



Goldfinch
ENVIRONMENTAL LTD

**PROPOSED RESIDENTIAL
DEVELOPMENT
FORMER WINDMILL GARAGE
WISBECH ROAD
LONG SUTTON
LINCS.**

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**GEOENVIRONMENTAL
DESK STUDY**

Report Ref.: 0427/1

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BSc FGS

Date:

April 2017

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PROPOSED RESIDENTIAL DEVELOPMENT
FORMER WINDMILL GARAGE
WISBECH ROAD, LONG SUTTON
LINCS.

1. INTRODUCTION.

1.1 General.

This report describes the findings of a geoenvironmental desk study undertaken by Goldfinch Environmental Limited, on the instruction of Mr & Mrs G Hartwell (the Client), via the offices of G R Merchant Architects at a site known as Windmill Garage, 34 Wisbech Road, Long Sutton, Lincs..

A site location plan as Figure 1, and an existing and proposed site plans (Figure 2a and Figure 2b), have been included towards the back of this report to assist the reader.

2. LIMITATIONS.

This report is for the sole reliance and use of the Client. Any Third Party coming into possession of this report relies on it at their risk, unless written permission is expressly sought from, and provided by, Goldfinch Environmental Limited. The author owes them no duty of care and skill. Goldfinch Environmental Ltd accepts no responsibility or liability for the consequences of this document being used for purposes other than that for which it was commissioned and the assessments provided herein should not be relied on as a legal opinion.

The findings and opinions expressed are relevant to the time of the site visit and information review and should not be relied upon to represent conditions at substantially later dates. The assessments and opinions given in this report are based upon information available at the time of the report. Where additional information comes available which may affect or identify a need to review our conclusions or assessments we request the opportunity (and reserve the right), to review the information and where warranted, modify our assessment / opinion in part or wholly, accordingly.

The purpose of this desk study report was to determine the historical use of the site and adjacent areas from searches of Public Registers and a review of available historical maps and included a site reconnaissance ('walkover') survey together with brief internet searches. The outcome of these activities is described below and this information was used to construct a conceptual model for the site from which a risk assessment was completed in the context of the proposed residential development of the site.

The risk assessment was based on the source-pathway-receptor framework, with respect to the geoenvironmental condition of the site in the context of various sensitive receptors. Goldfinch Environmental Ltd have based this desk study upon the sources given in this report, and believes them to be reliable but cannot and does not guarantee the authenticity or reliability of the data it has relied upon.

This desk study does not include any geotechnical considerations pertaining to the site as these were outside the agreed brief.

The recommendations given in this report are based on guidance and best practice in place at the time of issue of the report, the information available at the time of the investigation, the nature of the indicated proposed development and associated end user behaviour patterns. Should any of the foregoing change at any time, then this report should be reviewed in the context of proposed changes.

The absence of indicators in search data, or from on site observations does not rule out their presence in other parts of the site. This desk study report has been based on information supplied in the 'GroundSure' report and its component parts included at Appendix 1 towards the back of this report, discussions with the Client and in-house searches.

3. LEGISLATIVE & REGULATORY SETTING.

The Environmental Protection Act of 1990 created the framework for the identification and remediation of contaminated land. The Act defines “contaminated land” as any land, which appears by the Local Authority to be “in such a condition, by reason of substances, in, on, or under the land that significant harm is being caused or there is significant possibility of such harm being caused, or, pollution of Controlled Waters is being, or is likely to be, caused”.

Land potentially affected by ‘contamination’ is a material consideration for planning purposes together with its relationship with ‘regulatory intervention’ (Part IIa), and ‘voluntary’ investigation (which includes redevelopment of sites which may be affected by contamination). The Model Procedures (CLR-11, Environment Agency 2004), provide a generic framework indicating key technical activities applicable in each of these contexts.

The management of land contamination broadly comprises three components that are identified as ‘Risk assessment’, ‘Options appraisal’ and ‘Implementation’. These, in turn, determine if any *unacceptable* risks exist, ascertain the most appropriate remediation strategy for the site and, finally, demonstrate that the strategy will be effective.

In accordance with this and other current guidance, where a ‘land quality’ risk assessment is required each ‘Relevant Pollutant Linkage’ (RPL, formerly referred to as “source-pathway-receptor” framework), is separately identified and a level of risk attached. This is documented in the form of a ‘Conceptual Model’.

The outcome of the assessment of established, plausible relevant pollutant linkages is used to determine qualitatively the need for further investigation, or remediation with ensuing mitigation of the determined unacceptable risk. (In accordance with the Model Procedures and Regulatory preference, detailed remedial measures should be provided in a separate phase).

The risk assessment takes account of the local environment, end user behaviour patterns, and the nature of the development in relation to proven ‘unacceptable’ risk. This is the approach advocated by current guidance (CLR-11 and BS10175 etc), and therefore has been adopted in the assessment of this site.

4. SITE LOCATION AND DESCRIPTION.

4.1 Introduction

This site description and the following sections of this Desk Study report are specific to the curtilage shown in Figure 2 towards the back of this report.

A site visit was carried out during 12 April 2017 the purpose being to:-

- I. Collect additional/relevant information about the site its environs and any site-specific potential contaminants, pathways and receptors.
- II. Record any aspects of the site not revealed by documentary searches. (e.g. the presence of above- or belowground hydrocarbon storage tanks.).
- III. Collect any information that will assist in the planning of any subsequent phases of field investigation where the Desk Study deems this is necessary.

Approximate Grid Reference ⁵44138 ³22007 refers.

The site comprised a subrectangular shaped plot of land on the eastern side of the public highway (Wisbech Road) in Long Sutton, Lincolnshire.

Topographic levels at the site, by visual inspection, appeared to change little across the site but were possibly slightly reduced (i.e. lower) compared to the public highway.

The site was bounded to the north and south by residential dwellings, to the east by land in agricultural use and to the west by the public highway (Wisbech Road) with residential property beyond.

At the time of the site walkover survey the site was capped mainly with concrete including the footprint of a large building with soft cover of long grass with occasional small patches of exposed soils to the periphery. A number of vehicles were being stored mainly at the front of the site as can be seen from Photograph 1 below.



Photograph 1: General View of the Site from the West (Front).

Near the northwestern corner of the building a series of metal covers were noted. It was understood from the Occupier that these were to four underground fuel storage tanks (circled red) that had been in use for fuel retail during the history of the site. These are shown in Photograph 2 below.



Photograph 2: View of the Tanks in the NW of the Site.

It was understood from the Occupier that these tanks, which were considered to be approximately 500 gallons each in capacity (3 x petrol and 1 x diesel), had not been used for at least 40 years and had been 'decommissioned' and infilled. There was no evidence of staining of surfaces around this feature at the site. This feature is shown more clearly in the aerial photograph supplied by the Occupier and included here as Photograph 3. The ventilation pipes were also still in place and were attached to the northwestern corner of the building, circled blue, in Photograph 3 below.



Photograph 3: Aerial View of the Site – Tanks circled red.

The only building at the site was of brick construction over a concrete slab floor with a roof formed from corrugated panels which had a potential (but 'low') asbestos content and was in use as a car repair workshop. Access could be gained via steel roller shutter doors of which there were two in the western (front) elevation, with a third in the southern elevation of the structure.

A further tank was noted against the rear (eastern) elevation of the building as shown in Photograph 4 below. This contained oil for heating the workshop.



Photograph 5 shows the surfaces within and nearby the tank footprint. The reader should note there were no odours or staining of external surfaces or nearby soils associated with this potential source of contamination.

The site Occupier understood the need for the removal (with appropriate duty of care documentation), of these potential contamination sources as part of the redevelopment of the site.

The southern elevation of the building was being used as a storage area as can be seen in Photograph 6 and 7 below.



Items being stored in this area included: wooden pallets, sectional metal, empty oil drums, plastic containers, logs, textiles, metal computer 'carcasses', gas cylinders, empty paint tins (within a plastic crate) and occasional car parts. The surfacing in this part of the site was asphaltic in nature therefore it is difficult to discern in the photographs that the exposed surfaces in this part of the site are relatively stain-free.

The area to the rear (eastern side) of the building was also mainly hard surfaced with soft cover to the periphery. As referred above a heating oil tank was present in this area together with various items which included: a compressor, a boat, two cars, redundant tyres, road barriers, a cement mixer and plastics. In the rear of the site further items being stored/parked included two white containers, wooden pallets, plastic boxes, wooden pallets and an 'IBC'.

Internal inspection of the building showed it was of 'double height' but single open area where vehicle repairs/storage was being carried out together with a repaint area where 'small scale' vehicle repainting activities were being carried out as a 'Spraybake' facility was included within the building as shown in Photograph 8 and 9 below.



Photograph 8: Internal View of the Building.

There were several cars in the building together with hydraulic ramps and small power and hand tools as would be reasonably expected for such a facility.



Photograph 9: Internal View of the Building.

The reader will note that where exposed the concrete slab floor was reasonably stain-free.

There were no signs of unusual staining or odours in the exposed soils to suggest impact by potential contamination from historic site usage.

Following visual inspection of the site there were no notable features with regard to land contamination other than the referred tanks and stored vehicles and occasional small weathered ('aged') oil stains which would be removed off site with the hardstanding once construction was underway. In addition, although the site had been subject to previous 'development' there was no apparent evidence of:~

1. The presence of Made Ground other than inert concrete area as referred above.

2. The presence or storage of potentially leachable materials/chemicals other than the referred tanks.
3. Demolition or dispersal of contaminated rubble or other materials.
4. Importation of potentially contaminated fill onto the site.

5. SITE HISTORY.

5.1 Historical Maps.

Where the attached maps are compiled from a composite of editions, the year of map upon which the majority of the site may be found is quoted below. These are reproduced at Appendix 1. Annotation, as it appears on the maps, is indicated by italics.

Land use in excess of 250m from the site is considered of potentially negligible to low risk to the application site and on that basis is generally excluded from the summary provided below (unless record review by this author suggests otherwise). However, should the reader require this additional detail, full disclosure records are included in Appendix 1 towards the back of this report.

(The reader should note at this point that occasionally on the older map editions the site boundaries can be slightly 'shifted' relative to more recent maps.).

1887 Edition {County Series - Scale 1:10 560}

The site was shown as an undeveloped plot of land in a rural setting.

Surrounding land was sparsely developed.

Land to the south of the site was annotated '*Roman Grange*'.

'*Brunswick Mill (Corn.)*' was established on land to the north west of the site.

The '*Bourn & Lynn Joint Railway*' had its nearest approach between approximately 300-350m to the north of the site.

1887 Edition {County Series - Scale 1:10 560}

There were no apparent changes to the site or its immediate environs.

Land to the west of the site was not shown on this map edition.

1888 Edition {County Series - Scale 1:2 500}

The north western corner of the site was now encroached by a building which adjoined a second building off site to the north of the Application site.

There were no apparent further changes to the immediate environs of the site at this scale of mapping.

1903 Edition {County Series - Scale 1:10 560}

There were no apparent further changes to the site or its immediate surroundings at this scale of mapping.

1904 Edition {County Series - Scale 1:2 500}

There were no apparent further changes to the site or its immediate surroundings at this scale of mapping.

1929 Editions {County Series - Scale 1:10 560}

There were no apparent changes to the site.

There were no further pertinent land use changes to the immediate environs of the site.

1950 Edition {County Series - Scale 1:10 560}

There were no apparent changes to the site.

There were further minor developments to the surrounding environs at this scale of mapping.

1958 Edition {Provisional - Scale 1:10 560}

There were no apparent changes to the site at this scale of mapping.

1964 Client Supplied Aerial Photograph



1971 Client Supplied Aerial Photograph



1971 Edition {National Grid - Scale 1:2 500}

The site had undergone development as shown by a change in the number and layout of structures established at the site. This map edition clearly showed a large rectangular building located in the centre-east of the site with dotted annotation showing possible hard surfacing areas or other subordinate structures.

Land to the north and south of the site had undergone development.

Land to the northwest of the site was annotated '*Millbank Nurseries*'.

A Builders Yard was established on the northwestern side of Millbank Nurseries.

1972 Edition {National Grid - Scale 1:2 500}

The site and surrounding land were not shown on this map edition.

1974 Edition {National Grid - Scale 1:2 500}

The site and surrounding land were not shown on this map edition.

1974-5 Edition {National Grid - Scale 1:10 000}

There were no apparent further changes to the site or its immediate surroundings at this scale of mapping.

1980 Edition {National Grid - Scale 1:2 500}

The site and surrounding land were not shown on this map edition.

1986-90 Edition {National Grid - Scale 1:2 500}

There were no apparent further changes to the site or its immediate surroundings at this scale of mapping.

1989-94 Edition {National Grid - Scale 1:2 500}

This edition appeared to be a combination of four other map editions. This may be the reason for the lack of any clarity in the detail of the map.

1990-4 Edition {National Grid - Scale 1:2 500}

The site was shown to be developed. A large building was shown to occupy the site and a square structure towards the approximate centre-west of the site was a canopy associated with the forecourt area of the garage.

There were no apparent changes to surrounding land use in the context of land contamination.

1991 Edition {National Grid - Scale 1:10 000}

There were no apparent changes to the site or surrounding land use in the context of land contamination.

1994 Edition {National Grid - Scale 1:2 500}

The site and surrounding land were not shown on this map edition.

2002 Edition {Raster - Scale 1:10 000}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

2010 Edition {National Grid - Scale 1:10 000}

There were further changes to the site as a former structure was no longer shown in the approximate centre-west of the site.

There were no apparent changes to the surrounding environs with respect to land contamination.

2014 Edition {National Grid - Scale 1:10 000}

There were no apparent changes to the site or surrounding environs with respect to land contamination.

5.2 Public Registers.

A search of public register information has been made using an Internet-based system. A disclosure report is reproduced at Appendix 1. The following commentary is restricted to entries within a 250m search radius of the site. Appendix 1 should be referred to for details on entries beyond of this range.

5.2.1 Historical Industrial Sites

There were nineteen records for the category 'Potentially Contaminative Uses identified from 1:10 000 scale mapping' within this dataset for the referred search radius. Supplied information indicated two of them were for the site, three of them were within 50m of the site and the remaining fourteen were located between 51 and 139m distant from the site and were for: 'Garage' (x2); 'Nursery' (x2); 'Unspecified Mill' (x3); 'Corn Mill'; 'Unspecified Tank' (x10) and 'Unspecified Disused Mill'.

There were three records for the category 'Additional Information – Historical Tank Database' within this dataset for the referred search radius. Supplied information indicated none of them were for the site, none of them were within 50m of the site and the remaining three were located between 118 and 120m distant from the site and were for: 'Unspecified Tank'.

There were no records for the category 'Historical Energy Features Database' within this dataset for the referred search radius.

There were no records for the category 'Historical Petrol and Fuel Site Database' within this dataset for the referred search radius.

There were three records for the category 'Historical Garage and Motor Vehicle Repair Database' within this dataset for the referred search radius. Supplied information indicated two of them were for the site, none of them were within 50m of the site and the remaining one was located approximately 196m distant from the site and were for 'Garage'.

There were no records for the category 'Potentially Infilled Land' within this dataset for the referred search radius.

5.2.2 Environmental Permits, Incidents and Registers.

There was one record for the category 'Records of Part A(2) and Part B Activities and Enforcements' within this dataset for the referred search radius. Supplied information indicated this was located approximately 166m distant from the site and was given as 'No Enforcements Notified'.

5.2.3 Landfill and Other Wastes.

There were no records within this dataset for the referred search radius.

5.2.4 Current Land Uses.

There were four records within this dataset for the referred search radius. Supplied information indicated one of them was for the site, none of them were within 50m of the site and the remaining three were located between 78 and 166m distant from the site and were for: '*Vehicle Repair, Testing & Servicing*'; '*Chimneys*'; '*Petrol and Fuel Stations*' (x2).

5.2.4.i Petrol & Fuel Sites.

There were two records within this dataset for the referred search radius. Supplied information indicated none of them were for the site, none of them were within 50m of the site and the remaining two were located between 195 and 197m distant from the site and were for: '*Mrh Main Road*' whose status was '*Open*' and '*Long Sutton*' whose status was '*Obsolete*'.

5.2.5 Geology.

There were no records for the site within the category 'Artificial Ground and Made Ground'.

There were records listed within the category 'Superficial Ground and Drift Geology present beneath the site'. Supplied information indicated Tidal Flat Deposits (Clay and Silt).

The Bedrock & Solid Geology was given as Ampthill Clay Formation (Mudstone).

5.2.6 Hydrogeology and Hydrology.

For the category 'Are there any records of Strata Classification in the Superficial Geology within 500m of the site' a 'Yes' response was provided. Supplied information indicated the site was underlain by a 'Unproductive' aquifer.

For the category 'Are there any records of Strata Classification in the Bedrock geology within 500m of the site' a 'Yes' response was provided. Supplied records showed that the site was underlain by an 'Unproductive' Aquifer.

There were no records for the category 'Groundwater Abstraction Licences' within the referred search radius for the site.

There were no records for the category 'Surface Water Abstraction Licences' within the referred search radius for the site.

There were no records for the category 'Potable Water Abstraction Licences' within the referred search radius for the site.

There were no records for the category 'Source Protection Zones' within the search radius for the site.

There were no records for the category 'Groundwater Vulnerability and Soil Leaching Potential' for the site.

There were no records of Environment Agency information on River Quality available within 1500m of the site.

There were no records for the category 'Detailed River Networks' within the search radius for the site.

There were ten 'Surface Water Features' reportedly within 250m of the study site that were not represented on mapping.

5.2.7 Flooding.

There were Environment Agency Flood Zone 2 floodplains within 250m of the site.

There were Environment Agency Flood Zone 3 floodplains within 250m of the site.

There was a 'Medium' risk of flooding from Rivers and Sea for the site.

There were no Flood Defence areas within the search radius of 250m for the site.

There were no areas benefitting from Flood Defences within 250m of the site.

There were no areas used for Flood Storage within 250m of the site.

For the category 'What is the maximum BGS Groundwater Flooding Susceptibility within 50m of the study site'. The response 'Not Prone' was given in the supplied information.

For the category 'What is the BGS confidence rating for the Groundwater Flooding susceptibility areas' the provided response was 'Not Applicable'.

5.2.8 Designated Environmentally Sensitive Sites.

There were no records for the site within this dataset.

5.2.9 Natural Hazards.

Search records indicated there was a 'Moderate' maximum risk of natural ground subsidence.

5.2.10 Mining.

Searches indicated there were no coal mining areas within 75m of the site.

There were no 'Non-Coal Mining areas' within 50m of the study site (Chalk).

There are no brine affected areas within 75m of the site.

5.2.11 Radon.

Searches indicated that the site is in an area where less than 1% of properties are above the 'Action Level' therefore radon protection measures are not necessary in extensions and new dwellings.

6. PRELIMINARY QUALITATIVE RISK ASSESSMENT.

6.1 Introduction.

There are three factors that are taken into account whilst undertaking a qualitative risk assessment. These have been described in Section 3 of this document. At the time of this report, the site had been proposed for residential development.

6.2 Conceptual Model.

Source (s) (Potential)	Pathway	Target	Risk
Soil: The site had existed as 'undeveloped' plot of land until between the issue of the 1958 and 1971 historic maps. Aerial photographs supplied by the Occupier showed the site was developed by 1964 with few changes up to the time of the site walkover survey carried out by this Author during 12 April 2017. There were no site-specific indicators of potential soil-borne contamination other than the referred four underground fuel storage tanks, which were decommissioned more than thirty years ago, which were due for removal and the heating oil tank at the rear of the existing building and potential asbestos content in the roof fabric of the building. Visual and olfactory indicators of potential contamination immediately nearby off site were not noted.	❖ Dermal contact, ingestion and inhalation	• Present users • End users • Construction workers • General public	• Low • Low-Med • Low-Med • Low
	❖ Wind erosion and atmospheric dispersion	• Adjacent properties • General public • Ecological Systems • Archaeological Sites & Monuments	• Low • Low • Low • n/a
	❖ Leaching	• Adjacent properties • Shallow groundwater • Services/construction materials • Plant life • Surface water • Ecological Systems • Arch. & Monuments	• Low • Low • Low • Low • Low • Low • Low
Shallow groundwater: The site overlies 'Unproductive' aquifers, which were not considered to be pollution sources.	❖ Groundwater migration	• Adjacent properties • Deep groundwater • Services/construction materials • Plant life • Ecological Systems • Archaeological Sites & Monuments	• Low • Low • Low • n/a • Low • Low
	❖ Dermal contact, ingestion and inhalation	• Present users • End users • Construction workers • General public	• Low • Low • Low • Neg-Low
Gas: Measurable (background) concentrations of ground gas would not (reasonably) be anticipated to be present as a result of historical site use or the underlying natural geology.	❖ Direct inhalation ❖ Soil migration ❖ Services migration	• End users • Construction workers • Buildings • Ecological Systems • Arch. Sites & Monuments	• Low • Low • Low • Low • Neg
Negligible Risk Defined as the site should be considered suitable for present or future use and environmental setting. Contaminants unlikely to be present, which might have unacceptable impact on key targets. Low Risk Defined as the site should be considered suitable for present or future use and environmental setting. Contaminants may be present but unlikely to have unacceptable impact on key targets. Medium Risk Defined as the site may not be suitable for present or future use and environmental setting. Contaminants are probably present and might have unacceptable impact on key targets. High Risk Defined as the site is probably or certainly not suitable for present or future use and environmental setting. Contaminants probably or certainly present and likely to have an unacceptable impact on key targets.			
Notes: n/a = not applicable			

The risk assessment follows below:-

6.3 Targets.

Potential targets, in the context of the risk assessment (based on the relevant pollutant linkage), where a plausible pathway can be proven, are discussed as follows.

At the time of this report, the proposed scheme comprised residential development.

6.3.1 Human Health (Site Users & Construction Workers)

The site had a limited documented developmental history as described above. There is limited potential for the presence of Made Ground, which is reasonably anticipated to comprise concrete and other hard surfacing with possible aggregate subbase underneath it. These Made Ground materials are considered 'inert' and therefore not 'plausible' sources of contamination.

Four ('decommissioned') underground fuel storage tanks remain at the site with a further heating oil tank adjacent to the rear elevation of the building. It is anticipated that these will be removed during the development of the site. Equally, the same is anticipated with the fabric of the building where potential asbestos-content has been identified.

Based upon the foregoing and the final paragraph of this report, regarding 'unanticipated contamination:-

A Low-Medium risk has been identified until proven otherwise. It is suggested that once the tanks and possible asbestos has been removed off site under appropriate duty of care that this risk may be revised and downgraded to 'Low'.

6.3.2 Services and Construction Materials

6.3.2.1 Concrete & Potable water supplies.

Adverse effects on services and construction materials may be anticipated where soils are impacted by localised raised/lowered pH values, PAH's, TPHs and metals contamination and where these are present in Made Ground materials. However, in this instance and based on the absence of Made Ground and the foregoing:-

A Low risk has been identified.

6.4 Landscaping & Planting

Based on the foregoing a 'Low' risk is presented to this receptor.

6.5 Groundwater (Controlled Waters)

The site is underlain by 'Unproductive' Aquifers. However, there remains the potential for small quantities of perched groundwater in any superficial fills (or Made Ground), where these are present. However, searches indicated in this instance that the presence of significant thicknesses of Made Ground would not be reasonably anticipated given the documented history of the site.

A Low risk to deeper groundwater has been identified.

6.6 Ground Gas

Measurable concentrations of soil gases (predominantly carbon dioxide) would not be reasonably anticipated to be present as a function of any made ground present. However, where present, any granular overburden would mitigate the risk of ground gas buildup via natural ventilation of ground gas to atmosphere.

On the basis of the foregoing:~

A Low risk has been identified.

7. RECOMMENDATIONS FOLLOWING PRELIMINARY RISK ASSESSMENT.

7.1 Overview.

The desk study information (including the outcome of the walkover survey), showed the site had a limited documented developmental history as described above.

There is limited potential for the presence of Made Ground, which is reasonably anticipated to comprise concrete and other hard surfacing with possible aggregate subbase underneath it. These Made Ground materials are considered 'inert' and therefore not 'plausible' sources of contamination.

Four ('decommissioned') underground fuel storage tanks remain at the site with a further heating oil tank adjacent to the rear elevation of the building. It is anticipated that these tanks (and any 'grossly contaminated' soils) will be removed during the development of the site. Equally, the same is anticipated with the fabric of the building where potential asbestos-content has been identified. These locations are coincident with possible driveways and permanent hard cover in the proposed development thereby mitigating any risk to human health from these features in the completed development.

It is recommended that 'duty of care' documentation is forwarded to the Environmental Health Team at the LPA to demonstrate that these sources have been appropriately 'managed'.

Based upon the foregoing and the final paragraph of this report, regarding 'unanticipated contamination:-

A *Low-Medium* risk has been identified until proven otherwise. It is suggested that once the tanks and possible asbestos has been removed off site under appropriate duty of care that this risk may be revised and downgraded to 'Low'.

The site walkover survey and the searches carried out as part of this Desk Study indicated that there were no readily identifiable off site sources of contamination.

On that basis, and subject to the final paragraph in this report (in blue text), the need for a Phase 2 intrusive investigation is considered *unwarranted*.

The opinions and recommendations in this report are subject to the agreement of the Regulators.

8. CONCLUSIONS.

This geoenvironmental desk study prepared by Goldfinch Environmental Limited was undertaken on the instruction of Mr & Mrs G Hartwell (the Client), via the offices of G R Merchant Architects at a site known as Former Windmill Garage, 34 Wisbech Road, Long Sutton, Lincs..

The site had a limited history of development and had seen use as a garage, which had also included a limited amount of fuel retail, and was proposed for residential use. Five fuel storage tanks (4 x underground and 1 x aboveground) were noted at the site and possible asbestos content in the roof fabric of the building. 'Management' of these features has been discussed in Section 7 of this report.

There were no notable features present in the context of off site land contamination.

Desk Study searches have shown that the site rests on Clay and Silt.

The Bedrock & Solid Geology was given as Ampthill Clay (Mudstone).

An overall Low-Medium risk is associated with the site *subject to the final paragraph in this report in blue text below*. Following management of the referred sources this risk rating can be downgraded to 'Low'.

Recommendations for the need for further work (or otherwise) have been discussed in Section 7 of this report.

Also, at all times especially once any necessary groundworks have commenced, the final paragraph below applies regarding 'unanticipated' contamination.

The reader should note that the opinions, recommendations and conclusions in this report are subject to the agreement of the Local Authority who are the final arbiters in these matters.

Based on the foregoing, a Low-Medium risk to construction workers and services installations has been associated with the site until proven otherwise. Site personnel, particularly groundworkers, should follow sound health and safety welfare practices that will further mitigate this level of risk.

Should unanticipated contamination be suspected, or revealed during any groundworks, then the area should be temporarily isolated and further advice sought by a suitably independent qualified person and a management strategy for these occurrences should be submitted to the Local Authority for their approval prior to proceeding, as required by Regulatory Offices.

FIGURES

Approximate Site Location

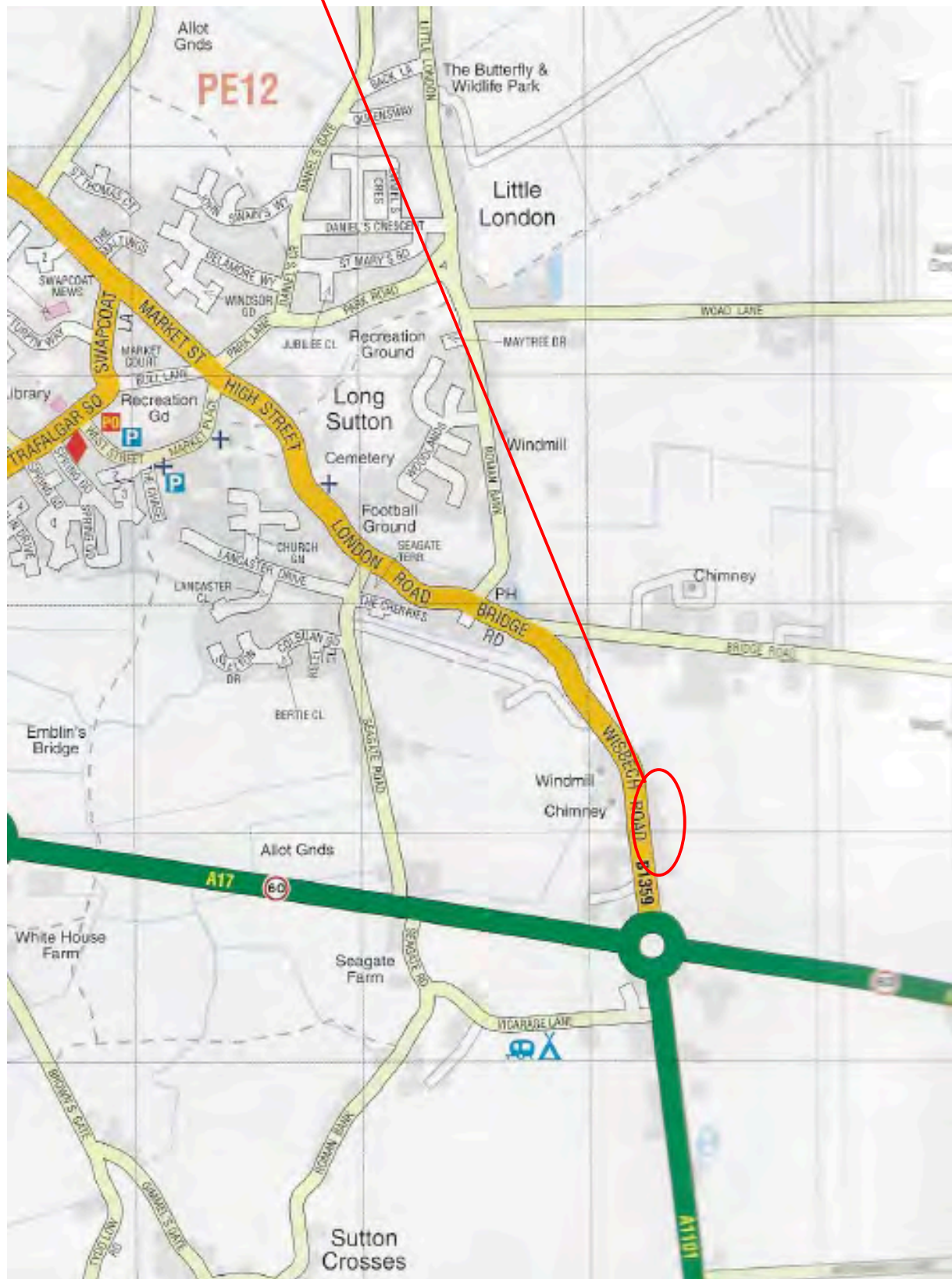


Figure 1

Site Location Plan

Ref: 0425/1

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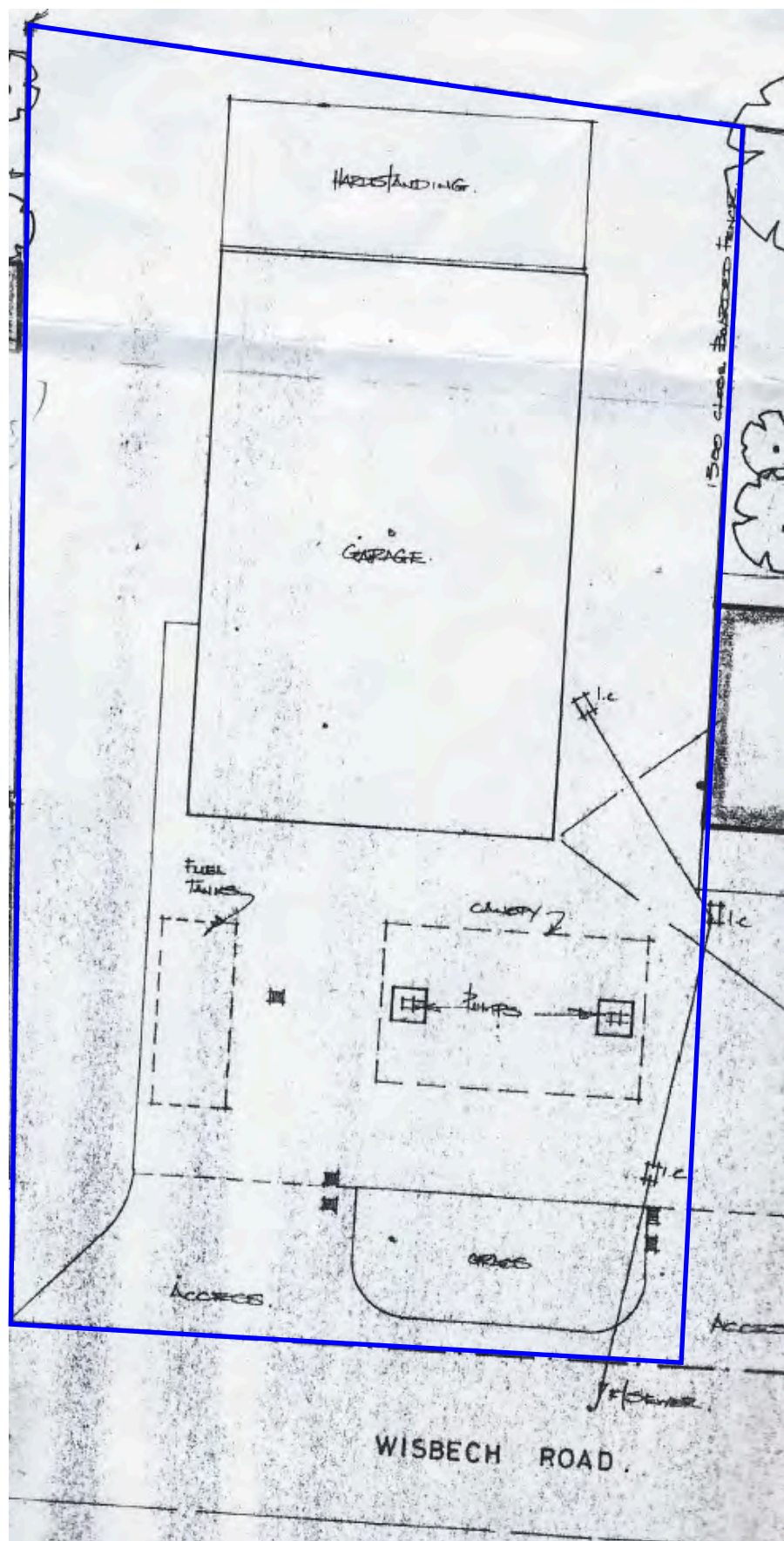


Figure 2a

Existing Site Plan

Ref: 0427/1

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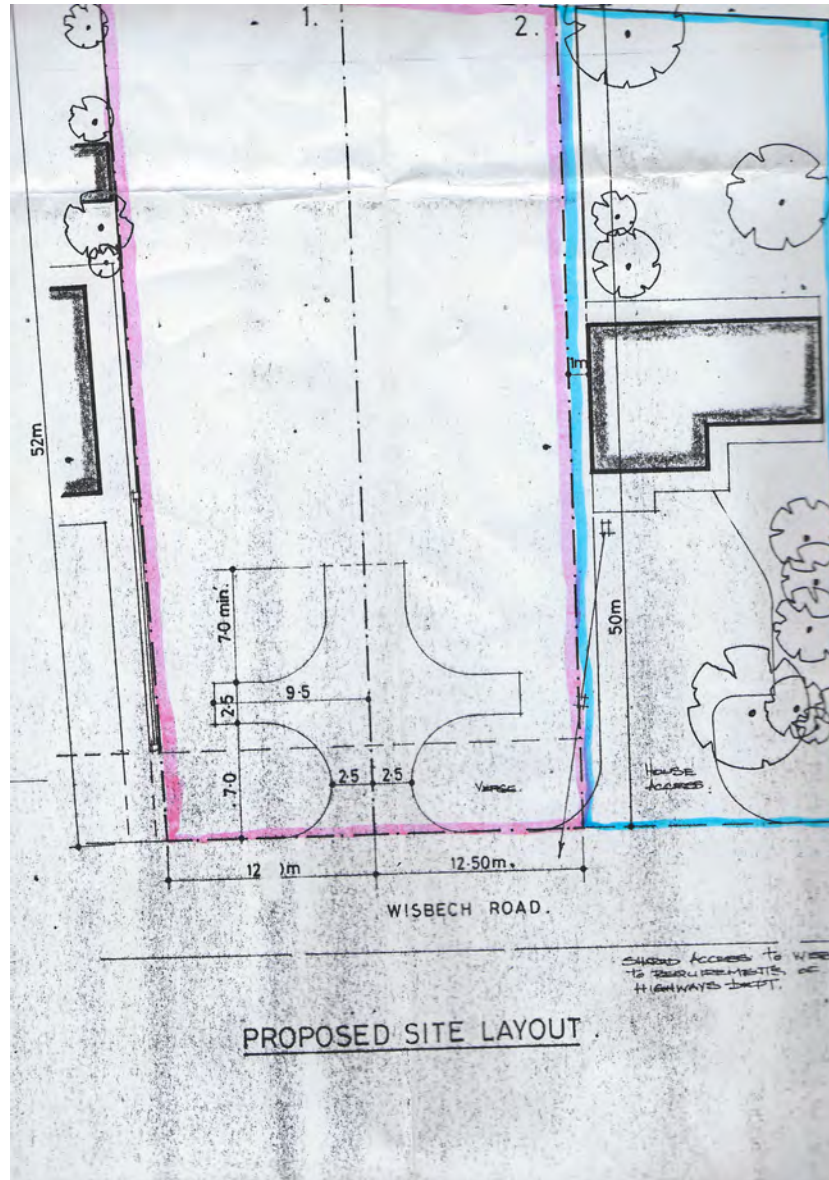


Figure 2b

Proposed Layout Plan

Ref. 0427/1

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