Geo-environmental Assessment Report

Site Address:
Greenfield Avenue, Northampton

Client: Northampton Council

Report Date: 20th August 2010

Project Reference: JN0329

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INTRODUCTION

Site Location

Greenfield Avenue is located approximately 3 miles to the north-east of Northampton Town centre, in the Arbours area. The subject area comprises a once partially developed section of land within the Eastfields Residential Estate. Until very recently, we understand that the area was largely overgrown. The approximate National Grid Reference at the centre of the site is SP 777 632.

Proposed Construction

At this stage, there are no formal development proposals for the site, although a residential end-use is considered likely and assumed for the purposes of this investigation.

Investigation Brief

The site is vacant, although a small area was fenced off and inaccessible. The investigation involved JCB excavated trial holes. In line with the Client’s instructions, and our quotation, the following was included in our brief for this investigation:

- A desk study and walkover survey.
- 7 No. trial holes excavated by JCB, with in-situ sampling.
- Geotechnical and chemical laboratory testing.
- Geoenvironmental Assessment Report.

Scope

This assessment gives an account of ground conditions, possible problems which may be encountered and likely foundation type based on a desk study, a visual assessment of ground conditions and testing. It is not an engineering design document and should any information be used it must be noted that variations will apply, according to differences in design loading, in techniques used, and in site conditions. Our figures therefore should not supersede the final design.

It is impossible to categorically define the extent of any contamination on site at this preliminary stage, due to the discrete number of sampling locations. Some contamination has been identified by this investigation.

The work and the assessment report are prepared specifically for the Client shown above. Southern Testing Laboratories Limited owes no duty of care and skill to other parties. The recommendations may not be appropriate to alternative development schemes.

The findings and opinions conveyed via this assessment are based on information obtained from a variety of sources as detailed within this report, and which Southern Testing Laboratories Limited believes are reliable. Nevertheless, Southern Testing Laboratories Limited cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

Countersigned

Dr Joe Kelly PhD

Signed

Chris Nolan FGS

20th August 2010

For and on behalf of ST Consult & Southern Testing Laboratories Ltd
Geology

The site is shown on the 1:50,000 British Geological Survey map of the area (Map 185 Northampton) to be underlain by Upper Estuarine.

The Upper Estuarine Series consists of light and dark green and grey mudstone (clays) and silty mudstones (silty clays), with occasional thin bands of black and buff hue, associated with thin limestones and marls.

Historical Ordnance Survey Maps

Copies of historical Ordnance Survey maps dating back to 1887 are included within Appendix B.

The first available map showed the site to comprise an open field, with occasional trees in the central part. Most of the surrounding area was similar, with Bush Hill Spinney about 10m to the east. No trees were shown in 1900, otherwise there was very little change. By 1925, a tree-lined track/path was shown to pass through the site, in a north/south direction, near the western boundary, with an increased tree coverage shown in the fields to the north-east. With the exception of some additional trees, the site remained the same in 1938, although to the west and north-west significant housing development was shown, along with a church about 120m to the south.

By 1961, the site was shown with the development that was present until very recently. This comprised two terraced houses and their gardens in the northern part of the site (the end two plots of a section of terraced housing on Greenfield Avenue that extended off-site to the east), with a domestic garage block just to the south, which occupied the central part of the site. The tree-lined track that ran through the site, near the western boundary, had been shortened, extending only to the central section of the site and no further beyond (either on or off-site). The surrounding areas to the east, west and south were also shown with residential development, with the open fields of Eastfield Park and a Sports ground to the north.

The site remained the same until about 1992, when the trees in the western part of the site were no longer shown, remaining as such to the last map dated 1996. There was also very little change in the surrounding area. We understand from the local authority that the 2 houses were demolished, because of subsidence problems, in the summer of 2009, with the garage block demolished in May 2000.

Environmental Database

The salient features of the environmental database search are summarised in the table below. The full database report, and an explanation of the limitations of the database, are included in Appendix B.

<table>
<thead>
<tr>
<th>Details</th>
<th>Distance (m)</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lainchbury Refrigeration – servicing and repairs.</td>
<td>217</td>
<td>NW</td>
</tr>
<tr>
<td>Meadows Wood Preservation – Damp and dry rot control.</td>
<td>285</td>
<td>NW</td>
</tr>
<tr>
<td>Wheely Clean – Domestic cleaning services.</td>
<td>292</td>
<td>SW</td>
</tr>
<tr>
<td>None recorded within 1 Km of the site.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None within 1 km of the site. There is a surface water abstraction listed, from the lake in Eastfield Park, 500m to the north-east, for amenity purposes.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Geo-environmental Assessment Report

Greenfield Avenue, Northampton

<table>
<thead>
<tr>
<th>Distance (m)</th>
<th>Direction</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollution Incidents</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Substantiated Pollution Incident Register</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Local Authority PPC</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Landfills</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Historic Landfills</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Local Authority Recorded Landfills</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fuel Sites</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Groundwater Protection Zones

On the basis of the Environment Agency website (August 2010), the site does not lie within a groundwater Source Protection Zone (SPZ).

The site is underlain by a Secondary B Aquifer, which relates to the Upper Estuarine deposits.

Flood Risk

According to both the Environment Agency website (August 2010) and the Envirocheck Report, the site does not lie within an area liable to flooding or within a flood warning area.

The nearest surface watercourse is a pond in Eastfields Park, approximately 200m to the north-east.

Underground Workings, Mining and Ground Stability Hazards

A search of our own records indicates that there are no underground workings within 1 km of the site.

The Envirocheck Report indicates that the site has a very low risk/no hazard from landslide, and running sand ground stability hazards, and a low risk from shallow mining hazards. It should be noted that these are generic statements and the reader should refer to the relevant sections contained within this report for site-specific information.

PRELIMINARY CONCEPTUAL MODEL

Potential Sources of Contamination

On Site Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Potential Contaminants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private houses and gardens</td>
<td>Heavy metals, PAHs, and asbestos.</td>
</tr>
</tbody>
</table>

20th August 2009

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4
Garage Blocks | Heavy metals, PAHs, asbestos and petroleum hydrocarbons.

The historical map search indicated that the site was essentially undeveloped until the 1950's/1960's, at which time the construction of the estate had commenced, and two houses and a block of garages partially occupied the site. As such, there are few historic potentially contaminative uses associated with the site, except for the recent use. The potential contaminants include those associated with the construction/use of the estate houses and garages themselves. These may include any imported fill material, petroleum hydrocarbon contamination from any minor fuel/oil spills, and asbestos in the building fabric. The risk rating from these potential on-site sources of contamination is however considered low, at this stage.

Off Site Sources
As with the site itself there are few potential sources of contamination, either contemporary or historic, associated with the surrounding area (generally residential from the same period). These are not considered a significant risk to the subject area.

Preliminary Conceptual Model

<table>
<thead>
<tr>
<th>Sources:</th>
<th>Pathways:</th>
<th>Receptors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapours &amp; Gases: None</td>
<td>Direct ingestion Dermal contact Particulate inhalation</td>
<td>Controlled Waters: Secondary B Aquifer</td>
</tr>
<tr>
<td>Affected Groundwater: None</td>
<td>Plant Uptake</td>
<td>Infrastructure: Services</td>
</tr>
<tr>
<td></td>
<td>Run-off</td>
<td>Structures</td>
</tr>
<tr>
<td></td>
<td>Leaching</td>
<td>Fire/Explosion</td>
</tr>
<tr>
<td></td>
<td>Direct contact</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FIELDWORK

Date of Fieldwork
The fieldwork and walkover survey were conducted on 29th July 2010, at which time the weather was sunny and warm with occasional clouds. The rainfall in the south of England for April, May and June was lower than average, with approximately 47, 64 & 62% of the normal rainfall recorded for each month, respectively.
General Description

The site is of irregular shape and is accessed from Greenfield Avenue, which forms the northern boundary. A pedestrian entrance to Eastfield Park is located opposite the site access, a tree lined thoroughfare, which once traversed the western margin of the subject site (as first shown on the 1925 map). The site is set within the Eastfields Residential Estate and is bound on all sides by gardens. Only the gable end of No.81 Greenfield avenue appears to share the site boundary. Several garages and garden gates do open directly onto the subject area, otherwise most of the site boundaries are formed by gardens and close board fencing. The northern site boundary, that alongside Greenfield Avenue, is formed by a new palisade fence. A small area of the site, on the eastern limb, was fenced off and could not be accessed for the SI works – this part of site is overgrown and appears to be an abandoned garden area. Until very recently, we understand that the site in general was mainly overgrown.

Plate 1: The view west across the garage slab.
Plate 2: No access to an area in the east.

Plate 3: Trial pit TP7, showing concentrated roots in the shallow subsoil.
Plate 4: Trial pit TP2, with the BT cable and steel pipe below.
Vegetation

The site has recently been cleared, as discussed below, and represents an area of grass stubble bounded by intermittent brambles and sycamore trees. The western boundary includes occasional leylandii, eucalyptus and several mature hawthorns. A concrete access track and areas of mixed concrete and asphalt hardstand remain in the SW, probably associated with the former garage block. A small area of the site, on the eastern limb, was fenced off, was overgrown and appeared to be an abandoned garden area.

Local anecdotal evidence suggests that until very recently scrub thistles, nettles and brambles covered the entire site to a height of about 4–5 feet. In addition, we understand that 12 mature fir trees (species Deodora Atlantica - the same species is located in the park opposite) were felled within the western margin of the site approximately 1 year ago. The stumps of these remain, either side of the concrete access track. This concurs with the historic map evidence, presented above.

Topography

The site and immediate area are essentially flat at around 106m AOD, with a rise in levels in the park opposite, to the north.

Existing Buildings

The site is devoid of structures, with only No. 81 Greenfield Avenue sharing the site boundary in the north.

Soils as Found

The soils were generally consistent with that expected from the published site geology and were characteristically variable. Details of the soils encountered are given on the attached logs. For convenience, the soils found are summarised below.

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Soil Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL – 0.20/0.45m</td>
<td>Made Ground/buried topsoil</td>
<td>Concrete and asphalt hardstanding or reworked topsoil with very occasional brick or coal fragments. The concrete sub-bases were a mixture of coarse flint hoggins or part crushed brick. The poor grade asphalt in the SW (TP4) appeared to be largely clinker based, with cinder sub-bases and only little bituminous binding. [Made ground to 1.1m depth was encountered in TP2, the approximate foundation line of No. 85 Greenfield Avenue which was recently demolished. This area principally comprised reworked topsoil and subsoil with minor brick concrete and polystyrene pieces]</td>
</tr>
<tr>
<td>- 1.8/2.2m</td>
<td>Clay</td>
<td>Generally a stiff and hard orange brown and light grey silty CLAY with occasional calcareous gravels. Usually becoming orange brown with a white fissile shelly bed at the base. Often with a notable root presence and fissuring or blockiness.</td>
</tr>
<tr>
<td>- 3.0m+</td>
<td>Clay</td>
<td>Often a two part deposit - Initially a friable green grey plastic clay but often becoming a blue grey mottled clay with some weak lithorelic mudstone structure, and occasional orange brown blotches.</td>
</tr>
</tbody>
</table>

Groundwater was not encountered in any of the trial holes for the short duration during which they remained open, to a maximum depth of 3m.
GEOTECHNICAL RESULTS AND RECOMMENDATIONS

Swelling and Shrinkage

Seven Atterberg Limit tests have been undertaken on the natural clay subsoil from a range of depths. Within 1.5m of the surface, the plasticity indices (PI) were 40-46% - NHBC High Volume Change Potential (VCP). Between 1.5 and 2.25m, the PI's fell in the range 29-38% - which represents a medium VCP. Toward 3m, the less weathered clays appeared to gain a weak lithorelic mudstone structure and samples of this tested had PI's of 25 & 26% - again, medium VCP. Given the significant level of tree coverage (recently felled) and heavy scrub (largely cleared), for new build design, it is considered prudent that NHBC High VCP classification should be considered for the site, as per NHBC Chapter 4.2 guidelines.

Moisture content versus depth profiles were attempted for each of the clay sequences encountered. Profiling should be appraised with the understanding that the weathered soil will have a variable silt, sand and gravel fraction, and lithorelic structure, all of which may influence results. TP3 was undertaken though the concrete road surface and is considered most representative of an un-desiccated profile. In this trial hole, the moisture content was typically around 30% within 2m of surface, falling to around 25% towards 3m. Several moisture deficiencies are inferred within the 1-2.25m depth range. Deficiency is also locally inferred around 3m in TP1 & 4 (although at this depth, lithorelic mudstone structure may be affecting results). TP1 was undertaken at the position of a mature tree stump. Trial TP4 was excavated in a thicket of established brambles. All the profiles are appended.

Groundwater and Soakage Potential

Groundwater was not encountered to a maximum of 3m, which is unsurprising given the heavy clay subsoil encountered. That said – local anecdotal evidence, in reference to the very early days of the estate, indicated that cows were attracted to damp areas in the NW of the site (a former watering point). Following prolonged periods of rainfall it is therefore conceivable that perched groundwater may collect in more granular / voided pockets of made ground near the surface.

The site generally has a heavy clay subsoil and is unlikely to provide adequate permeability rates as might be suited to the use of soakaways. All storm and surface water run-off should be discharged to sewer.

Sulphates

The sulphate content of four natural soils and 5 shallow made ground samples was assessed. The mean of the highest two results obtained was 648mg/kg, and as such the appropriate sulphate design classification is DS-2. As no groundwater was encountered, the ACEC class is AC-1s.

Foundations

The soil sequences encountered appeared significantly desiccated, as discussed above. A deepened trench fill foundation solution might be pursued, although the preliminary evidence suggests that a blanket desiccation of the site to a depth of about 2.25m may have to be considered, deepening locally to in excess of 3m where the recently felled trees were present. As such, a plot-by-plot investigation would have to be considered in order to establish an appropriate dig depth with any confidence. Relatively competent ground sequences were encountered and a design bearing pressure of 125kN/m² is suggested. All foundations should penetrate any superficial topsoil, made ground and desiccated subsoil, and be placed on the firm to stiff underlying natural clays. Guidance also stipulates anti-heave precautions on the inside faces of foundations in excess of 1.5m.

Given the uncertainties regarding the depths of desiccation, consideration could be given to a piled foundation solution, transferring loads to soils at depth and allowing for anti heave protection measures over the top, say, 4m to allow for the depth of desiccation in the area of the recently felled trees.
Settlement
Considered to be within the acceptable limits for the foundation loadings likely for this development.

Floor Slabs
The significant and widespread evidence of clay desiccation within the near surface clay subsoil, warrants consideration of fully suspended floor slabs throughout, over vented sub-floor voids.

Roads / Car Parking
The immediate natural subsoil is generally of a stiff nature, but likely to be desiccated. For the purpose of preliminary assessment, an equilibrium CBR of 3% could be considered, and the formation assumed to be non-frost susceptible at this stage (subject to confirmatory testing).

Construction Materials
It is unlikely that the existing topsoil can be reused (see section below). Some of the existing hardstanding and sub-base gravels may be reusable in construction. The asphalt and clinker sub-grades in the SW should be removed from site, however, as discussed below.

ENVIRONMENTAL RESULTS AND RECOMMENDATIONS

Soil Contamination Results
The findings of the desk study research and the intrusive investigation undertaken to date suggest little in the way of significant potential on-site sources of contamination, beyond a 40/50-year partial occupancy with residential housing and a garage block. There are also no known significant off-site sources of contamination. On the basis of the desk study findings, the fieldworks locations were selected to provide good general coverage.

By way of a preliminary assessment of soil contamination, selected samples from the trial holes have been submitted for laboratory analysis, the results of which are appended.

A total of 5 samples, 4 of the fill and buried topsoil and one of the natural clay, were analysed for our Key Contaminants Suite. The results of these tests have been compared to screening levels, which are themselves based on current industry guidance. The derivation of the various screening levels adopted, are discussed in the appended Analytical Framework. A residential end use is proposed and, as such, the results are assessed in this context. In addition, because of the potential for minor fuel/oil spills on site (due to the former partial occupancy with domestic garages), three samples were screened for petroleum hydrocarbons. We should stress, however, that there was no evidence of hydrocarbon impact in any of the trial holes excavated on site, or on the site surface in general (in terms of the latter, particularly in the area of the former garage slabs).

With the exception of the shallow asphalt and ashy/cinder sub-base analysed from TP2, the other four samples of made ground/buried topsoil and natural clay tested were free from significant contamination relative to a residential end-use. This concurs with both the historical evidence for the site, which suggested few likely sources of contamination, and the observations made on site. The ashy track recovered from TP2 had a high concentration of PAH's (a total concentration of 1300 mg/kg), including a Benzo(a)pyrene concentration of 90 mg/kg (this compares with a screening of value of 1 mg/kg for residential sites). Although not significantly contaminated with any of the other determinants analysed for, this material in general (anywhere else on site, for example) would represent an unacceptable risk to the end-users, certainly where it coincided with proposed private garden areas. It may be possible to leave such material below areas of hardstanding, but further analysis
may be necessary to confirm this, along with liaison with the regulatory authorities. At this stage, it would be prudent to assume the excavation and removal of this layer where it occurs on site.

As a precaution, although there was no visual or olfactory evidence of fuel-related contamination on site, due to the potential source from the domestic garages, three samples were screened for petroleum hydrocarbons. Two were recovered from the area of the former garages (TP5 and TP6), with the third being the natural soil below the ashy layer found to be contaminated in TP4. Two of the samples tested had concentrations of <10 mg/kg, whilst the natural clay recovered from below the ashy track had a background concentration of 48 mg/kg. None of these results indicate significant petroleum hydrocarbon contamination, which concurs with the visual and olfactory evidence and no remediation is considered necessary in these areas.

**Land Gas**

As depicted in the conceptual model, the desk study concluded that land gas did not constitute a significant risk to the development site. As such, no specific gas protection measures are recommended.

**Waste**

The developer, as the waste producer, will ultimately be responsible for the material removed from site. The chemical analysis appended will provide information to assist in classifying any soils to be removed from site to landfill. It appears, from the analysis obtained to date, that site arisings are likely to largely constitute an inert waste stream, with the likely exception of the ashy track material. The contents of this report should be forwarded to tip operators for their own assessment, however, to confirm classification of the soils for off-site disposal, and whether they can accept this material. Waste Acceptance Criteria (WAC) testing may be requested for confirmation of the materials classification.

**Radon**

Reference was made to BRE 211, 2007 RADON: Guidance on protective measures for new dwellings.

Annex A (Map B): No radon protection is needed.

**Conclusions and Recommendations**

1. The soils tested from the site were generally free from significant contamination and do not constitute a significant risk to the receptors. The exception was the ashy track material observed in TP4 and any similar material on site. This should be excavated and removed, certainly from proposed garden areas, as part of the basic remediation requirements.

2. Any future private garden areas should be provided with 300mm of certified clean topsoil, which will be more than adequate to protect the end users from the very minor contamination on site. In particular, any blacktop and ashy sub-base that coincides with new garden areas should be excavated and removed from site.

3. The topsoil on site is unlikely to be re-useable in private gardens due to being overlain by made ground in most places and, as such, successful separation seems unlikely. As such, a suitable off-site source should be sought, unless additional testing can prove otherwise.

4. The previously inaccessible area in the eastern part of the site should be the subject of an investigation at a later date.

5. Although not anticipated, a careful watch should be maintained, for any other areas of more significant contamination that come to light during the groundwork's. Any such areas will require inspection and possibly additional testing to fully assess any risk. Possible areas may include beneath the domestic garages and any associated drains etc and the previously inaccessible area discussed in point 4.
6. The developer, as the waste producer, will ultimately be responsible for the material removed from site and additional waste classification (including WAC testing) may be required by the accepting tips to confirm the classification of the material being taken off-site.

These recommendations will be subject to the approval of the regulatory authorities, particularly the local environmental health officer and the Environment Agency, but also the NHBC, if and when development commences.
**GENERAL GUIDANCE FOR USE OF DESK STUDY ASSESSMENT REPORT**

The assessment report is written on the basis of desk-based research of the items as listed, and a walkover survey. Appropriate intrusive investigation and testing is required in order to accurately predict many of the elements considered herein. Such investigation and testing is outside the scope of this desk study report. The following comments are made with reference to the report sections:

<table>
<thead>
<tr>
<th>Environmental Database</th>
<th>An environmental database report is included. This provides site-specific searches of a number of databases owned by others (e.g. Environment Agency), which are by nature limited in content and quality.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groundwater Protection Zones</td>
<td>The comments made in this section are based purely on interrogation of the Environment Agency website on the date shown. Confirmation should be sought from the relevant Regional Office of the Environment Agency. Groundwater source protection zones provide an indication of the risk to groundwater supplied from potential pollutants. Three zones are usually refined (inner, outer, and total catchment) which are based on the travel times from any point below the water table to the source (e.g. a spring, well or borehole).</td>
</tr>
<tr>
<td>Underground Workings</td>
<td>Relates to interrogation of our own database of underground workings (which itself is largely based on data from the Chelsea Speleological Society), together with information on the mapped geology, and the contents of the Environmental Database. The search cannot therefore be classed as exhaustive.</td>
</tr>
<tr>
<td>Flood Risk</td>
<td>The comments made in this section are based purely on interrogation of the Environment Agency website on the date shown. Confirmation should be sought from the relevant Regional Office of the Environment Agency. The indicative floor plain maps published on the website indicate where flooding from rivers, stream, water courses or the sea is possible.</td>
</tr>
<tr>
<td>Swelling and Shrinkage</td>
<td>Refers to ground movement caused by clay soils drying out in summer or wetting in winter, particularly near trees. Reference should be made to NHBC Standards Chapter 4.2.</td>
</tr>
<tr>
<td>Groundwater</td>
<td>Groundwater levels may vary considerably from season to season and year to year. Long term monitoring would be required to accurately assess the groundwater regime.</td>
</tr>
<tr>
<td>Soakage Potential</td>
<td>The Environment Agency must be consulted regarding the use of soakaways on site. Specific field tests will be required for detailed design</td>
</tr>
<tr>
<td>Bearing Capacity</td>
<td>May be assessed as good, average or poor. Where a value is given, this should be regarded as guidance only and not as a design value</td>
</tr>
<tr>
<td>Settlement</td>
<td>May be assessed as low, average or high. The assessments are based on the proposed construction or, where none is given, on two-storey housing. High settlement would generally indicate that the soils are unsuitable for supporting structural loads</td>
</tr>
<tr>
<td>Floor Slabs</td>
<td>Generally assessed as suspended or ground bearing with reasons given.</td>
</tr>
<tr>
<td>Landslip</td>
<td>May be assessed as low, moderate or high risk. Landslip issues are extremely complex and would require specific testing and risk assessment for design.</td>
</tr>
<tr>
<td>Roads</td>
<td>The most important element of any road construction is drainage, to which careful attention should be paid. It is noted that road subgrades can soften rapidly if allowed to become wet during construction. This softening can give rise to substantial increases in costs. Where a value is given, this should be regarded as guidance only and not as a design value.</td>
</tr>
<tr>
<td>Conceptual Model and Contamination Comments</td>
<td>General comments are given based on the findings of the desk study and walkover survey. Further detailed consideration including a full conceptual model, testing and risk assessment will be required for design.</td>
</tr>
<tr>
<td>Land Gas</td>
<td>General comments are based on the findings of the desk study, and walkover survey, long term monitoring would be required to confirm.</td>
</tr>
<tr>
<td>Radon</td>
<td>An assessment is made on the basis of the BRE Publication Radon-Guidance on protective measures for new dwellings (BR211-1999) to which the reader is referred.</td>
</tr>
</tbody>
</table>