

Application to determine if prior approval required for change of use of an agricultural building to flexible business use (Class E) as per Schedule 2 Part 3 Class R.
GLEN HOLT Gainsborough Road Girton Newark On Trent 25/10/2023



LAND CONTAMINATION DESK TOP STUDY
25-10-2023

Phase 1 Land Contamination Survey

Assessment/Preliminary Risk

Phase 1

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Land Contamination Plan

1.0 Land Contamination Assessment/Preliminary Risk Assessment

The purpose of a Phase 1 Land Contamination Assessment or Preliminary Risk Assessment (PRA) is to establish the previous uses of the land under consideration or land nearby or adjacent to it, and to identify potential sources of contamination, receptors and pathways. It is important to identify all past uses of the site, and adjacent or nearby sites, since pollutants have the potential to travel away from the source, depending on the geology, groundwater and surface water of the area.

The Phase 1 Land Contamination Assessment should contain an outline conceptual site model based on the findings of a desktop study and site walkover that characterises all actual or potential pollutant linkages. This will then form the basis of any subsequent work undertaken such as intrusive investigations, risk assessment etc and set out any necessary remediation works required as part of a subsequent Phase II assessment. Alternatively the findings will rule out the need for further work at an early stage.

Desk Top Study (Desk Study)

1.0.1 The desk top study comprises a search of available environmental information and historical maps, which can be used to identify changes in land usage from old maps, trade directories and other publicly available historical records, to determine the physical characteristics of the site and to identify the likelihood of contamination. This should not just be constrained to the application site. A study of adjacent sites and the surrounding area should also be provided as contaminants can migrate from elsewhere.

1.0.2 Information about the site can be obtained from many sources, including

- Previous investigations and monitoring
- Historical maps (e.g. O.S. 6" to a mile County Series)
- Trade directories
- Aerial photographs
- Local authority records of development on site and in the vicinity
- Current use of the site and adjacent sites
- Environment Agency
- Local history groups
- Utility companies
- Land registry

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- Industry profiles
- British Geological Survey
- Petroleum Officer
- Company records
- Records of pollution incidents (local authority, Environment Agency, Health and Safety Executive)
- Local knowledge
- Coal Authority

1.0.3 This initial part of the PRA should include a detailed site plan showing the site location, extent and boundaries of the site in context with the findings of the Desktop study.

1.1 Site Walkover

1.1.1 A simple walkover survey of the site has been conducted to identify pollution linkages not obvious from the desk study.

1.1.2 Having identified potential contaminative uses within the desktop study a site walk over survey will also help to locate potential problem areas on the ground.

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1.1.3 Contamination of soil, groundwater and building fabrics all impart valuable visual information. Old foundations, backfilled areas, subsidence and drainage may indicate changes of use, and identify areas requiring detailed sampling. Features to look for include :

- Buildings
- Surface materials
- Underground and above ground tanks
- Surface disturbance, subsidence and discoloration • Chemical stores
- Dirty' work areas
- Waste storage areas
- Adjacent properties

1.1.4 The report produced following the site walkover should include a description of structures, soils and vegetation.

1.2 Conceptual Site Model

1.2.1 After carrying out a detailed desktop study and walk over survey it should be possible to identify pollutant linkages and develop a preliminary conceptual site model . The conceptual site model (CSM) comprises three elements:

- Potential sources of contamination
- Potential receptors that may be harmed
- Potential pathways linking the two

1.2.2 The CSM is a written and diagrammatical summary of the environmental processes on a site and its surrounding area, the potentially significant sources of contamination, pathways through which contaminants can travel, and receptors that eventually could be harmed. This must be included at all stages of the Site Investigation. A CSM will provide a summary of the site including details such as;

- Its current status, history, geology and hydrogeology.
- Any potential contaminants, pathways and/or receptors.
- A summary of 'Significant Pollutant Linkages' — where there is a potential link between the potential contaminants and receptors.
- Any uncertainty in the information collected.

Pathways Migration pathways between the above potential contaminant sources and receptor targets could include, with respect to the various human and environmental receptors / targets:

Pathways to Animal / Human Targets: o

On-site (Construction Workers, End Users and members of the Public)

Dermal contact.

Ingestion of soils.

Inhalation of dusts, etc.

Off-site

Inhalation of dusts, etc.

Pathways to environmental Receptors / Targets:

In ground migration/leaching to ground waters.

Risk Assessment

1.2.3 The final part of the Land Contamination Assessment is then the Risk Assessment and Conclusions derived from the conceptual site model addressing each potential source, pathway and receptor in turn and should indicate if any, what the risk of contamination is.

1.3 Conclusion to Assessment

1.3.1 The conclusion should then state whether the findings of the PRA are satisfactory and that no further work is required i.e no risk to human health or whether additional Phase 2 contamination works (intrusive site investigation and risk assessment) are required to identify and confirm potential pollutant linkages.

See checklist A in Appendix AI for more information on what information should be submitted as part of a Phase 1 Land Contamination Assessment..

1.3.2 If it can be confirmed that your site is underlain solely by 'natural ground' and there is no evidence of any potential contamination then there MAY be no need to carry out any further investigation. However, if there are significant amounts of 'made ground' (e.g. rubble and cinders used in the past to level up the ground; or signs of a former infilled agricultural pond, etc.) or evidence of contamination (e.g. oil staining from a former heating oil storage tank; or pieces of broken asbestos sheeting in the soil from a former garage on the site etc.) then you will need to engage professional consultants to carry out a detailed Phase 2 investigation of the site.

1.3.3 The Phase 2 investigation, consists of excavations into the ground and the recording of the ground conditions. Samples will need to be taken from the excavation at appropriate depths, this is normally from made ground or where there is staining of the soil or odours. These samples can then be analysed for contaminants. The record of ground conditions can be used to assess if there is any likelihood of the ground producing gas, either from organic matter or hydrocarbon contamination. Gas wells may need to be installed and a programme of sampling undertaken. If potential ground water contamination has been identified it will also be necessary to install ground water monitoring wells and a programme of ground water sampling and analysis undertaken. A competent geo-environmental consultant will be familiar with this type of investigation. Full guidance on producing a Phase 2 report can be found in the Councils supplementary guidance "Phase 2: Intrusive Ground Investigations and Quantitative Risk Assessment".

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2.0 Key Points

- It is important to identify the potential for contamination to be present at an early stage in order that unexpected costs and delays can be avoided should a potential problem be identified during development works.
- Only a Phase 1 Land Contaminated Assessment is required at the application stage and although further investigations may be documented these can be conditioned if required. Examples of likely conditions can be found in Appendix 2.
- It is advised that a Phase 1 assessment is carried out by a suitably qualified professional.
- The Assessment should produce a conceptual site model that characterises all plausible pollutant linkages. This will form the basis of the Preliminary Risk Assessment and conclusions of the Phase 1 assessment as well as any subsequent work undertaken as part of a Quantitative Phase 2 Risk Assessment.
- An example of a basic Phase 1 Assessment can be found in appendix A3.

References (Useful Documents)

MANDATORY GUIDANCE

- The Contaminated Land (England) Regulations 2000
- Contaminated Land (England) (Amendment) Regulations 2012. • The Environment Act 1995
- The Environmental Protection Act 1990
- Department for Communities and Local Government, 2012. National Planning Policy Framework.
- Department for Environment, Food and Rural Affairs, April 2012. Environmental Protection Act 1990, Contaminated Land Statutory Guidance. The Stationery Office Ltd.

ADVISORY GUIDANCE

- Model Procedures for the Management of Contaminated land (CLR11): 2004 Department for Environment Food and Rural Affairs & Environment Agency, www.environmentagency.gov.uk/commondata/105385/model_procedures_88_1483.pdf
- Environment Agency, Human health toxicological assessment of contaminants in soil (Science Report Final SCO50021/SR2), 2009
- Environment Agency, Updated technical background to the CLEA model (Science Report Final SCO50021/SR3), 2009
- CLEA software V1.06 licence agreement (PDF, 114KB)
- BS 10175:2011 — Investigation of Potentially Contaminated Sites — Code of Practice
- Environment Agency/NHBC R&D Publication 66 - 'Guidance for the Safe Development of Housing on Land Affected by Contamination', 2008
- www.communities.gov.uk/documents/planningandbuilding/pdf/pps2annex2.pdf
- DOE (Department of the Environment) Contaminated Land Research Report: Guidance on Preliminary Site Inspection of Contaminated Land: 1994.
- DOE Contaminated Land Research Report: Sampling Strategies for Contaminated Land: 1994.
- BRE Construction of New Buildings on Gas Contaminated Land: 1991.
- Environment Agency, Methodology for the Derivation of Remedial Targets for Soil and Agency R&D Groundwater to Protect Water Resources, R&D Publication 20,1999
- DoE, 1995 Industry profiles (various titles)
- CIRIA, 1995 Remedial Treatment for Contaminated Land, SP 104, Classification and Selection of Remedial Methods
- DoE, 1994 Guidance on Preliminary Site Inspection of Contaminated Land, CLR2

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- DoE, 1994 Sampling Strategies for Contaminated Land
- EA, 2001 Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination
- INFO-PM2b CIRIA, 1996 A Guide for Safe Working on Contaminated Sites, R132
- CIRIA C659, Assessing risks posed by hazardous ground gases to buildings, 2006
- The Chartered Institute of Environmental Health: The Local Authority Guide to Ground Gas, 2009
- Chartered Institute of Environmental Health and Land Quality Management, Generic Assessment Criteria for Human Health Risk Assessment, 2006
www.lqm.co.uk/lqmpress/0823°/020GACV020web%20brochure.pdf
- British Standards Institute, BS5930:1999 Code of practice for site investigation, 1999
- www.bsi-qlobal.com/en/Shop/Publication-Detail/?pid=000000000030176112
- Environment Agency, Guidance on Requirements for Land Contamination Reports, 2005
www.environmentagency.gov.uk/commondata/acrobatidevguidev1_1155225.pdf
- Environment Agency, Remedial Targets Methodology — Hydrogeological Risk Assessment for Land Contamination, 2006 publications.environmentagency.gov.uk/pdf/GEH00706BLEQ-e-e.pdf

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Checklists for Phase 1

A checklist is attached below of the necessary information required. Please note that the checklist is not exhaustive and a site may need further information may be required.

CHECKLIST A

Phase 1 Land Contamination Assessment/PRA

A Requirements

1 Site area in hectares.

[1.1 ha](#)

2 Description of site and surroundings

[Fairly flat site containing agricultural building surrounded by hedges](#)

3 Details of desk study researches undertaken.

[4 1975 Historical map](#)

5 Information on past and current activities on the site.

[6 Small Holding](#)

7 Historical Ordnance Survey maps and site plans and if available, aerial photographs
[\(See attached\)](#)

8 Hydrology.

[Not Required](#)

9 Hydrogeology including factors such as aquifer classification, position of water table, groundwater flow direction, generic details and surface groundwater interaction.

[Not Required](#)

10 Relevant water quality factors i.e. river quality, discharges, abstractions.

[11 Not Required](#)

12 Details of any IPC processes or radioactive substances relevant to the site.

[None](#)

13 Information on site drainage and other man-made potential pollutant pathways, e.g. underground services.

[None](#)

14 Identification of potential contaminants of concern and source areas.

[None](#)

15 Details of waste disposal activities at or in the vicinity of the site.

[See Landsearch](#)

16 Details of any site visits/ walkovers conducted.

[Site Walkover did not give rise to any evidence of contamination](#)

Description and justification of next steps proposed at the site, e.g. carry out site investigation and quantitative risk assessment (including timescale).

[Intrusive Site investigation not required](#)

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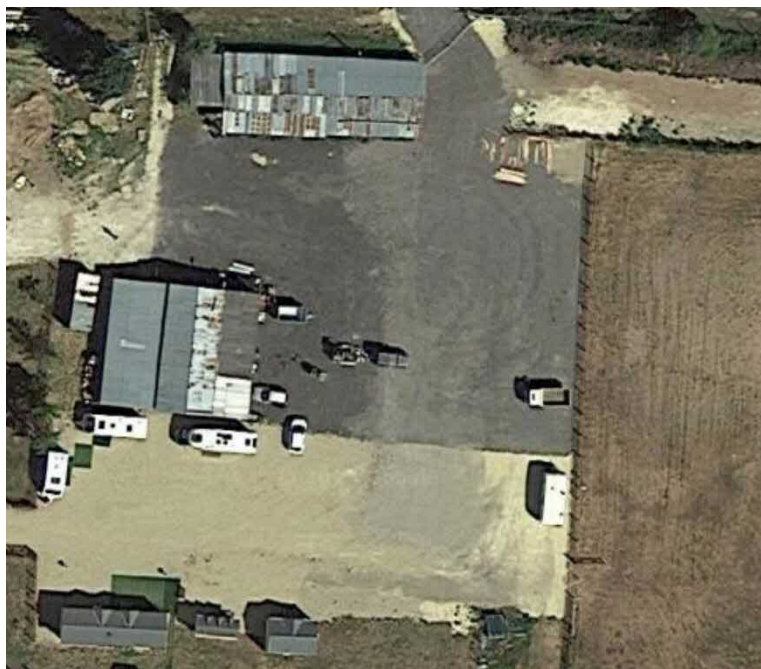
DESK TOP STUDY

See Appendix for Landcheck by Landmark



The site is located to the east of Gainsborough Road Nr Girton

The site consists of a farm yard situated to the rear of a dwelling "Glen Holt" and is accessed from New Lane to the north of the site



ite.

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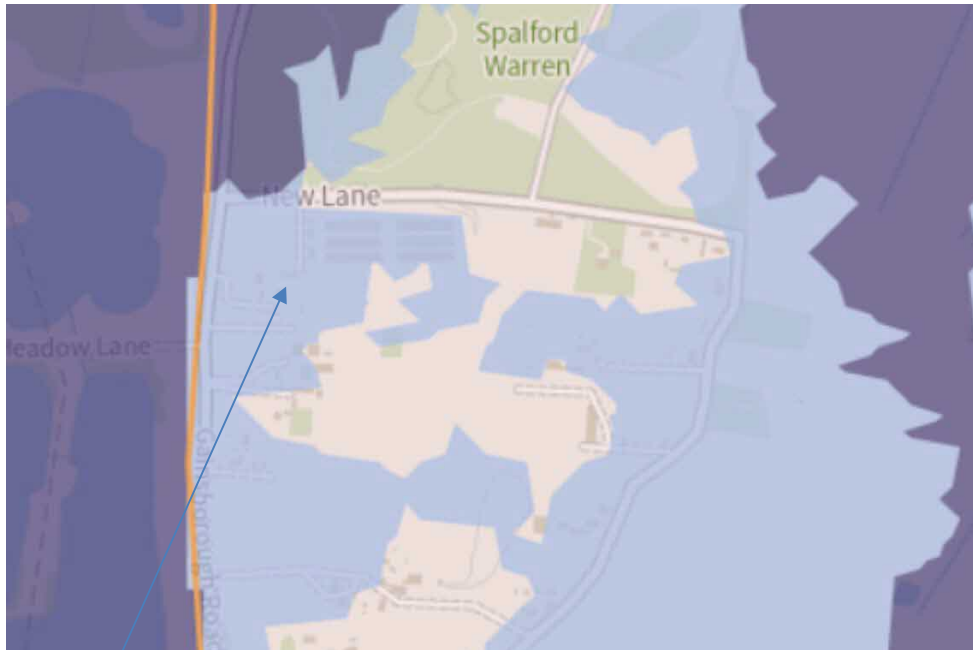
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To the north of the site is a self contained poultry rearing unit in six number steel framed buildings.

To the south is a small commercial unit .

Both approx. 100m from the application site



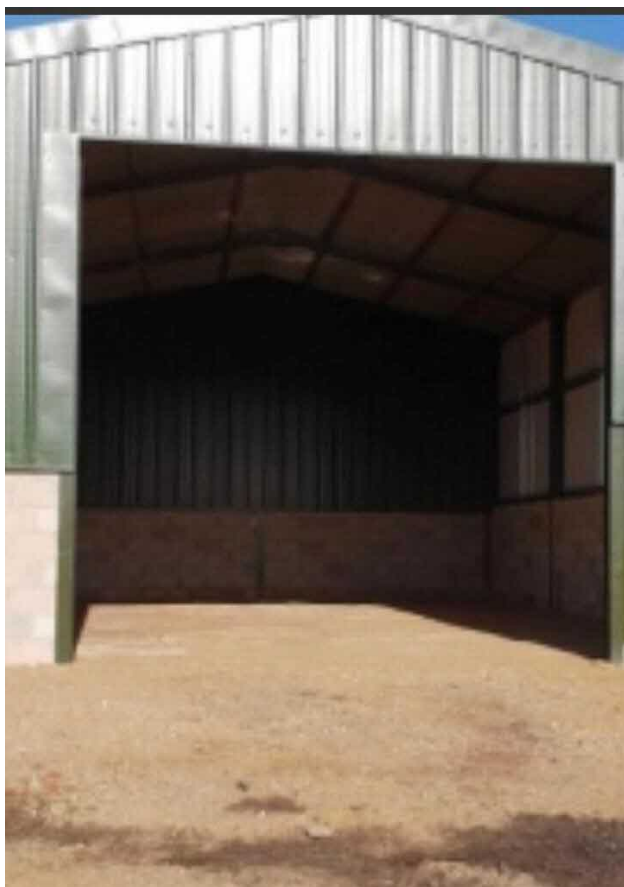
SITE

The site is in the Environment Agency's flood zone 2

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Existing metal Cladded store on site with concrete floor.

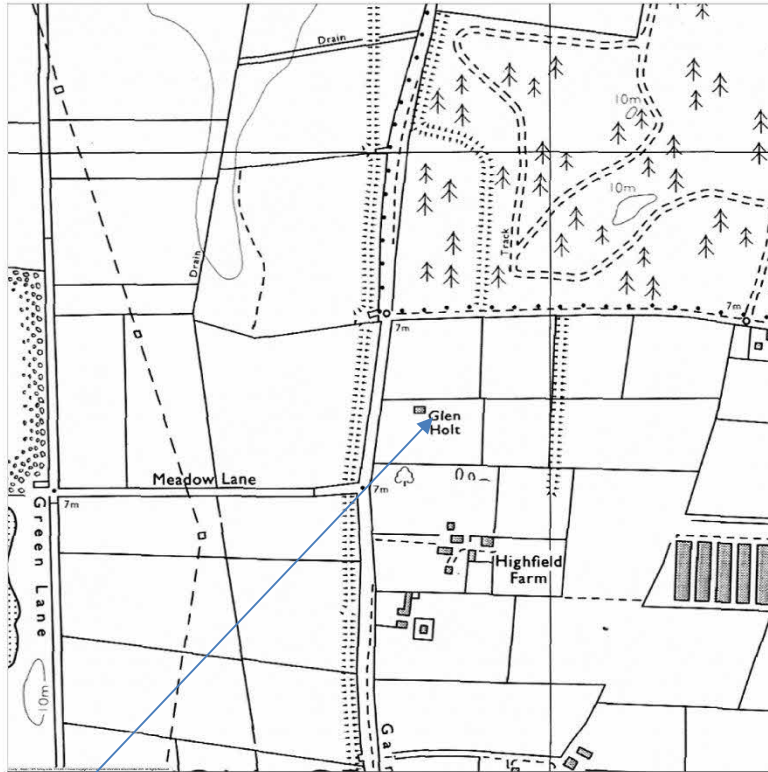
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The western boundary of the site consists of a timber close boarded fence. The northern boundary again consists of timber post and rail fence. The southern boundary is defined by a timber close boarded fence.

The 1975 historical map seen below shows no development other than the original dwelling "Glen Holt"



Landmark
INFORMATION GROUP
Landmark Historical Map
County:
Published Date(s): 1975
Originally plotted at: 1:10,000

Site

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WALK OVER

The surface of the site is covered in permeable hard standing with very little grass or landscaped areas.

The existing building has a concrete floor which would prevent any contaminates leaching from the ground.

There is no evidence of cement fibre roof sheets /gutters/ trims visible on site

The site inspection gave no indication of land fill or any made up ground. No visible contaminates seen on site.

The existing building is cladded with metal sheets.

CONCLUSIONS

The existing concrete floor would have served as a barrier to prevent any leaching from the underlying ground.

The desk study has not identified any landfill sites and / or significant areas of in filled ground within or within 250m of the site. Furthermore, the site specific assessment advises that no radon protection measures are required at the site.

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WALK OVER

The surface of the site is covered in a mixture of concrete hard standing and permeable hard standing with very little grass or landscaped areas. The underlying sub strata is predominately limestone.

A redundant corn mill is situated in Barn 13 (Drawing No.SGFD/15/AS/003).No of the mill components give rise to contamination.

All redundant rearing buildings have concrete floors which would prevent any debris from the sheds leaching into the ground.

The cement fibre roof sheets /gutters/ trims and debris found adjacent to the Plant Room (7) is dealt with in the asbestos survey.

The site inspection gave no indication of land fill or any made up ground. No visible contaminates seen on site.

An elevated petroleum spirit storage tank is present in the northeast corner of the site.

A further storage tank containing household heating oil is installed within an existing outbuilding adjacent to the existing dwelling. There does not appear to be any leakage or splashing of the stored liquid to the existing floor or surrounding masonry.

CONCLUSIONS

As such, we would advise that it is likely to be necessary for the ground to 600mm deep including and for 4M around surrounding the site of the existing petroleum storage tank to be removed from the proposed garden/dwelling areas for appropriate disposal off-site at a suitably licensed recycling / waste management facility.

The void to be filled with clean compacted hard-core under any new buildings or licenced imported topsoil in the garden areas.

Recommendation of action to brick store housing Heating Oil Tank.

The existing brick outbuilding will be demolished and concrete floor to the existing building to be removed for appropriate disposal off-site at a suitably licensed recycling / waste management facility.

The existing concrete floor would have served as a barrier to prevent any spillage from the tank entering the underlying ground.

A new floor construction incorporating a standard 1200guage poly DPM would serve as a further barrier to severer any pathway from what would be very very limited contamination found in the ground under the existing concrete floor.

The existing remaining 225mm wide brick wall which formed the north wall of the tank storage building should be taken down to 1500mm above existing floor level along the total width of the existing tank store and rebuilt using new masonry.

The desk study has not identified any landfill sites and / or significant areas of in filled ground within or within 250m of the site. Furthermore, the site specific assessment advises that no radon protection measures are required at the site. However it is always prudent to provide taped joints to the damp proof membranes fitted to all new floors with the membrane carried over the cavity to the external leaf.