

SOIL TESTING REPORT

FOR THE PROPOSED BUILDING AT

MALLAPUR, UPPAL (M)

'MAYFLOWER HEIGHTS'

Report Prepared by

DR. D. BABU RAO
M.E., Ph.D.(USA), MIGS

MCH Panellist No. 2490 /TP/2000-2

**CONSULTING GEO TECHNICAL ENGINEER
FORMER PROFESSOR & HEAD OF CIVIL ENGINEERING
OSMANIA UNIVERSITY**

**Phone / Fax : 66638830
Mobile : 98490 - 39337**

Email : *dbaburao2000@yahoo.com*

REPORT OF SOIL INVESTIGATIONS FOR THE PROPOSED BUILDING AT MALLA PUR

1. INTRODUCTION

It is proposed to construct a Building 'Mayflower Heights' in Sy No. 1/1,2/1/1 & 191 in Mallapur, Uppal (M), RR Dt.

Fig.1 shows the site plan. The area of the site is 4.18 acres.

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

2. FIELD INVESTIGATIONS

Four Trial pits were excavated at the locations shown in Fig. 1. This is adequate in accordance with IS : 2720 (Code of Practice for Subsurface Investigation of Foundations).

The sub soil profile comprises clay in the top 0.4 m, followed by clayey morum and then hard morum under saturated conditions.

There exists a nala flowing in the centre of the site from North to South. Water table is high.

The samples from the pits were properly packed and transported to the Soil Testing Laboratory, Hyderabad

3. LABORATORY TESTING

The samples were tested at the Soil Testing Laboratory at Hyderabad. The following Tests were conducted:

- Specific gravity Bulk density
- Grain size distribution Direct shear test

All the Tests were conducted in accordance with IS: 2720 (Methods of Tests for Soils).

4. RESULTS

Table 1 gives the results of physical and engineering tests on samples from the bottom of the Pits. The bottom soils are classified as GM in as per IS Classification..

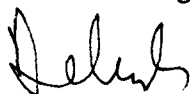
Appendix gives the calculations for SBC.

5. RECOMMENDATIONS

Based on Field Investigations and Laboratory Testing, the following

Recommendations are made for the proposed structure :

- a) The sub soil profile comprises clay in the top 0.4 m, followed by clayey morum and then hard morum under saturated conditions.
- b) There exists a nala flowing in the centre of the site from North to South. Water table is high.
- c) SBC is recommended as 30 t / sq m at 2 m depth for isolated footings. The actual size of the footing will be based on the loads from the super structure
- d) All concreting should be done in dry conditions.


(DR. D. BABU RAO)
M.E., Ph. D.(USA),MIGS

Dr. D. BABU RAO
M.E., Ph.D. (U.S.A.)
Consulting Geotechnical Engineer

CONSULTING GEOTECHNICAL ENGINEER
FORMER PROFESSOR & HEAD OF CIVIL ENGINEERING, OU

SOIL TESTING LABORATORY

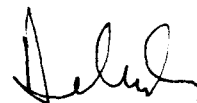
TABLE 1

SUMMARY OF SOIL PROPERTIES

BUILDING AT MALLA PUR

Property / TP No.	1	3	4	
Soil	GM	GM	GM	
Specific gravity	2.65	1.65	2.64	
Density, KN / cu m	17.9	18.8	19.0	
<i>Grain size distribution</i>				
Gravel > 4.75 mm	22	30	34	
Coarse sand, 4.75 – 2 mm	23	13	19	
Medium sand 2 - 0.425 mm	20	18	18	
Fine sand, 0.425 – 0.075 mm	17	19	20	
Silt, 0.075 – 0.002 mm	8	10	9	
Clay < 0.002 mm	10	10	0	
<i>Shear Parameters</i>				
Cohesion, KN / sq m	25	10	28	
Angle of internal friction, Φ degrees	33	34	33	

Note : Tests are conducted on Samples from bottom of the Pits



Dr. D. BABU RAO
M.E., Ph.D. (U.S.A.)
Consulting Geotechnical Engineer

APPENDIX

CALCULATION OF SAFE BEARING CAPACITY

BUILDING AT MALLAPUR

Assumed Width of foundation = 2 m

Assumed depth of foundation = 2 m

Unit weight = 17.9 kN / cu m

Cohesion = 15 kN / sq m $\Phi = 33$ degrees

Correction needed for WT

Using IS Code 6403 -1981 formula:

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

$$\begin{aligned}\text{Net ult B.C.} &= 1.3 c' N_c' + r'D (N_q' - 1) + 0.4 r' B N_r' \\ &= 937 \text{ kN / sq m}\end{aligned}$$

With a F.S. of 3, Safe B.C. = 312 kN / sq m

SBC is recommended as 30 t / sq m

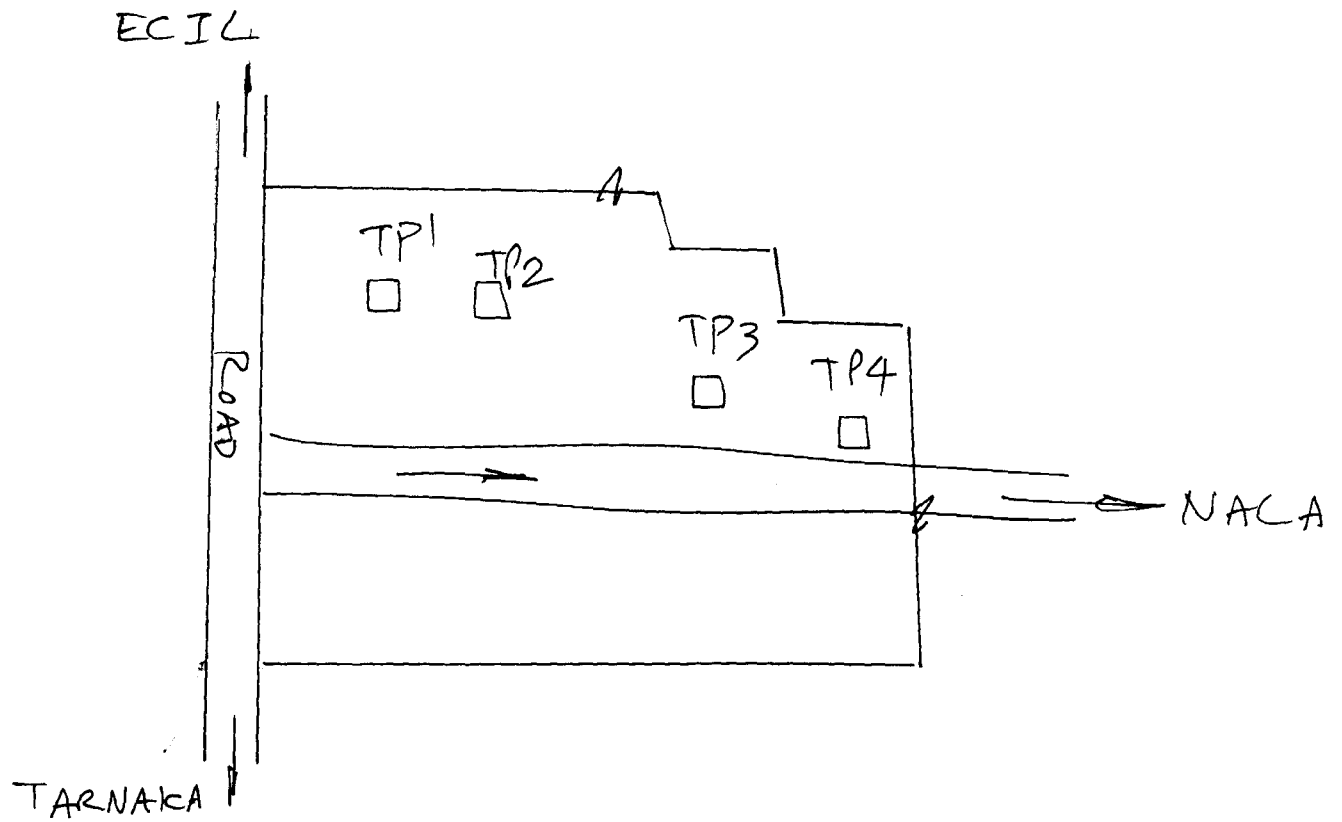


FIG 1: SITE PLAN OF PROPOSED BUILDINGS
AT MALLAPUR (MANDAL UPPAL) R.R. DT

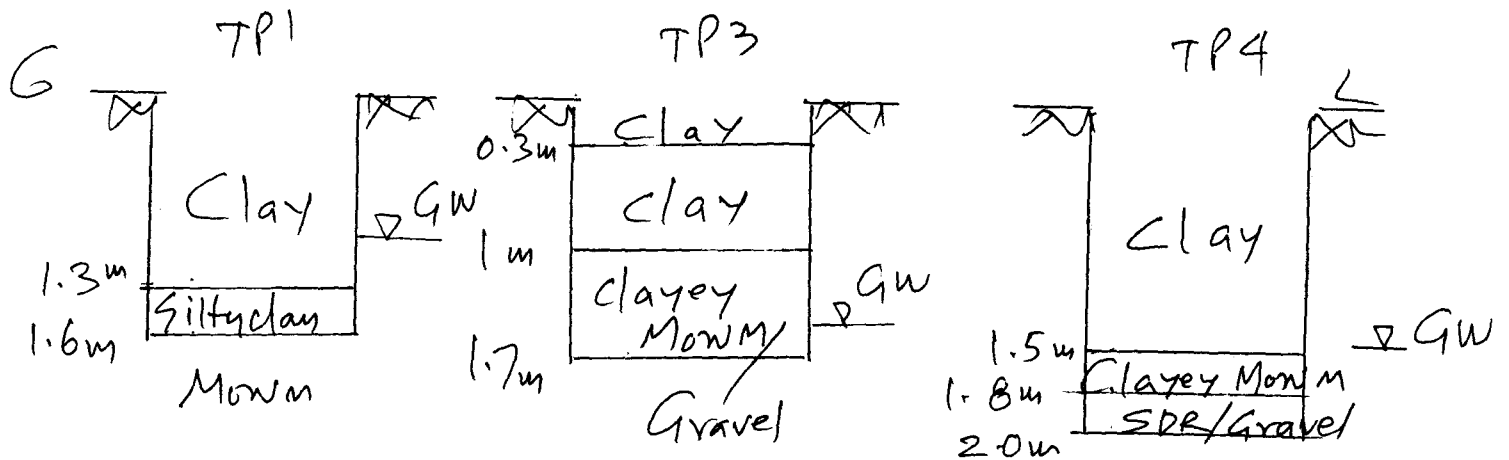


FIG.2: LOGS OF TRIAL PITS