

APPENDIX A

Soil Properties

Some properties of the soil at the site which are important for the purpose objective of study are as follows.

STRENGTH (Compactness & Consistency)

Soil Type	Term	Identification
Very Coarse (COBBLES & BOULDERS)	Loose	By inspection of voids and particle packing in the field.
	Dense Very loose Loose	SPT 'N' value 0-4. SPT 4-10; can be excavated with spade; 50 mm peg easily driven.
Coarse (SANDS & GRAVELS)	Medium dense Dense	SPT 10-30. SPT 30-50; requires pick for excavation; 50 mm peg hard to drive.
	Very dense Very soft	SPT > 50. Undrained shear strength (USS) < 20 kPa; exudes between fingers when squeezed in hand.
	Soft	USS 20-40 Kpa; moulded by light finger pressure.
Fine (CLAYS &	Firm	USS 40-75 kPa; can be moulded by strong finger pressure.

GRAVELS) Organic (ORGANIC CLAYS, SILTS SANDS & PEATS)	Stiff	USS 75-150 kPa; cannot be moulded by fingers; can be indented by thumb.
	Very stiff or hard	USS > 150 kPa; can be indented by thumbnail.
	Compact Spongy	Fibres already compressed together. Very compressible and open structure.
	Plastic	Can be moulded in hand and smears fingers.

These terms applicable only to transported soils.

COLOUR

Parameter	Terms
Value	Light, Dark
Chroma	Pinkish, Reddish, Yellowish, Orangish, Brownish, Greenish, Bluish, Purplish, Greyish.
Hue	Pink, Red, Yellow, Orange, Brown, Green, Blue, Purple, White, Grey, Black

PARTICLE SHAPE & COMPOSITION

Characteristic	Terms
Form	Equidimensional, Flat, Elongate, Flat & Elongate
Angularity	Angular, Subangular, Subrounded, Rounded
Surface Texture	Smooth, Rough, Glassy, Honeycombed, Pitted, Striated

STRUCTURE

Soil Type	Term	Identification
Coarse & Fine	Homogenous	Deposit consists essentially of one type.
	Interstratified (Interbedded or Interlaminated)	Alternating layers of varying types or with bands or lenses of other materials.
Coarse	Heterogenous	A mixture of types
	Fissured	Breaks into polyhedral fragments along fissures.
Fine	Intact	No fissures.
	Fibrous	Plant remains recognizable & retain some strength.
Organic	Amorphous	No recognizable plant remains.

APPENDIX B**DOE Water Quality Criteria for Malaysia**

HEAVY METALS	DOE PERMISSIBLE LIMIT OF HEAVY METAL IN DOMESTIC WATER SUPPLY (mg/l)
Cadmium	0.005
Calcium	7.5
Copper	1
Ferum	0.1
Lead	0.05
Manganese	0.05
Nickel	0.011
Zinc	5