is recommended that a specialist be commissioned to confirm the presence/absence of invasive plants, and any implications on development.

6.7. **Services**

Given the potential for coal at or close to the ground surface at the site, calorific values may be elevated within shallow soils, and as such appropriate protection of services with the potential to generate heat may be necessary. This should be investigated further through site investigation.

6.8. **Soakaways**

Based on the anticipated ground conditions, i.e. sandstone and mudstone, the use of soakaway drainage may potentially be viable. Site specific ground conditions should be investigated further through site investigation.

Should ground conditions be considered potentially viable for soakaway drainage, insitu infiltration tests could be completed in order to derive infiltration rates and aid drainage design.

Owing to the sites sensitivity i.e. underlain by a Secondary A Aquifer, it is recommended that the Local Authority and EA be consulted with respect to any proposed soakaway drainage for the site should soakaways be considered viable.

7. FURTHER INVESTIGATION

The following ground investigation works are recommended to allow foundation design and determination of any potential contamination constraints, and, abnormal costs, in relation to the proposed development:

- Window sample boreholes to investigate near surface soil and groundwater conditions and to allow recovery of soil samples for testing. Standard Penetration Tests (SPTs) to be undertaken within selected boreholes in order to provide geotechnical data for the underlying soils.
- Trial pitting / trial trenching to investigate shallow soil and groundwater conditions beneath the site and to allow recovery of soil samples for testing. Selected trial pit locations will incorporate trial trenching in order to attempt to determine the location of the conjectured fault and coal outcrops.
- Insitu infiltration tests.
- Rotary probing to investigate for the presence / absence of workable coal within influencing distance of the surface (and its thickness / collapse status).
- Chemical and geotechnical laboratory testing to adequately categorise the shallow soils/groundwater.
- Installation of gas / groundwater monitoring wells in selected window sample boreholes, specifically targeted along the site boundaries proximate to off-site landfill sites, and also to monitor mine gas and marsh across the site.
- Gas monitoring - 6 No. monitoring rounds over a 3 month period.
- Reporting.

Intrusive ground investigation works should be carried out by a suitably qualified geoenvironmental consultant.

An ecological survey should be carried out to confirm if any invasive plant species are present on site.

Advice should be sought from appropriately qualified highway and drainage engineers to assess the impact of the site gradient on development aspirations.

Owing to the presence of a quarry high wall and retaining wall feature to the sites western / north western boundary it is recommended that a visual assessment by a suitable qualified consultant is undertaken to ascertain the condition and stability of these features and their potential risks on the proposed development.

APPENDIX A

FIGURES AND DRAWINGS