



APPENDIX 5.1

INDICATIVE CUT AND FILL CALCULATIONS

Cut & Fill Summary Note

A summary of the current cut & fill is provided below, with reference to HTS drawing 1458-P400;

Description	Net cut/fill	Fill	Cut	Notes
Baseline per drawing 1458-P400_P10	-8913	7385	-16298	Based on architects drawings dated 31/10/17. This is an overall CUT across the site
Allowing for 30% bulking factor in CUT			-21187	The ground conditions are Made Ground over London Clay. The Made Ground is slightly gravelly Clay, varying in depth between ~4-9m. Therefore assume Clay bulking factor (typically varies between 20-40%)
Including surface water storage			-22827	1640m ³ storage full volume as additional below ground excavation
TOTAL	-15442	7385	-22827	This is an overall CUT across the site

Table 1 – cut & fill volumes (all values in m³)

The cut & fill study estimates that there will be a net cut of ~15500m³ to be disposed of offsite. The volume of earthworks movements is estimated to be ~25000m³.

Assumptions

Existing Site

- The existing site levels are assumed to be lowered by 450mm, prior to the cut & fill, in areas of existing hardstanding. This assumes that this build-up is not useful fill.
- The existing site levels are assumed to be lowered by 600mm, prior to the cut & fill, in areas of existing building. This assumes that this build-up is not useful fill.
- The site preparation works to remove existing surfacing, ground slabs and foundations is estimated to generate ~15000m³ of spoil. This is additional to the values in Table 1.

Proposals

- The proposed formation level (excavation level) is 450mm below the FFL throughout the site, subject to detailed design.
- Soft landscaped areas will require minimum 600thk imported capping layer. This applies to slopes 9 to 14. The imported soil has not been allowed for in Table 1.
- A bulking factor has been assumed per Table 1 above.
- Clay heave has not been included for, this could reach 50-60mm in the centre of an excavation (based on the ground investigation). It is assumed that there is a
- The drainage strategy in terms of surface water attenuation has been included in Table 1. The overall attenuation volume required is ~1640m³. The worst-case scenario is for the full volume to be buried, therefore an additional ~1640m³ cut. The storage is currently intended to be split between a 'BluRoof' and below ground tank (refer to HTS Flood Risk Assessment including drainage strategy). All other excavated material for new below ground drainage has not been assessed.
- Where levels information has not been provided these areas have been excluded from the cut & fill analysis. These areas have been noted on the drawing.