COPY

Goldfinch
ENVIRONMENTAL LTD

PROPOSED RESIDENTIAL DEVELOPMENT
LAND OFF CROSSGATE LANE & MILESTONE LANE
PINCHBECK
SPALDING
LINCOLNSHIRE

COPY

PROPOSED RESIDENTIAL DEVELOPMENT LAND AT MILESTONE LANE & CROSSGATE LANE PINCHBECK SPALDING LINCOLNSHIRE

GEOENVIRONMENTAL DESK STUDY

Report Ref.: 0265/1

Prepared by :

D Sargeant
D Sargeant

Date:

January 2015

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

CONTENTS

1.	INTRODUCTION	3
2.	LIMITATIONS	4
3.	LEGISLATIVE AND REGULATORY SETTING	5
4.	SITE LOCATION AND DESCRIPTION	6
5.	SITE HISTORY	10
6.	PRELIMINARY QUALITATIVE RISK ASSESSMENT	16
7.	RECOMMENDATIONS FOLLOWING PRELIMINARY RISK ASSESSMENT	19
8.	CONCLUSIONS	20

FIGURES

- Figure 1 Site Location Plan
- Figure 2 Proposed Layout Plan

APPENDIX 1

- 'Groundsure' Report

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

PROPOSED RESIDENTIAL DEVELOPMENT

LAND AT MILESTONE LANE & CROSSGATE LANE

PINCHBECK, SPALDING

LINCOLNSHIRE

1. INTRODUCTION.

1.1 General.

This Desk Study report describes the findings of a geoenvironmental desk study undertaken by Goldfinch Environmental Limited on the instruction of Mr & Mrs R Hart (the Client), for a proposed change of use and residential development at a site located to the south of the junction of Milestone and Crossgate Lanes, in the Lincolnshire village of Pinchbeck near Spalding.

A site location plan has been included as Figure 1 towards the back of this report to assist the reader.

The Desk Study was required in response to a planning condition associated with the proposed residential development for the site.

Planning Permission Reference (Outline Planning Permission) H14-0326-14 refers.

A block layout plan has been included as Figure 2 towards the back of this report. The area included in this assessment has been shaded in red for the purposes of clarity.

The proposed development comprised the establishment of two dwellings in the eastern part of the site (shaded red) under the existing application. However, it was understood that consideration was being given to possible further residential development in the western part of the site to be the subject of a future application. It was requested that the report was to cover both areas of the site

As the development for the western part (shaded orange), of the site is 'unconfirmed' and a provisional block layout is not available at the time of this report, the reader should note that the whole of the site has been assessed as shown on Figure 2 towards the back of this report. It is also advised that once a provisional block layout is available the Regulator may require that this report is updated (or amended), based upon the specific proposed development layout.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

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.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

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 *un*acceptable 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.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

4. SITE LOCATION & DESCRIPTION

A site visit was carried out during 14 January 2015 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 or the Regulator(s) deem this is necessary.

Approximate Grid Reference ^{5}24275, ^{3}26706 refers.

The site comprised a sub-rectangular plot of land on the south western side of the junction of Crossgate and Milestone Lanes in a rural setting.

Topographic levels varied little across the site.

4.1 Area A - Proposed Development – Eastern Side of Site

The northern site boundaries were undefined. A new-looking, close-boarded, wooden fence defined the western boundary. The eastern boundary was marked by a semi mature hedge-line.

There were no buildings on site at the time of the walkover survey and no evidence of the former existence of any buildings. The site was down to a cover of bare exposed soils with occasional patches of grass as shown in Photograph 1 and 2 below.



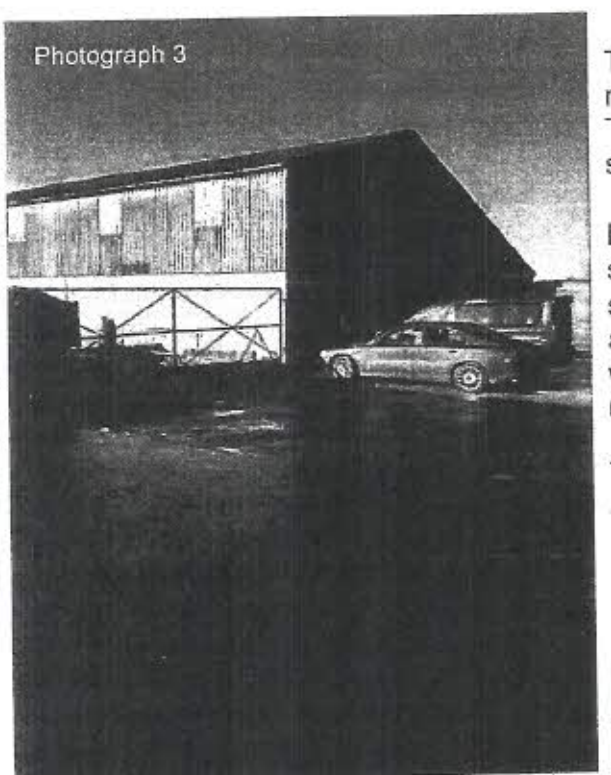


Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

There were no 'features of note' in relation to 'contaminated land' in this area.

4.2 Area B - Western Side of Site

As referred above there are no current proposals for development in this area. However, at the time of the walkover survey this area accommodated a number of buildings. A large building (Workshop), as shown in Photograph 3, was of brick and corrugated panel (ACM) construction over a concrete floor slab, with concrete hardstanding surrounding it, was established in the western part of the site, with small open compounds on its southern elevation.


Photograph 3

The workshop building was in use for the maintenance, testing and repair of vehicles. The concrete floor appeared to be relatively stain-free.

Discussion with the operator revealed that small quantities of waste oil from vehicle servicing was stored in a single drum of approximately 45 gallons capacity, which was collected and removed off-site on a regular basis.

This author noted that the external surfaces of the drum and the nearby floor areas were stain-free indicating or leakage of spillage.

In the left of Photograph 3, a small, grass covered, largely empty compound was noted, which was used as a storage area. Items noted here included a medium – sized propane gas cylinder, a large trailer containing stable 'waste' from the adjacent stables further to the south of the site. Occasional fence panels were also noted in this area.

A second empty trailer was noted towards the back of this yard area together with a number of wheelbarrows and hand tools presumably employed for cleaning and maintaining the stables.

The yard area in this part of the site comprised compacted soils.

Subordinate buildings, of brick construction with tiled roofing and concrete flooring in use as stables were located adjacent to the southern boundary of the site as shown in Photograph 4 and 5 below. As can be seen, there was some concrete hardstanding in front of the stable buildings.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

The eastern area of this part of the site leading to the new wooden fence was down to a cover of exposed soils, which contained made ground content of inert brick.



Photograph 4



Photograph 5

In conclusion, there were no features of note in this part of Area B.

4.3 Concluding Remarks – Area A

Following visual inspection of the site with specific regard to land contamination, there was no apparent evidence of:~

1. The presence or storage of potentially leachable materials/chemicals
2. Demolition or dispersal of *contaminated* rubble or other materials.
3. Importation of potentially contaminated fill onto the site.
4. The presence (or former presence) of hydrocarbon storage tanks (or any other tanks).
5. Staining of soil surfaces as indicators of potential contamination.

4.4 Concluding Remarks – Area B

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

While this part of the site accommodated two detached buildings, which were in use as a large workshop and a 'stables' respectively. There were no apparent signs of indicators of 'contamination'.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

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.

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

The site was shown as a 'developed' splot of land in a rural setting in Crossgate on the northern side of pinchbeck, Spalding, Lincolnshire.

Surrounding land was sparsely developed.

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

There were no apparent changes to the site or the immediate surroundings in the context of land quality (contamination) on this map edition.

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

There were no apparent changes to the site and its surroundings in the context of land quality (contamination) on this map edition.

1903-6 Edition {County Series - Scale 1:10 560}

There were no apparent changes to the site.

There were no apparent changes to surrounding land use.

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

There were no apparent changes to the site.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

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

There were no apparent changes to the site.

There were no apparent changes to surrounding land.

1955 Edition {Provisional - Scale 1:10 560}

There were no apparent changes to the site and its surroundings in the context of land quality (contamination) on this map edition.

1965-9 Edition {National Grid - Scale 1:2 500}

The site showed signs cof further development. A large square structure was established in the western part of the site with an access road leading westwards to join Milestone Lane on the northern side of the site.

There were no apparent changes to the site or its immediate environs at this scale of mapping except that, land to the south east of the site had undergone additional development to a residential end use.

1967-71 Edition {National Grid - Scale 1:2 500}

There were no apparent changes to the site.

Land to the west of the site had undergone development as shown by establishment of a long rectangular structure.

Land adjacent to the southern corner of the site had undergone development as a possible glasshouse was now shown in that area. A small rectangular structure was established on land to the south west of the site.

1973 Edition {National Grid – Scale 1:10 000}

There were no apparent changes to the site and its surroundings in the context of land quality (contamination) on this map edition.

1986 Edition {National Grid – Scale 1:2 500}

There were no apparent changes to the site, or its immediate environs, on this map edition.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

1986-88 Edition {National Grid – Scale 1:2 500}

There were no apparent changes to the site and its surroundings in the context of land quality (contamination) on this map edition.

1989 Edition {National Grid – Scale 1:10 000}

There were no apparent changes to the site and its surroundings in the context of land quality (contamination) on this map edition.

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

There were no apparent changes to the site and its surroundings in the context of land quality (contamination) on this map edition except that a former building located to the west of the site was no longer shown.

1994-5 Edition {National Grid – Scale 1:2 500}

There were no apparent changes to the site and its surroundings in the context of land quality (contamination) on this map.

2002 Edition {Raster - Scale 1:10 000}

The site had now undergone changes as shown by the removal of a former building(s) in the eastern part of the site.

There were no apparent changes to the surroundings of the site in the context of land quality (contamination) on this map edition.

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

There were no further changes to the site or the surrounding environs with respect to land contamination at this scale of mapping.

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

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

5.2 Public Registers.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

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 Environmental Permits, Incidents and Registers.

There was one entry within this category for 'Records of Part A(2) and Part B Acitivities and Enforcements' the referred search radius. Supplied information indicated this was located approximately 178m from the site and comprised petrol vapour recovery.

5.2.2 Landfill and Other Wastes.

There was one entry within this dataset for the category 'Environment Agency Historic Landfill Sites' for the referred search radius. Supplied information indicated this was located approximately 157m to the north east of the site. It was recorded that the licence had been surrendered but no date was given.

5.2.3 Current Land Uses.

There were four entries within this category for the referred search radius. These were given as 'Foodstuffs; Infrastructure & Facilities; Industrial Products and Consumer Products' and were located between approximately 195 and 204m distant from the site.

5.2.3.1 Petrol & Fuel Sites.

There was one record within this dataset for the category 'Records of Petrol and Fuel Sites' for the referred search radius. Supplied information indicated this was located approximately 175m to the south east of the site. The status was given as 'Obsolete'.

5.2.4 Geology.

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

There were records for the category 'Are there any records of Superficial Ground and Drift Geology present beneath the study site'. Supplied information indicated the site was underlain by Tidal Flat Deposits (Clay and silt) which in turn rested upon Bedrock geology of Oxford Clay.

5.2.5 Hydrogeology and Hydrology.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

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 an '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 in this dataset 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'.

There were no records of Environment Agency information on River Quality available within 500m of the site.

There was one entry for the category 'Detailed River Networks' within the search radius for the site. Supplied information indicated this was located approximately 158.0m distant from the site.

There were eight entries for the category 'Surface Water Features within 250m of the study site'. These were not represented on mapping. They were located between approximately 0.0 and 208.0m distant from the site.

5.2.6 Flooding.

There were Environment Agency Flood Risk Zones 2, and Zone 3 identified within 250m of the site.

There were 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.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

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

5.2.7 Designated Environmentally Sensitive Sites.

The site was located within a 'Nitrate Vulnerable Zone'.

5.2.8 Natural Hazards.

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

5.2.9 Mining.

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

A 'Negligible' risk of 'subsidence related to shallow mining' within 150m of the site.

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

5.2.10 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 new dwellings or extensions to existing ones.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

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 redevelopment but to a continued residential end use upon which the following risk assessment has been based.

6.2 Conceptual Model.

Source (s) (Potential)	Pathway	Target	Risk
Soil: **Area A:** The site has been proposed for residential development comprising two plots. Map evidence indicated the site had occasional documented phase of development. Visual and olfactory indicators of potential contamination were not noted and based upon the foregoing information would not be (reasonably) anticipated to be present at the site. **Area B:** Currently accommodating two buildings, constructed over concrete floor slabs with a limited developmental history. Visual and olfactory indicators of potential contamination were not noted and based upon the foregoing information would not be (reasonably) anticipated to be present at the site.	❖ Dermal contact, ingestion and inhalation	• Present users • End users • Construction workers • General public	• Low • Low • Low • 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 are not considered to be plausible 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

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

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 change of use to 'residential' with garden areas. A proposed layout plan has been included as Figure 2 towards the back of this report.

6.3.1 Site Users And Construction Workers (Human Health).

Area A:

The site had a limited documented developmental history.

Therefore, Made Ground would not be reasonably anticipated to be present except possibly within the immediate vicinity of the building and then it would be 'inert' potentially comprising aggregate over which the concrete floor of the building had been constructed.

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

A *Low* risk has been identified until proven otherwise.

Area B:

This site had a limited developmental history and currently existed as a large Workshop and separate small building used as a Stables.

Therefore, Made Ground would not be reasonably anticipated to be present except possibly within the immediate vicinity of the building and then it would be 'inert' potentially comprising aggregate over which the concrete floor of the building had been constructed.

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

A *Low* risk has been identified until proven otherwise.

6.3.2 Services and Construction Materials

6.3.2.1 Concrete & Potable water supplies.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

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. In this instance based on the above:-

A *Low* risk has been identified.

6.4 Landscaping & Planting

Minor soils contamination is often present where man-made fills or Made Ground are present. Where these are present at phytotoxic concentrations, adverse effects on landscaping and planting may be anticipated. Vegetation present on site showed no signs of distress or unusual staining or colouration.

On that basis a *Low* risk to this receptor has been identified.

6.5 Groundwater (Controlled Waters)

The site overlies 'Unproductive' Aquifers. However, there remains the potential for small quantities of perched groundwater in any soil fills (or Made Ground), where these are present. However, searches indicated in this instance that the presence of Made Ground would not be reasonably anticipated given the documented history of development at 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 localised presence of made ground and the foregoing:

A *Low* risk has been identified.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

7. RECOMMENDATIONS FOLLOWING PRELIMINARY RISK ASSESSMENT.

7.1 Overview.

The desk study showed the site (Area A and Area B), had a limited developmental history.

The site walkover survey and the searches carried out as part of this Desk Study indicated that there were no readily identifiable potential sources of contamination other than possible limited areas of Made Ground close to the footprint of the former/existing buildings.

On that basis the need for a Phase 2 intrusive investigation is considered *un*warranted.

At this point the readers attention is drawn to the final paragraph in this Desk Study report, in blue text, regarding 'unanticipated' contamination.

The recommendations in this section of the report are subject to the approval / agreement of the Regulator.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

8. CONCLUSIONS.

This geoenvironmental desk study prepared by Goldfinch Environmental Limited was undertaken on the instruction of Mr & Mrs R Hart (the Client), for a site at the junction of Crossgate Lane and Milestone Lane, Pinchbeck, Spalding, Lincolnshire.

The site had been proposed for 'residential' land use.

The Desk Study did not identify the presence of site-specific sources of potential contamination and the presence of extensive Made Ground would not be (reasonably) anticipated.

An *overall Low* risk is associated with the site *subject to the final paragraph in this report* and the content of Section 6 of this Desk Study.

Recommendations for the need for further work have been discussed in Section 7 of this report. In summary an intrusive survey is considered *un*warranted subject to the final paragraph in this report regarding 'unanticipated contamination'.

Also, at all times especially once groundworks have commenced, the final paragraph below applies regarding 'unanticipated' contamination. The reader should note that the opinions and recommendations 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* 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.

Goldfinch Environmental Limited
2 Wrenshall Cottages, Walsham-le-Willows, Bury St Edmunds, Suffolk, IP31 3AS
Telephone 01359 258681

FIGURES

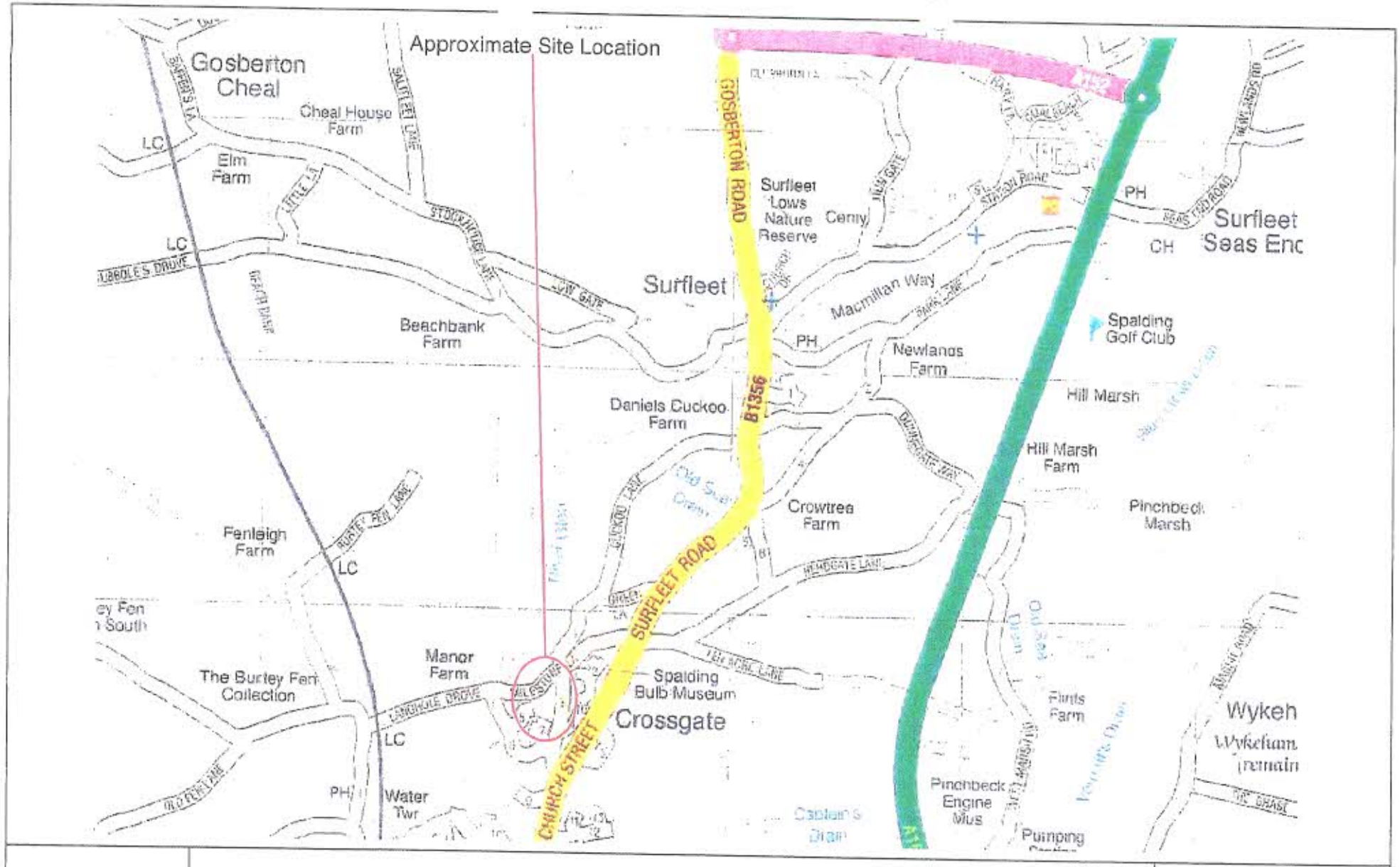


Figure 1	Site Location Plan	**Goldfinch** Environmental Limited
Ref: 0265/1		

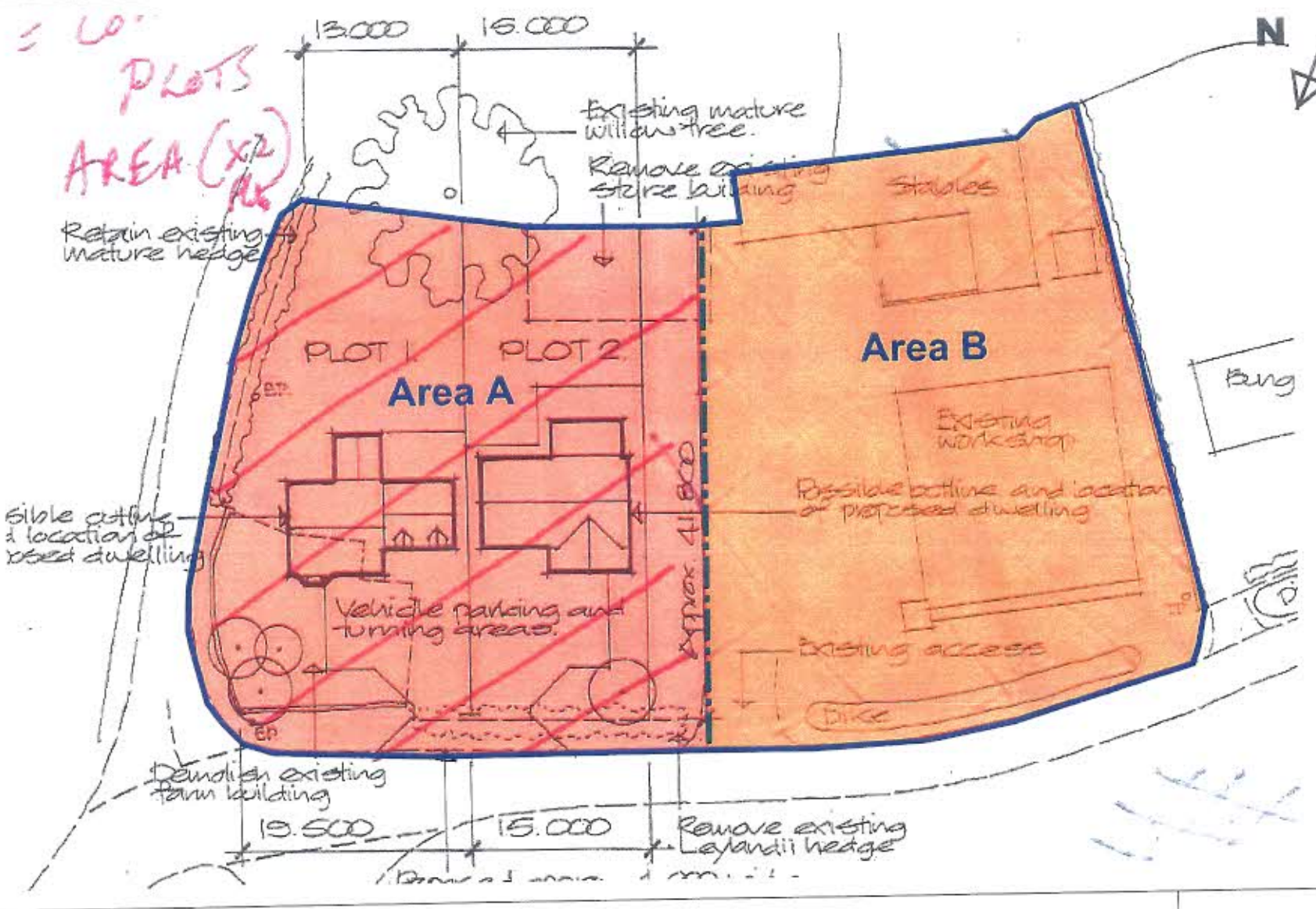


Figure 2	Proposed Layout Plan	**Goldfinch** Environmental Limited
Ref: 0265/1		