



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™



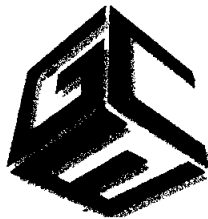
Report on

**The Geotechnical Investigation for the proposed construction of
Residential Group Development Building at S.F.No: 365/2F, Thudiyalur
Village, North Zone & Taluk, Coimbatore Corporation.**

CLIENT:

**M/s Coimbatore Bright Steels,
No.98,Patel Road,
Ram Nagar,
Coimbatore- 641 009.**

**Project Code: 122104
13 December 2021**



GEOCARE ENGINEERING CONSULTANCY

(An ISO 9001:2015 Certified Company)

**#17/25B, Annur Road,
Karumathampatti, Coimbatore - 641 659.
Phone: 0422 4399772
Mobile: 9597262815
email: geocareconsultancy@gmail.com**

TABLE OF CONTENTS

1. INTRODUCTION	3
2. OBJECTIVES AND SCOPE OF WORK.....	3
2.1. OBJECTIVES.....	3
2.2. SCOPE OF WORK	3
2.2.1. FIELD (IN-SITU) INVESTIGATIONS.....	4
2.2.2. LABORATORY TESTING	4
2.3. REPORT	4
3. PROJECT DETAILS	4
3.1. THE SITE	4
3.2. WEATHER CONDITION.....	4
3.3. SEISMIC ZONE.....	4
3.4. GEOLOGY OF COIMBATORE DISTRICT.....	5
4. SCHEDULE OF INVESTIGATION	5
4.1. FIELD INVESTIGATIONS.....	5
4.2. STANDARD PENETRATION TESTS	5
4.3. STANDING WATER LEVEL	6
5. RESULTS AND DISCUSSION	7
5.1. NET SAFE BEARING CAPACITY/ALLOWABLE BEARING PRESSURES.....	8
6. CONCLUSION & RECOMMENDATIONS	9
APPENDIX – I.....	9
BOREHOLE LOCATION PLAN	10
APPENDIX – II.....	10
LABORATORY TEST RESULTS	11
APPENDIX – III.....	11
BORE LOG	13
APPENDIX – IV	13
PHOTOGRAPHS SHOWING FIELD INVESTIGATION.....	15
REFERENCES	15

**TECHNICAL REPORT ON THE GEOTECHNICAL INVESTIGATION FOR THE
PROPOSED CONSTRUCTION OF RESIDENTIAL GROUP DEVELOPMENT
BUILDING AT S.F.NO: 365/2F, THUDIYALUR VILLAGE, NORTH ZONE, NORTH
TALUK, COIMBATORE CORPORATION.**

1. Introduction

The Management, M/s Coimbatore Bright Steels, proposes to construct a residential group development building at S.F.No: 365 / 2F, Thudiyalur Village, North Zone, North Taluk, Coimbatore Corporation. In order to enable an adequate and economic design, the Geotechnical Investigation was assigned to M/s. GEOCARE Engineering Consultancy, Coimbatore in view to furnish the detailed technical information of the nature of subsoil strata for detail analysis and foundation designs.

2. Objectives and Scope of Work

2.1. Objectives

The object of the Geotechnical Investigation is to evaluate the following:

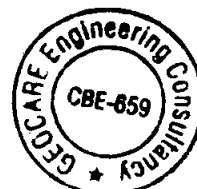
- To ascertain the subsoil strata.
- To record the ground water level if any.
- To determine the physical, and engineering properties of soil/rock samples.
- To evaluate the allowable bearing capacity of soil/rock.
- To recommend improvements to the weak soil strata, if any

2.2. Scope of Work

The scope of work includes the following field (In-situ) and laboratory tests.

2.2.1. Field (In-Situ) Investigations

- i) Boring 150mm dia/Nx size boreholes in all kinds of strata using rotary drilling by wash boring method as per IS –1892 –1979.
- ii) Conducting field tests such as Standard Penetration Tests as per IS 2131- 1981 at various depths in the boreholes.
- iii) Collection of undisturbed and disturbed soil samples at specified depths for determination of cohesion 'c' friction factor ' ϕ ' and others index & engineering properties as per Indian Standards.



2.2.2. Laboratory Testing

The scope of laboratory testing is as follows:

- i) Determination of Natural Moisture Content and Density as per IS 2720 - part 2.
- ii) Grain size analysis as per IS 2720 - part 4.
- iii) Determination of shear strength parameters as per IS 2720 – part 11 / 13.

2.3. Report

This report comprises of soil profile, recommendations regarding allowable bearing capacity, improvement in bearing capacity of soil.

3. Project Details

3.1. The Site

The site for the proposed construction of residential group development building is located at S.F.No: 365 / 2F, Thudiyalur Village, North Zone, North Taluk, Coimbatore Corporation, Tamilnadu.

3.2. Weather Condition

The weather was clear and sunny at time of investigation.

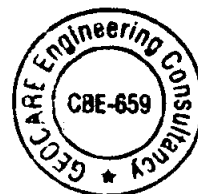
3.3. Seismic Zone

The site for the proposed construction of residential group development building is located at S.F.No: 365 / 2F, Thudiyalur Village, North Zone, North Taluk, Coimbatore Corporation, Tamilnadu which comes under seismic zone-III as per IS 1893 (Part-I)-2002.

3.4. Geology of Coimbatore District

About 60 per cent of the district is covered by red soils, of which red calcareous soil is predominant. They occupy most parts of Palladam, Coimbatore. Medium to deep red calcareous soils are found mainly in Pollachi and Udumalpet taluks. Parts of Palladam, Avinashi and Udumalpet taluks are occupied by red non-calcareous soils. The highlands in Coimbatore, Palladam and Avinashi taluks are mostly occupied by the black soils, which are dark gray to greyish brown in color. The Alluvial soils are found in small patches along the Noyyal River mainly in the upper reaches.

Reference CWC Coimbatore District.



5. Results and Discussion

Sub Soil Stratification

The subsoil strata at BH1 & BH2 were more or less similar and consists of Clay up to a depth of about 1.20 – 1.70m below existing ground level (EGL) followed by Sandy Gravel (Dense) up to a depth of about 2.60 – 3.0m and underlain by Medium Hard Rock up to explored depth.

Stratum I	:	Clay
Stratum II	:	Sandy Gravel (Dense)
Stratum III	:	Medium Hard Rock

BH No	Strata depth in m		
	Stratum I	Stratum II	Stratum III
BH1	0.0 – 1.70	1.70 – 3.0	3.0 – 6.0 ^E and above
BH2	0.0 – 1.20	1.20 – 2.60	2.60 – 6.0 ^E and above

E- Explored depth

Design Parameters

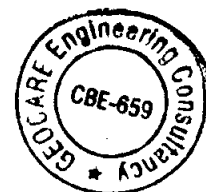
The parameters required for the design of the foundation system for the proposed building are:

- Type of foundation to be adopted
- Depth at which the foundations have to be laid
- Allowable bearing pressure on the soil at the foundation level

Type of Foundation

The type of foundation for any structure depends upon the subsoil conditions, type of structure, as well as the loading intensity on the foundations.

The subsoil encountered at average founding levels is dense strata. Hence, Shallow Foundation can be adopted for the proposed building. The Shallow Foundations may be Isolated / Combined Footing depending upon the column loads, their spacing and configuration.



Depth of Foundations

The minimum depth of foundations depends upon the following factors:

- Top loose zone, if any
- Adequate depth of soil above founding level, to ensure mobilization of full safe bearing capacity
- Adequate depth of soil strata below founding level of requisite strength to mobilize the safe bearing capacity

The strata available at the founding level will be generally Sandy Gravel (Dense).

The safe bearing pressures so determined are tabulated below.

5.1. Net Safe Bearing Capacity/Allowable Bearing Pressures

Table-2 Allowable Safe Bearing Capacity			
Borehole No.	Depth below EGL (m)	Type of Strata	SBC (kN/m ²)
			B=1.5m
BH1 & BH2	1.50	Sandy Gravel (Dense)	175
	2.0		340
	2.50		365
	3.0		400

The schematic plan showing the location of boreholes is shown in Appendix-I - Fig. 1. The index & engineering properties of soil samples at various depths in the boreholes are indicated in Appendix - II - Table 3. The particle size distribution curves for the soil samples are shown in Fig. 2. Bore logs are shown in Appendix - III.



6. Conclusion & Recommendations

- The subsoil consists of clay, followed by Sandy Gravel (Dense) and underlain by Medium Hard Rock at explored depth.
- Standing water level is not observed at any of the boreholes during field investigation
- Based on the subsoil profile open foundation of isolated/combined footing with tie beam is recommended.
- The recommended depth of foundation is **2.0m** below EGL with an SBC of **340kN/m²** for a footing width of **1.5m**.
- Over excavation and loosening of strata at final founding level shall be avoided & if occurs, the same shall be replaced by lean concrete
- Prior to laying PCC, all loose soil in the foundation shall be removed and the base should be thoroughly compacted.
- It is recommended that the back filling in the foundation should be carried out with proper compaction.
- Interpretations are provided based on factual field & laboratory test results & shall be applicable for investigated locations. There is a possibility that strata variations could occur. If any variations indicate significant deviation from the findings of this report, the same shall be brought to our notice.

For GEOCARE Engineering Consultancy

S. Prabhavathi

Authorized Signatory



S.PRABHAVATHI, M.E (Geotech) M.I.G.S

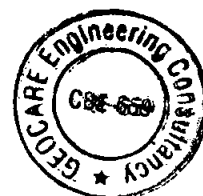
Registered Geotechnical Engineer

Reg No: Coimbatore LPA / GTE /19/04/002

No: 17/25-B, Annur Road, Karumathampatti,
Coimbatore - 641 659.

Ph: 0422-4399772, Mob: +91 9600558700

BOREHOLE LOCATION PLAN



Note: Dimensions are not to scale

APPENDIX – II

LABORATORY TEST RESULTS

Table 3 – Index and Engineering properties of soil samples:

BORE HOLE	SAMPLE TYPE	DEPTH (m)	NMC (%)	N-VALUE	ATTERBERG LIMIT(%)		PLASTICITY INDEX	GRAIN SIZE DISTRIBUTION (%)					IS CLASSIFICATION
					w _L	w _p		GRAVEL	SAND			SILT + CLAY	
									COARSE	MEDIUM	FINE		
BH1	SS	1.5	36.4	21	-	-	NP	19.8	4.0	8.5	13.8	54.0	GM - GS
BH2	SS	1.0	11.0	31	-	-	NP	40.2	11.0	13.5	7.7	27.6	GS

SS – Split Spoon Sample; ST – Shelby Tube Sample; NP – Non Plastic; GM – Silty Gravel; GS – Sandy Gravel

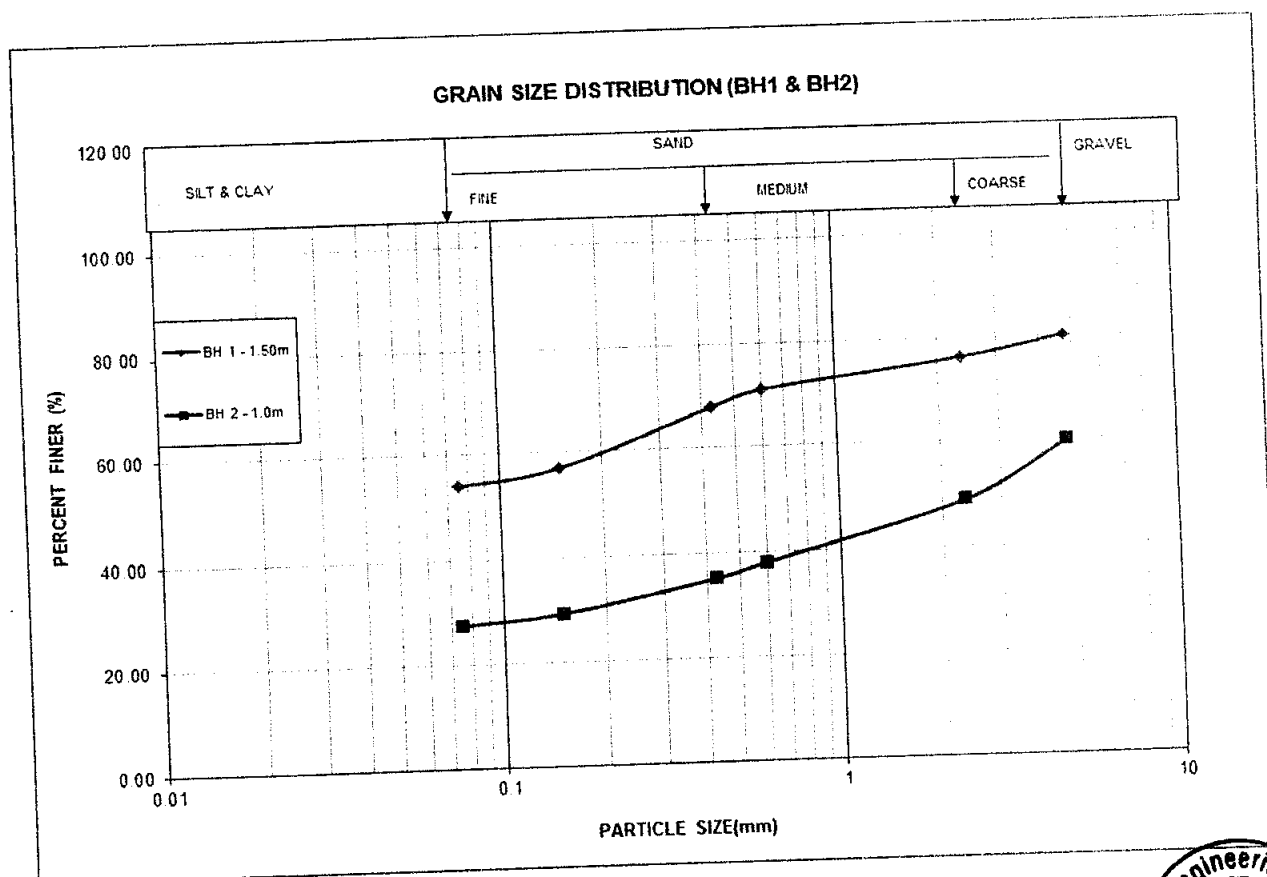
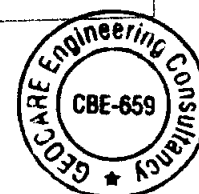


Fig. 2 - Grain Size Distribution Curve



APPENDIX – III

BORE LOG



GEOCARE ENGINEERING CONSULTANCY
17/25B, Annur Road,
Karumathampatti, Coimbatore - 641 659.

BORE LOG

PROJECT : Geotechnical investigation of Residential Group Development Building

CLIENT : M/s Coimbatore Bright Steels

BORE HOLE NO. : BH-01

LOCATION : Thudiyalur Village, Coimbatore Corporation.

TYPE OF BORING : Rotary Drilling

BORE HOLE DIA. : 100mm

GWT FROM G.L. : -

CASING DEPTH :

DATE OF COMMENCEMENT : 07-12-2021

DATE OF COMPLETION : 07-12-2021

SOIL DESCRIPTION	LEGEND	DEPTH BELOW GL (m)	STANDARD PENETRATION TEST					SAMPLE TYPE	ROCK DRILLING		REMARKS
			N-VALUE	10	20	30	40	>50	CR (%)	RQD (%)	
Clay		1.00	21 (5, 7, 14)								
		2.00									
Sandy Gravel		3.00	>100 (50+R)								
		4.00									
Medium Hard Rock		5.00									
		6.00									
		7.00									
		8.00									
		9.00									
		10.00									

SS = SPLIT SPOON SAMPLE

ST = SHELBY TUBE SAMPLE

WS = WASH SAMPLE

R = REFUSAL

BH - 1 Terminated at 6.0m depth

GEOCARE Engineering Consultancy





GEOCARE ENGINEERING CONSULTANCY
17/25B, Annur Road,
Karumathampatti, Coimbatore - 641 659.

BORE LOG

PROJECT : Geotechnical investigation of Residential Group Development Building

CLIENT : M/s Coimbatore Bright Steels

BORE HOLE NO. : BH-02

LOCATION : Thudiyalur Village, Coimbatore Corporation.

TYPE OF BORING : Rotary Drilling

BORE HOLE DIA. : 100mm

GWT FROM G.L. : -

CASING DEPTH : -

DATE OF COMMENCEMENT : 08-12-2021

DATE OF COMPLETION : 08-12-2021

SOIL DESCRIPTION	LEGEND	DEPTH BELOW GL (m)	STANDARD PENETRATION TEST						SAMPLE TYPE	ROCK DRILLING		REMARKS
			N-VALUE	10	20	30	40	>50		CR (%)	RQD (%)	
Clay		1.00	31 (11, 14, 17)						SS			
Sandy Gravel		2.00	>100 (50+R)						WS			
Medium Hard Rock		3.00										
		4.00										
		5.00										
		6.00										
		7.00										
		8.00										
		9.00										
		10.00										

SS = SPLIT SPOON SAMPLE

ST = SHELBY TUBE SAMPLE

WS = WASH SAMPLE

R = REFUSAL

BH - 2 Terminated at 6.0m depth

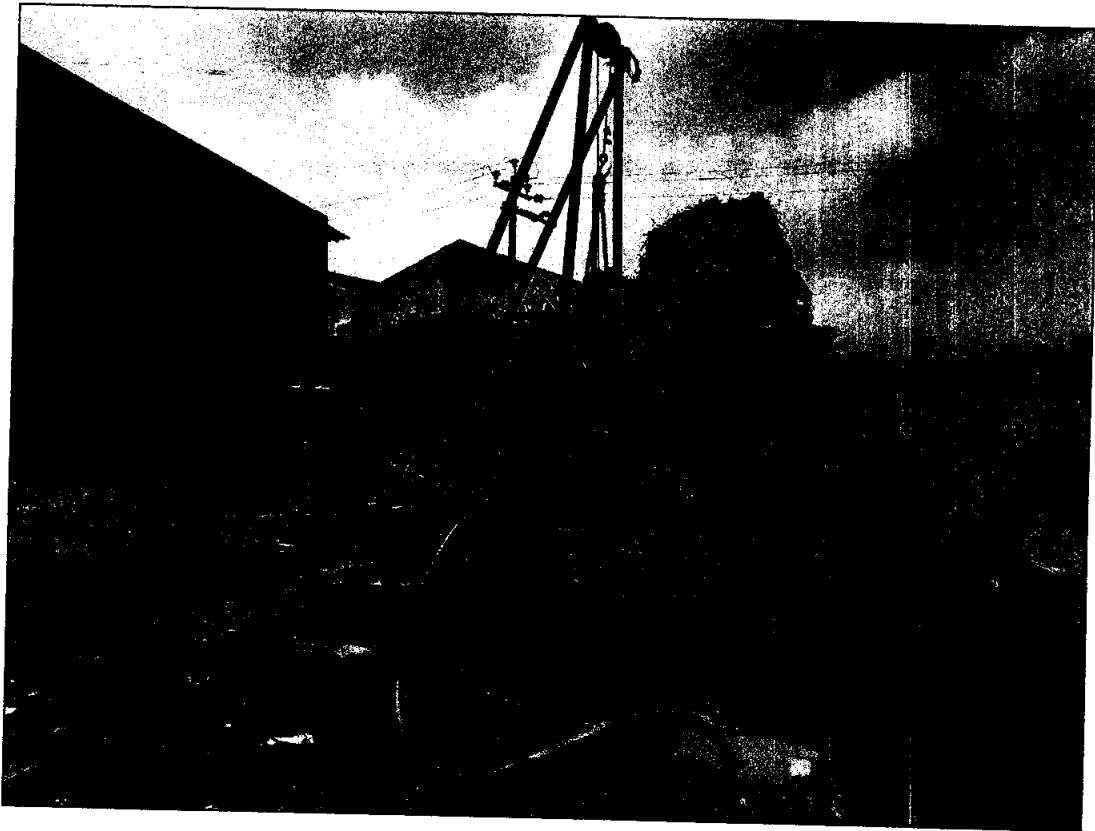
GEOCARE Engineering Consultancy



APPENDIX – IV

PHOTOGRAPHS SHOWING FIELD INVESTIGATION





REFERENCES

LIST OF IS CODES

Field Investigation

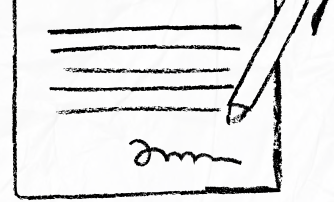
1. IS: 1892 - 1979: Code of practice for sub surface investigations for foundations (First revision)
2. IS: 2131 - 1981: Method of Standard Penetration Tests for soils (First revision)
3. IS: 2132 - 1986: Code of practice for thin walled tube sampling of soils (Second revision)
4. Field Permeability test in Boreholes as per IS 5529 part – 1

Laboratory Tests

5. IS: 2720 - 1983 (Part 1): Methods of test for soils: Preparation of dry soil samples for various tests (Second revision)
6. IS: 2720 - 1980 (Part 2): Method of test for soils: Determination of water content (Second revision) Amendment 1
7. IS: 2720 - 1985 (Part 4): Method of test for soils: Grain size analysis (Second revision)
8. IS: 2720-1981 Part 13: Method of tests for soils: Determination of shear strength parameters using Direct Shear apparatus.
9. Determination of Specific gravity as per IS 2720 part – 3.
10. Determination of Free swell Index as per IS 2720 part - 40.

Foundation Construction

11. IS: 1080 - 1986: Code of practice for design and construction of shallow foundations on soils (other than raft, ring and shell) (Second revision)
12. IS: 1904 - 1986: Code of practice for design and construction of foundation in soils: General requirements (Third revision)
13. IS: 6403 - 1981: Code of practice for determination of bearing capacity of shallow foundations: First revision (Amendment 1)
14. IS: 8009 - 1976 (Part 1): Code of practice for calculation of settlements of foundations: Shallow foundations subject to symmetrical static vertical loads (Amendment 2)



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.



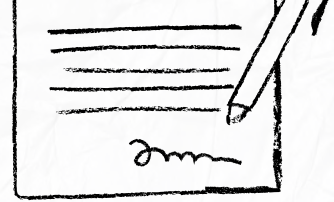
NRI & Investment Services

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



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](tel:+919996129996)
www.verified.realestate