

3-b) GRAIN SIZE ANALYSIS OF SOIL – BH-3

DEPTH M	GRAVEL SAND %	COARSE SAND %	MEDIUM SAND %	FINE SAND %	SILT + CLAY%
1.0	-	-	12	28	60
2.0	2	-	4	13	81
3.0	33	20	7	3	37
4.5	36	15	18	10	21
6.0	-	-	5	16	79
8.0	-	-	8	29	63

VELTECH CONSULTING ENGINEERS CHENNAI 600073

Scanned with OKEN Scanner

VELTECH CONSULTING ENGINEERS

CLIENT : M/s.Eco green Housing and
Mr. KT Lakshmanan.,

Project : (Stilt+3) Residential Building

ABBREVIATION

Note

❖	W_N	=	Natural Moisture content (%)
❖	W_L	=	Liquid limit (%)
❖	W_P	=	Plasticity Limit (%)
❖	I_P	=	Plasticity Index (%)
❖	F.S.I	=	Free Swell Index (%)
❖	IS	=	Indian Standard Classification
❖	CL	=	Low compressibility Clay of $W_L < 35\%$
❖	CI	=	Inorganic Clay of $35\% < W_L < 50\%$
❖	CH	=	High Compressibility Clay of $W_L > 50\%$
❖	SP	=	Poorly graded sand
❖	GP	=	Poorly graded gravel
❖	SW	=	Well graded sand
❖	SM	=	Silty sand

VELTECH CONSULTING ENGINEERS CHENNAI 600073

Scanned with OKEN Scanner

VELTECH CONSULTING ENGINEERS

CLIENT : M/s.Eco green Housing and
Mr. KT Lakshmanan.,

Project : (Stilt+3) Residential Building

APPENDIX C

PHOTOS

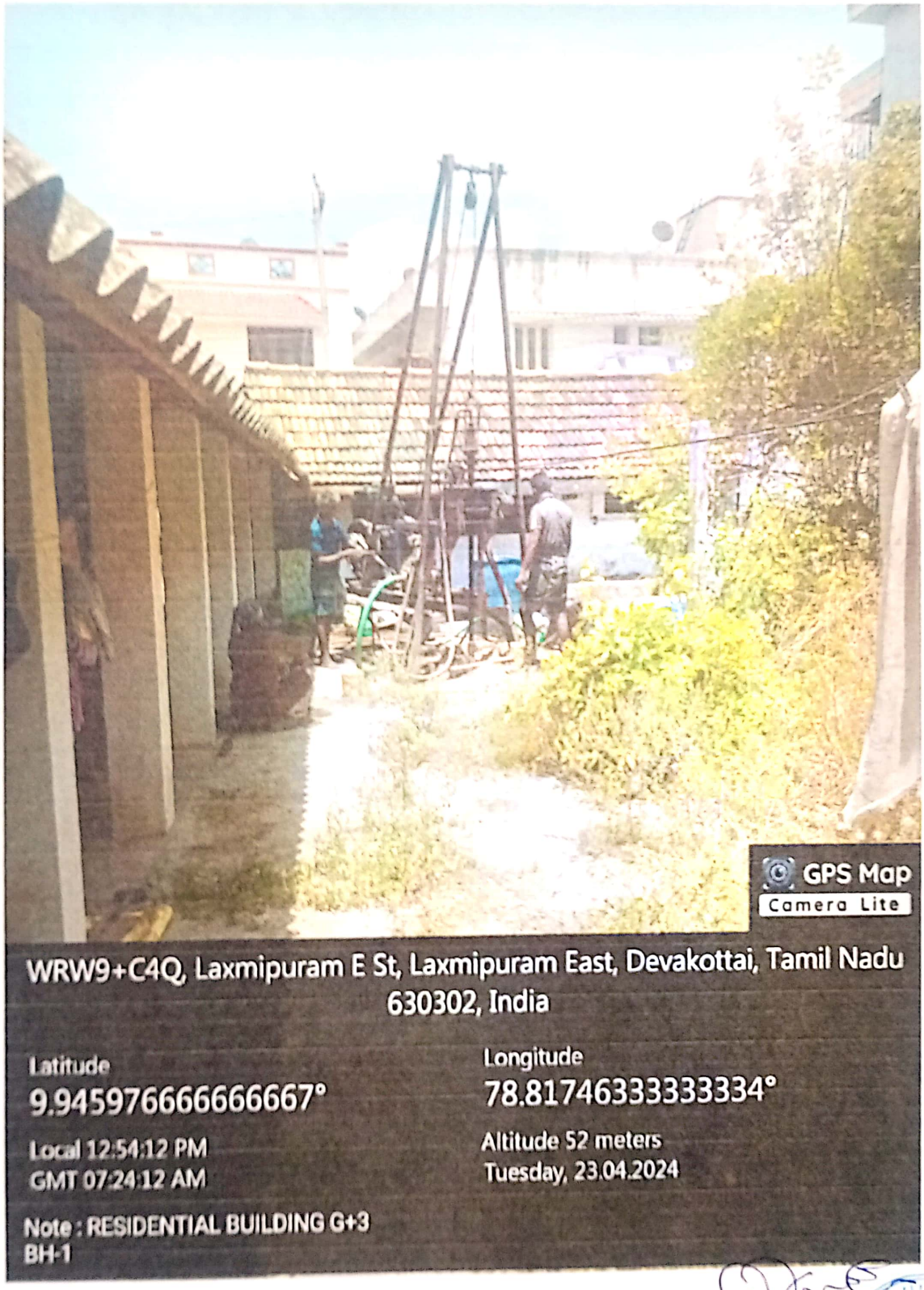
VELTECH CONSULTING ENGINEERS
CHENNAI
600073

Scanned with OKEN Scanner

VELTECH CONSULTING ENGINEERS

CLIENT : M/s.Eco green Housing and
Mr. KT Lakshmanan.,

Project : (Stilt+3) Residential Building



VELTECH CONSULTING ENGINEERS * CHENNAI 600073

Scanned with OKEN Scanner

O/o. DEPUTY DIRECTOR OF TOWN AND COUNTRY PLANNING,
CHENGALPATTU REGION,
No.124, Municipal Commercial Complex, G.S.T.Raod, Chengalpattu - 603 001
E-mail : ddcglregion@gmail.com, Phone : 044 - 27422144

PROFESSIONAL REGISTRATION CERTIFICATE

This is to certify that **Mr. R.VENKATA KRISHNAIAH** has enrolled as **Registered Geo-Technical Engineer (RGTE)** with Deputy Director of Town and Country Planning, Chengalpattu Region who has the qualification of **M.E (Soil mechanics and foundation Engg.)** and experience in the relevant field for **10 years**.

He has been given the Registration No. **CGLRGN/RGTE/2019/09/014** on **14.09.19**. He shall be required to comply with the duties and responsibilities prescribed by the Government of Tamil Nadu is Part V, "Registration of Professionals", Tamil Nadu Combined Development and Building Rules, 2019 approved vide G.O.(Ms) No.18 MAWS (MA1) Dept. Dated 04.02.2019.

This Registration is valid upto **13.09.2024**.

Deputy Director,
Chengalpattu Region





R.VENKATA KRISHNAIAH
GEOTECHNICAL CONSULTANT
VELTECH CONSULTING ENGINEERS
NO.10, ELUMALAI NAICKEN STREET,
SELAIYUR, CHENNAI - 600073.
REG. NO. CGLRGN/RGTE/2019/09/014



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

Verified RealEstate™

We're honored to be part of your real estate journey

3/350/2 Mettukuppam,
OMR Thoraipakkam,
Chennai, India

hello@verified.realestate
+91 9996 12 9996
www.verified.realestate