Report on
The Geotechnical Investigation for the Proposed Construction of Residential Group Development Villas Building in S.F. No: 514/1A1, 1A2, 518/2B, 2C & 519/2B at Vadavalli Village, West Zone, Perur Taluk, Coimbatore Corporation.

CLIENT:

M/s. Promag Foundations and Structures Private Limited,
M/s. SGK Investment Trust (POA),
F-1, First Floor, Srivari Kikani Centre,
No.2, Krishnaswamy Road,
Coimbatore.

Project Code: 102419

16 November 2024

GEOCARE ENGINEERING CONSULTANCY
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GEOTECHNICAL INVESTIGATION BY STANDARD PENETRATION TEST (SPT)

Client Name	M/s. Promag Foundations and Structures Private Limited, M/s. SGK Investment Trust (POA),
Client Address	F-1, First Floor, Srivari Kikani Centre, No.2, Krishnaswamy Road, Coimbatore - 641 002.
Project	Proposed Construction of Residential Group Development Villas Building
Site Address	S.F. No: 514/1A1, 1A2, 518/2B, 2C & 519/2B, Vadavalli Village, West Zone, Perur Taluk, Coimbatore Corporation.
Date of field test	24th October 2024

Field test conducted by	S. Mani, B.E
Report Prepared by	R. Suresh, B.E
Report Verified by	R. Sathishkumar, M.E (Geotech) / S. Prabhavathi, M.E (Geotech)
Report Approved by	R. Sathishkumar, M.E (Geotech)

GEOTECHNICAL INVESTIGATION FOR THE PROPOSED CONSTRUCTION OF RESIDENTIAL GROUP DEVELOPMENT VILLAS BUILDING IN S.F.NO: 514/1A1, 1A2, 518/2B, 2C & 519/2B AT VADAVALLI VILLAGE, WEST ZONE, PERUR TALUK, COIMBATORE CORPORATION.

INTRODUCTION

The Management, M/s. Promag Foundations and Structures Private Limited, M/s. SGK Investment Trust (POA), proposes to construct a Residential Group Development Villas Building in S.F. No: 514/1A1, 1A2, 518/2B, 2C & 519/2B at Vadavalli Village, West Zone, Perur 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.

SAMPLING METHODOLOGY

To study the subsoil strata at the proposed location 05 nos. of 5' x 5' (approx.) size pit were excavated at specified location based on client's suggestion to carry out the Standard Penetration Test (SPT).

STANDARD PENETRATION TEST

Standard Penetration Test (SPT), which is done to determine penetration resistance was conducted in the trial pit using the procedure as described in IS: 2131. In this method, split spoon sampler (50.8mm OD and 35mm ID) is driven by dropping 63.5kg weight with a free fall of 75cm. The length of the sampler is 60cm. The sampler is first driven through 15cm as a "seating drive ". It is further driven through 30cm. The number of blows required for drilling the sampler for next 30 cm beyond seating drive is termed as "penetration resistance," N".

The samples thus recovered were transported to the laboratory for further investigation if necessary.

SOIL PROFILE AND STRATA

Based on the visual inspection carried out at the site, the subsoil strata at TP1 to TP5 consists of Top Filled Soil up to a depth of about 0.40m below existing ground level (EGL), followed by Clay up to a depth of about 0.50 – 1.10m, Clayey Gravel up

to a depth of about 1.0 – 1.50m, Sandy Gravel up to a depth of about 1.60 – 2.80m and underlain by Dense Gravel at explored depth.

Stratum I : Top Filled Soil
Stratum I : Clay
Stratum II : Clayey Gravel
Stratum III : Sandy Gravel
Stratum IV : Dense Gravel

Test Pit No.	Strata depth in m				
	Stratum I	Stratum II	Stratum III	Stratum IV	Stratum V
TP1	0.0 – 0.40	-	0.40 – 1.50	1.50 – 2.60	2.60 and above
TP2	-	0.0 – 1.10	-	1.10 – 2.0	2.0 and above
TP3	-	0.0 – 0.50	0.50 – 1.0	1.0 – 1.60	1.60 and above
TP4	-	0.0 – 0.50	0.50 – 1.0	1.0 – 2.80	2.80 and above
TP5	-	0.0 – 0.80	0.80 – 1.40	1.40 – 2.20	2.20 and above

NET SAFE BEARING CAPACITY/ALLOWABLE BEARING PRESSURES

The N Values from SPT at respective depths are given below. Bearing capacity has been determined based on N Value. Recommendations are provided at depth of **1.60m, 2.20m & 2.80m**



Table-1 Allowable Safe Bearing Capacity				
Test Pit No.	**Depth below EGL (m)**	**Type of Strata**	**N Value**	**SBC (kN/m^2)**
				B=1.5m
TP1 & TP4	**2.80**	**Dense Gravel**	>50	**340**
TP2 & TP5	**2.20**			**300**
TP3	**1.60**			**270**

CONCLUSION & RECOMMENDATION

- The subsoil consists of Top Filled Soil, Clay, Clayey Gravel, Sandy Gravel and underlain by Dense Gravel at explored depth.
- Based on the investigation on the subsoil profile, open foundation of **isolated / combined footing** with tie beam is recommended.
- The recommended SBC for depth of foundation **2.80m** below EGL is **340kN/m^2** considering TP1, TP4 for a footing width of **1.50m.**
- The recommended SBC for depth of foundation **2.20m** below EGL is **300kN/m^2** considering TP2, TP5 for a footing width of **1.50m.**
- The recommended SBC for depth of foundation **1.60m** below EGL is **270kN/m^2** considering TP3 for a footing width of **1.50m.**
- However, the footing shall be rested at the dense strata (Dense Gravel) irrespective of the recommended depth. If strata occurs at earlier depth and respective SBC shall be considered since depth variation of strata is there.
- Over-excavation and loosening of strata at the founding level shall be avoided. Same if done 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.

- If there is any profile variation or to get the subsoil profile up to the desired depth rotary drilling method may be adopted.

- Recommendations given are based on the assumption that same strata or harder strata extends below the explored depth.

- Interpretations are provided based on factual field 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, same shall be brought to our notice

For

GEOCARE ENGINEERING CONSULTANCY

Authorized Signatory

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SITE LOCATION

10/24/24, 5:24 PM 11°01'25.3"N 76°52'45.0"E - Google Maps

11°01'25.3"N 76°52'45.0"E



Imagery ©2024 Airbus, Maxar Technologies, Map data ©2024 50 m

https://www.google.com/maps/place/11°01'25.3"N+76°52'45.0"E/@11.0239468,76.8795876,635m/data=!3m1!1e3!4m4!3m3!8m2!3d11.02... 1/1

GEOCARE Engineering Consultancy CBE-659

PHOTOGRAPHS SHOWING FIELD INVESTIGATION



Trial Pit - 02



Trial Pit - 03



Trial Pit - 04



Sample collection TP - 05

LAND OWNERSHIP FLOW CHART

S. No	Survey No as per Approved Plan	Sale deed				Patta				GPA				
		Doc No & date	Owner	Survey Number	Extent Sq. ft, (Sq.m)	Patta No	Owner	Survey Number	Extent Sq.m	Doc No dated	Executed	Infavour of/ Applicant	Survey Number	Extent sq.m
1	514/1A1	3057/2024 & 13.05.2024	SGK-Investment Trust	514/1A2	23445 Sq. ft 2178.1 Sqm	7003	SGK-Investment Trust	514/1A1	4050	7416/2022 & 04.11.2024	SGK-Investment Trust	Promag Foundations and Structures Private Limited	514/1A2	4046.84
		3063/2024 & 13.05.2024		514/1A1	20115 Sq. ft 1868.74 Sqm								514/1A1	
2	518/2B	3057/2024 & 13.05.2024	SGK-Investment Trust	518/2C	2581 Sq. ft 239.78 Sqm	7002	SGK-Investment Trust	518/2B	441	7416/2022 & 04.11.2024	SGK-Investment Trust	Promag Foundations and Structures Private Limited	518/2C	442.68
		3063/2024 & 13.05.2024		518/2B	2184 Sq. ft 202.90 Sqm								518/2B	
3	519/2B	3063/2024 & 13.05.2024	SGK-Investment Trust	519/2B	3735 Sq. ft 346.99 Sqm	6578	SGK-Investment Trust	519/2B	346	7416/2022 & 04.11.2024	SGK-Investment Trust	Promag Foundations and Structures Private Limited	519/2B	346.99
Total					**29761 Sq. ft 4837 Sq.m**				**4837 Sq.m**					**4837 Sqm**

For PROMAG FOUNDATIONS AND STRUCTURES PRIVATE LIMITED

Authorised Signatory