



Geo Technologies

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Expert Geo Consultants for Soil / Rock / Ground Water Investigations

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REPORT OF SOIL INVESTIGATION FOR THE PROPOSED OFFICE BUILDING AT TURKAPALLY (V), SHAMIRPET (M), MEDCHAL-MALKAJGIRI (DIST.), T.S.

1. INTRODUCTION

Smt. Varanasi Aruna is proposing to construct Office Building in Sy. No. 228 at Turkapally (V), Shamirpet (M), Medchal-Malkajgiri (Dist.), T.S.

The proposed Building consists of Steel Structure with C+S+6 floors. Area of the Site is Ac. 0 – 17 Gts.

The aim of this Report is to evaluate the nature and depth of soils at the site, and to determine the safe bearing capacity of the foundations accordingly.

2. FIELD INVESTIGATIONS

One (1) soil sample collected from 4.0 m depth was sent to the Lab for testing. It consists of Gravel. No Water is reported in the pit.

3. LABORATORY TESTING

The soil sample was tested in the Geo Technologies Soil Testing Laboratory at Hyderabad. The following tests were conducted:

Bulk Density, Shear test (For determining Cohesion and Angle of Internal Friction)

All the tests were conducted in accordance with IS: 2720 (Code of Practice for Testing of Soils).

4. RESULTS

Table 1 gives the results of physical and engineering tests on soil sample. Open foundations are recommended. Appendix gives the calculations for SBC.

5. RECOMMENDATIONS

Based on Lab testing, the following Recommendations are given:

- The soil sample consists of Gravel (GP).
- No Water correction is applied.
- SBC is tentatively recommended as 35 tonnes per sq m for foundations resting at 6.0 m depth. This is based on the assumption of footings of width 2 m. The actual size would be based on the loads from the super structure.
- This report is based on one trial pit only and is not adequate, detailed investigation is required for finalization of SBC.




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TABLE-1: SUMMARY OF SOIL PROPERTIES

Property	Location
	TP 1
Density, KN / cu m	18.9
Cohesion, KN / sq m	10
Angle of internal friction, deg	33

APPENDIX: CALCULATION OF BEARING CAPACITY

Assumed width of foundation... 3.0 m

Assumed depth of foundation... 2.0 m (Effective)

Unit wt. = 18.9 KN / cu m

Cohesion = 10 KN / sq m (Neglected)

Angle of internal friction = 33 deg.

Using IS Code 6403 – 1981 formula:

$N_c' = 29.37$ $N_q' = 18.39$ $N_r' = 23.55$

Net, Ult B.C. = $1.3 c N_c' + r D (N_q' - 1) + 0.4 r B N_r'$
= 1191 KN per sq m

With a F.S. of 3.0, SBC = 397 KN per sq m

Recommended Safe Bearing Capacity is 35 tonnes per sq m at 6.0 m depth.

SBC will be finalized after detailed investigations.

