1. Introduction.

This is a soil resistivity interpretation report for the proposed development located at Highwood House.

This report details a representative soil model gained from Wenner soil resistivity measurements.

The area surveyed appeared to be of undisturbed ground; ground conditions during the survey were dry.

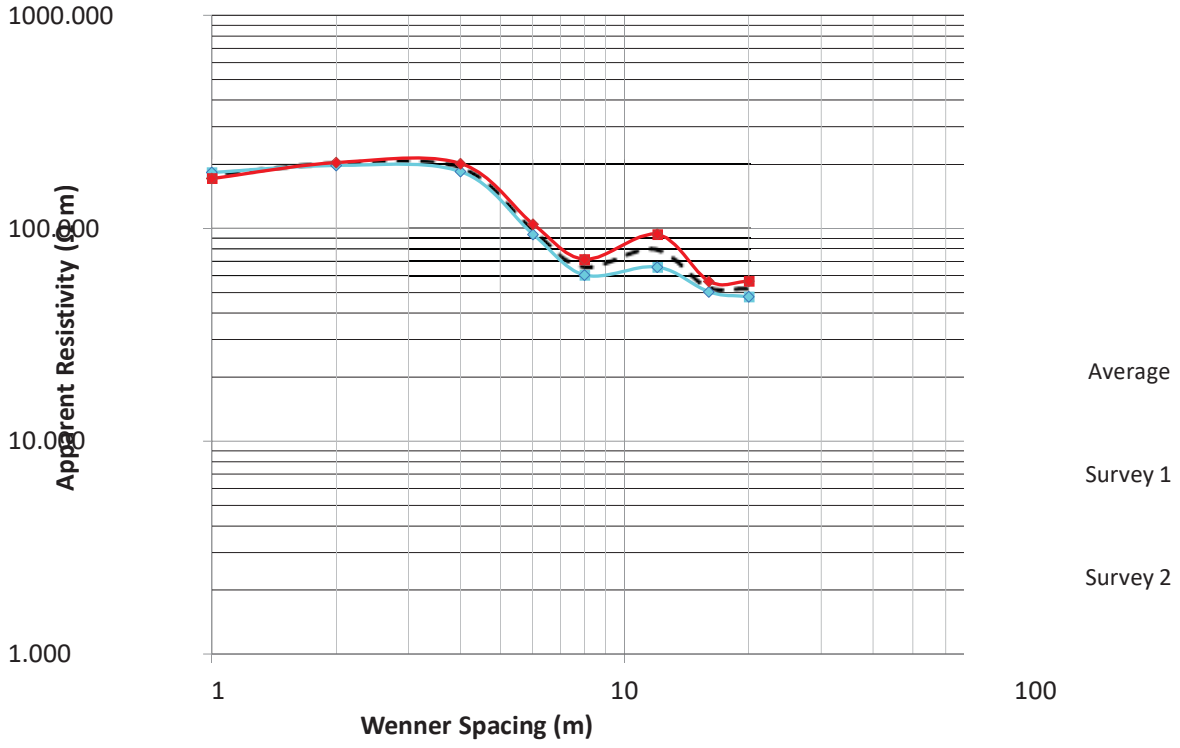
2. Site location.

Large House
Oxfordshire

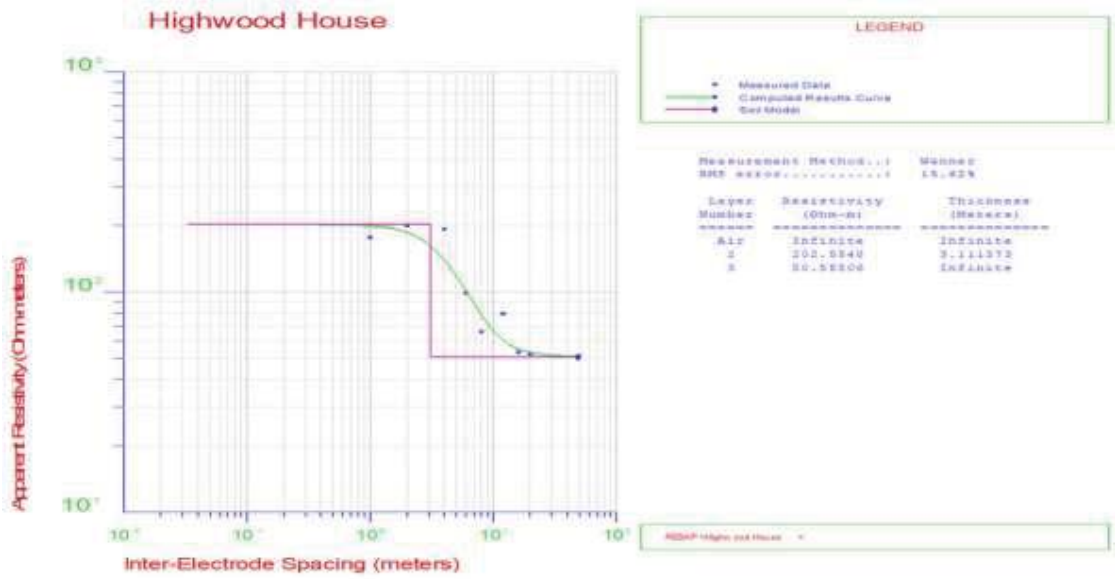
3. Soil resistivity location.

4. Soil resistivity data.

Wenner Spacing	Survey 1		Survey 2	
	Apparent Resistance (Ω)	Apparent Resistivity (Ω/m)	Apparent Resistance (Ω)	Apparent Resistivity (Ω/m)
20	0.38	47.752	0.45	56.549
16	0.5	50.265	0.56	56.297
12	0.872	65.747	1.243	93.720
8	1.201	60.369	1.421	71.427
6	2.478	93.418	2.773	104.540
4	7.35	184.726	8.01	201.313
2	15.7	197.292	16.2	203.575
1	29.1	182.841	27.3	171.531



5. CDEGS RESAP model.



6. Soil resistivity model.

Layer	Resistivity (Ωm)	Thickness (m)
1	202.6	3.1
2	50.6	∞

The soil model given in the table above has been calculated using the CDEGS RESAP module, the input data to derive the same is the mean average of the soil resistivity readings taken on site.

The soil model is a good representation of the ground at site and can be used for any future design calculations required.

Below shows the uniform equivalent model calculated using the CDEGS RESAP module

Layer	Resistivity (Ωm)	Thickness (m)
1	99.9	∞

7. Expected Electrode Resistance Readings

Rod Length	Expected Reading Ω
1.2	72.5
2.4	41.1
3.6	29.3
4.8	22.9
6.0	18.9

During installation testing should be carried out to confirm that the predicted values are obtained.

Significant variations in as installed values may require the soil model to be adjusted.

8. References

1. BS 7430:2011+A1:2015 code of practice for protective earthing of electrical installations
2. BS EN 50522:2022 Earthing of power installations exceeding 1kV a.c.

Mike Dicker

Director