



Geo Technologies

(ISO 9001 : 2008 Certified)

Expert Geo Consultants for Soil / Rock / Ground Water Investigations

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GT/P-HR/2021-22/5/Mehtha & Modi Realty/Timmapur

11-2-2022

REPORT OF SOIL INVESTIGATION FOR THE PROPOSED RESIDENTIAL APARTMENT BUILDING AT TIMMAPUR (V), KOTHUR (M), RANGA REDDY DISTRICT, T.S.

1. INTRODUCTION

M/s Mehtha & Modi Realty (Timmapur) LLP., rep. by its Managing Partner Sri Soham Modi are proposing to construct a Hi-rise residential apartment building in Sy. No. 199, situated in Timmapur (V), Kothur (M), Ranga Reddy District, T.S.

The proposed building comprises RCC structure with 1 Basement + 7 upper floors.

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 SDR. No water was 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

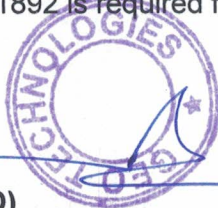
Table 1 gives the results of physical and engineering tests on soil sample. Open foundations are recommended. Appendix gives the calculations for SBC.

5. RECOMMENDATIONS

Based on Lab testing of one sample, the following Recommendations are given:

- The soil sample consists of Soft Disintegrated Rock (SDR).
- No Water correction is applied.
- SBC is tentatively recommended as 40 tonnes per sq m for foundations resting at 2.0 m depth below basement floor level. This is based on the assumption of footings of width 3 m. The actual size would be based on the loads from the super structure.
- This report is based on testing of a single sample from 4.0 m depth from one trial pit only and is not adequate for the high-rise building with 1C+7 upper floors. Detailed investigation by core drilling as per IS 1892 is required for finalization of SBC.

(Dr. N. VENKAT RAO)



Principal Geotechnical Consultant

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Former Professor & Head of Civil Engineering, Osmania University, Hyderabad

MCH Panelist No. 2490/TP/2000-2

PROPOSED RESIDENTIAL APARTMENT BUILDING AT TIMMAPUR (V), KOTHUR (M), RANGA REDDY DISTRICT, T.S.

TABLE-1: SUMMARY OF SOIL PROPERTIES

Property	Location
	TP 1
Density, KN / cu m	19.8
Cohesion, KN / sq m	0
Angle of internal friction, deg	35

APPENDIX: CALCULATION OF BEARING CAPACITY

Assumed width of foundation... 4.0 m

Assumed depth of foundation... 2.0 m below basement floor level.

Unit wt. $r = 19.8$ KN / cu m;

Cohesion $c = 0$ KN / sq m;

Angle of internal friction = 35 deg.

Using IS Code 6403 – 1981 formula:

$N_c = 33.53$ $N_q = 22.07$ $N_r = 29.50$

Net, Ult B.C. = $1.3 \ c N_c + r D (N_q - 1) + 0.4 \ r B N_r$

= 1249 KN per sq m

With a F.S. of 3.0, SBC = 416 KN per sq m

Recommended Safe Bearing Capacity is 40 tonnes per sq m.

SBC will be finalized after detailed investigations.





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Groundwater Feasibility Report

Name of work: Proposed Construction of a Hi-rise residential apartment building in Sy. No. 199, situated in Timmapur (V), Kothur (M), Ranga Reddy District, T.S.

Owner: M/s Mehtha & Modi Realty (Timmapur) LLP., rep. by its Managing Partner Sri Soham Modi

1. Geology:

- (a) Rock Type: Granite,
- (b) Texture : Medium to Fine grained
- (c) Soil Type: Silty gravel
- (d) Recharge Conditions: Moderate

2. Geophysical Data:

- (a) No. of Vertical Electrical Soundings (VES): 1
- (b) Configuration: Schlumberger
- (c) Generalised Sequence based on VES:

0 – 15 m ... Top soil
15 – 45 m ... Weathered zone
45 – 85 m ... Rock with intermittent fractures
85 – 160 m ... Hard Rock with minor fractures
Below 160 m ... Hard rock with no fractures

3. Recommendations:

- 1. The site has moderate potential for groundwater. One point is tentatively suggested for drilling.
- 2. Type of well: Bore well
- 3. Size: 6 ½ "
- 4. Depth: 160 m
- 5. Casing: 15-20 m
- 6. Expected yield: Moderate (1 ½ " – 2 ")
- 7. Detailed investigation is recommended.

(Dr. N. Venkat Rao)



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