

11. Conclusions & Recommendations

This Geo-Environmental Assessment is based upon the findings of an intrusive site investigation undertaken in December 2021 and January 2022.

It is understood that the site is proposed to be developed for a residential end use.

The Geo-environmental assessment has produced the following key conclusions and recommendations which should be implemented as part of the future redevelopment of the site to ensure suitability for the proposed end-use and to meet the requirements of planning.

Environmental Risk Assessment Summary	
Human Health Risk Assessment	Based on the contamination testing that has been carried out on the site, the risk assessment has indicated that the site poses a negligible risk to Human Health receptors. The natural topsoil and subsoils are considered to be suitable for retention / re-use on site if geo-technically suitable, subject to compliance with a Materials Management Plan (MMP).
Controlled Waters Risk Assessment	During the investigation, no significant evidence of contamination was identified below the site and no evidence of Made Ground was identified. The risk to groundwater / surface water associated with the site is considered very low to negligible and no further risk assessment considered to be warranted in that regard.
Ground Gas / Vapour Risk	Based on encountered ground conditions, gas protection measures are not considered to be required for the site. This recommendation should be confirmed with the relevant authorities prior to construction. No evidence vapours have been identified on site; no further assessment or mitigation is therefore required in that regard.
Ecological Risk	Potential impacts from contamination sources is considered negligible. However, the impact to ecological receptors from proposed construction activities should always be considered.
Geotechnical Assessment Summary	
Foundations	Traditional strip / trenchfill foundations are generally considered appropriate for the proposed development bearing within firm to stiff cohesive and medium dense to dense granular deposits encountered beneath the site, subject to consideration of the loads imposed. An allowable design bearing pressure of 100kN/m² is recommended for trenchfill foundations (up to 1m wide), bearing uniformly in the firm cohesive deposits at a depth of 1m. An allowable design bearing pressure of 125kN/m² is recommended for trenchfill foundations (up to 1m wide), bearing uniformly in the firm to stiff cohesive deposits and/or the medium dense to dense granular deposits at a depth of 2m. At this stage, based on the illustrative site layout a significant number of plots are situated in close proximity to the site boundaries / on-site hedgerows and therefore foundation depths are likely to exceed 2.5m due to tree influence. In addition, unstable and /or low strength strata have been encountered within the southeast of the site. It is considered likely that plots coinciding with these areas will likely require a piled foundation solution.



<i>Floor Slabs</i>	At this stage it is anticipated that both ground bearing and suspended floor slabs may be suitable for the site, subject to developer preference and further assessment of proposed ground levels / tree influence.
<i>Drainage</i>	The cohesive geology encountered across the site would suggest that soakaway drainage is not considered feasible; an alternative drainage solution is therefore likely to be required. The advice of a Drainage Engineer should however be sought to confirm this preliminary assessment prior to construction.
<i>Concrete</i>	Soil results indicate Design Sulphate Class DS-1 and Aggressive Chemical Environment for Concrete Class AC-1 should be used for design purposes on all shallow foundations across the site.
<i>Roads & Hardstanding</i>	Based on the ground conditions identified and testing undertaken, it is considered that a preliminary CBR design values of 2 - 5% should be achieved for road construction design purposes for near surface deposits underlying the site.
Recommendations	
Delineation of any soft cohesive deposits and / or loose granular deposits identified within which coincide with proposed plots.	
Limited SI was undertaken within the northern field (WS04 – WS06) and within the southern central portion of the site. It is recommended that further SI is undertaken in these locations to obtain further ground data.	
Detailed foundation design.	
Further in-situ CBR testing is recommended at formation level once development proposals have been established.	
The drilling of deeper boreholes may be required to aid the design of piled foundations.	
Re-use of materials on-site should be controlled by a CL:AIRE approved Materials Management Plan (MMP).	

