JPC Environmental Services

(A Division of JP Chick & Partners Ltd)

Ashes Farm, Meddlesham, Newmarket, IP14 5TE

PHASE I – Contaminated Land Assessment

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EXECUTIVE SUMMARY

Site Name & Address:	Ashes Farm, Oak Farm Lane, Mendlesham, IP14 5TE
Client:	Mr Simon Colchester
Architect:	Peter Wells Architects
Local Planning Authority:	Babergh and Mid-Suffolk District Councils
Historical Site Use:	Agricultural land
Present Site Use:	Agricultural barns
Proposed Site Use:	Residential development (4No.)
Date of most recent investigation:	Tuesday, 2nd December 2019 - Site walkover

Objectives:

- To develop a good understanding of the site's history and environmental context;
- To determine the potential existence of any significant pollutant linkages which might represent a potential risk to construction workers, future occupants of the site or controlled waters;
- To undertake a Tier 1 'Contaminated Land' investigation in accordance with CLR11 and guidance contained in the NHBC Publication 66: 2008.

Geology, Hydrogeology & Hydrology:

- Based on the BGS online mapping, the site is likely to be underlain by Lowestoft Formation – Diamicton and Crag Formation – Sand;
- The BGS borehole[TM16SW4] is located approximately 30m south east of the site and reports Boulder Clay to 25.9m bgl, sand and ballast of the Crag Formation to 54.2m bgl and the Upper Chalk Formation to 76.8m. Resting water level was recorded at 31.3m bgl.
- The superficial deposits are classified as Secondary aquifer (undifferentiated). The bedrock geology is principal aquifer.
- The Environment Agency has classified the groundwater vulnerability as Minor Aquifer Low.
- The site is located within Total catchment (Zone 3) groundwater Source Protection
- The site is located within Flood Zone 1;
- In relation to the overall hydrology, the site is a brownfield site consisting of buildings and concrete hardstanding. Therefore, there are limited opportunities for vertical migration;

Findings:

- The earliest available historical mapping (1885) suggests that the site was undeveloped agricultural farmland until the 1970s when new buildings were established, surrounded by agricultural land. Further buildings were developed in the early 2000s.
- Our historic map review has identified 3 No. areas of potentially infilled land within 250m of the site boundary. This is considered to pose only a low risk to the site due to the age of infilling.

Risk Assessment:

- Our desk-based research and walkover survey identified the following potential sources of contamination:
  i) On-site: Current Land use, Current Tanks, Oil Drums, Asbestos containing materials (ACM);
  ii) Off-site Current Industry, licensed waste discharge sites, potentially infilled pond
- We consider that these sources represent a LOW/MODERATE risk to the site and future occupants;
- We consider the potential on-site and off-site sources of contamination to represent a LOW risk to groundwater, but the development would not increase this risk;
- The potential risk from ground gas migrating onto the site and affecting the proposed developments is considered to be LOW/MODERATE due to the potential of hydrocarbons entering the building from underneath and forming an accumulation of gas.

Recommendations:

Based on the information obtained and reviewed as part of this preliminary assessment, JPC Environmental Services would advise the following:

- A Stage 1/ Tier 2 site investigation and Tier 3 risk assessment is considered necessary in this instance to quantify or dismiss the possible presence of ground contamination, and any impact this may have on future occupants.
- Fuel or waste oil may have impacted the underlying soils particularly within the footprint of “Browns Barn”.
- Based on the identified on-site activities we would recommend that the soils are tested for:
  - Total Petroleum Hydrocarbons
  - Asbestos ID
  - Heavy Metals
  - Polycyclic Aromatic Hydrocarbons
  - CLEA metals
- Although not related to the condition of the on-site soils, we would recommend undertaking HSG264 Pre-demolition/ major refurbishment asbestos survey on the existing building. All identified asbestos containing materials (ACMs) should then be removed, by a suitably experienced contractor, prior to the demolition/ conversion of the buildings.

1.0 INTRODUCTION

1.01 Brief

1.01.1 JPC Environmental Services were appointed by Peter Wells Architects on behalf of their client Simon Colchester to undertake a Phase I Contaminated Land Investigation and Risk Assessment for land at 'Ashes Farm, Oak Farm Lane, Mendlesham, IP14 5TE '(hereafter referred to as 'the site').

1.01.2 The purpose of the investigation, comprising a desktop study and walkover survey was to:

- Identify any significant potential sources of ground contamination either on the site or in close proximity to it, which could have a negative impact on the proposed development.
- To determine the potential existence of any significant pollutant linkages that might represent a potential risk to future occupants.
- To determine whether any further investigations would be required, to enable the potential risk to human health and controlled waters to be assessed.

1.01.3 The investigation was carried out broadly in accordance with Contaminated Land Report 11 (CLR 11) and the updated NHBC Guidance Document "R & D Publication 66: 2008 – Guidance for the Safe Development of Housing on Land Affected by Contamination".

1.01.4 Authority to carry out this work was received on 22 November 2019 from Peter Wells Architects via email.

1.01.5 This report shall be for the private and confidential use of Mr Simon Colchester for whom it was undertaken, and his architect. It should not be reproduced in whole or in part or relied upon by a third party for any use without the express written authority of JPC Environmental Services.

1.01.6 In producing this report, we have exercised all the reasonable skill, care and diligence to be expected of an appropriately qualified and competent consultant, experienced in carrying out equivalent services for developments of a similar size, scope and complexity, value and purpose to the development.

1.02 Scope

1.02.1 The main elements of the investigation were as follows:

- The collection and review of historical and regulatory information relating to the site to gain an understanding of the site's history, the local environment and potential ground conditions
- The formulation of a "Conceptual Site Model" to explore and evaluate the existence and potential impact of any plausible pollutant linkages
- To utilise the resulting information to undertake a 'Tier 1' human and environmental risk assessment
- If appropriate, make recommendations on the extent of any intrusive investigations which may be required to fully establish the condition of the site

1.02.2 The on-site investigations comprised the following: -

- A walkover survey of the site and surrounding area to identify the presence and types of commercial activities within the locality, and seek evidence of potential sources of on or off-site contamination.

1.03 Location

1.03.1 Ashes Farm, Mendlesham, Stowmarket, IP14 5TE

1.03.2 Map coordinates: Easting: 610894
Northing: 264084

1.03.3 OS Ref: TM 10894, 64084

1.03.4 NGR: TM16SW098

1.03.5 The site is accessed from: Old Farm Lane to the East

1.03.6 A detailed map of the location is presented within the appendices.

1.04 Development Proposal

1.04.1 We understand that the intention is to develop the site by demolishing a series of barns currently present to create four residential dwellings. A landscaped 'bund' will then separate the new dwellings from the remaining farmyard.

1.04.2 Extracts of the architectural layout drawings for each plot are presented below. Full-scale copies of the Architect's drawings are presented within the appendices.

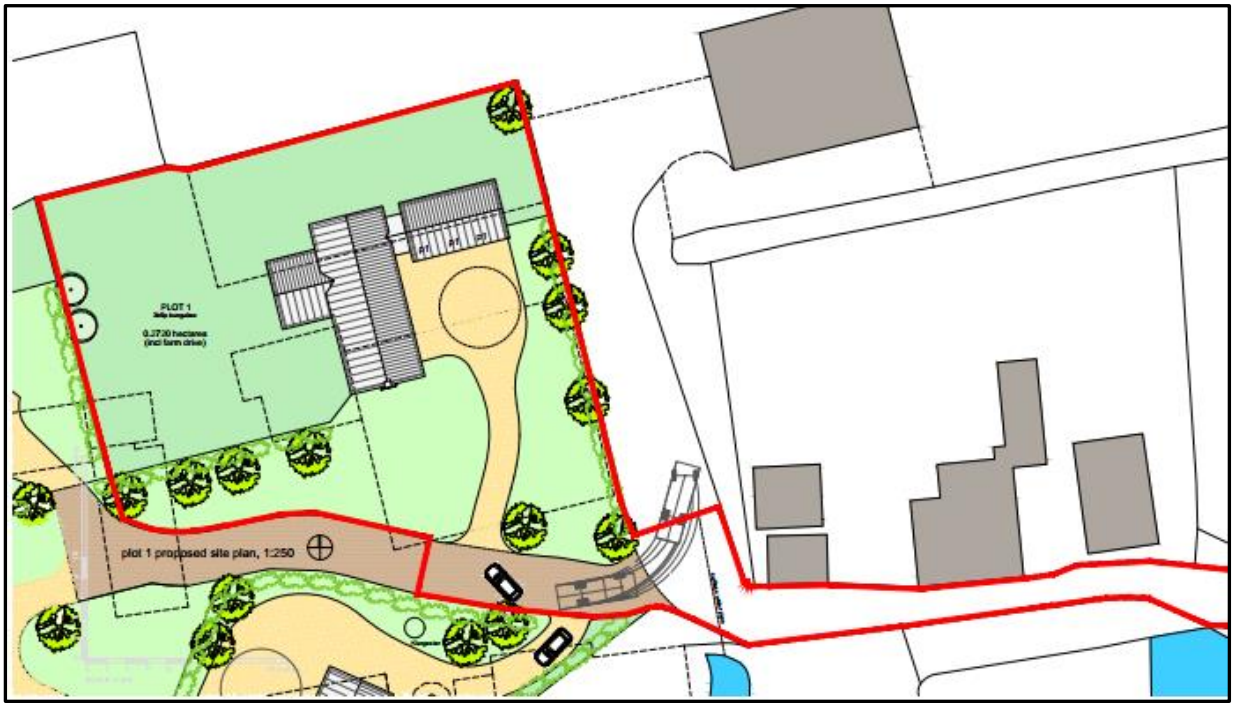


Figure 1 – Extract from Architectural Layout- Plot 1

Figure 2 – Extract from Architectural Layout- Plot 2

Figure 3 – Extract from Architectural Layout- Plot 3

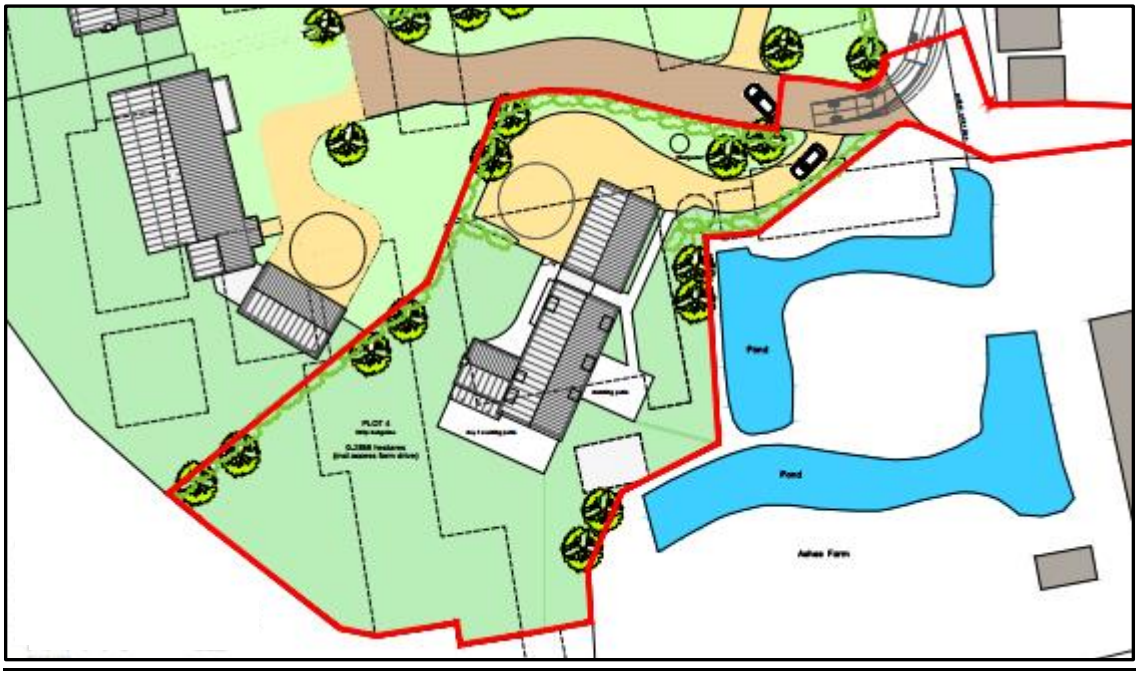


Figure 4 – Extract from Architectural Layout- Plot 4

2.0 DESK STUDY

2.01 Sources of Information

2.01.1 As part of the desk based research, JPC Environmental Services consulted the following sources of information: -

- Enviro Insight Report – produced by the Groundsure
- British Geological Survey (BGS) mapping and online referencing
- Environment Agency groundwater mapping – online
- Environment Agency source protection zones – online
- Environment Agency indicative flood mapping – online
- Environment Agency landfill mapping – online
- BR 211 Radon: Guidance on Protective Measures for New Dwellings, 2007 Edition
- Magic Map Website- magic.defra.gov.uk
- Drawings produced by Peter Wells Architects

2.02 Site Description (Walkover Survey)

2.02.1 The site walkover was conducted on 02 December 2019 by Andrew Davis on behalf of JPC Environmental Services.

2.02.2 Access to the site was gained from the east, off Oak Farm Lane. The site is currently occupied by a number of agricultural buildings with concrete hardstanding and peripheral vegetation; with farmland beyond.

2.02.3 The section of farmyard, which will be redeveloped as Plot 4 is currently occupied by a barn constructed of wood and steel frame, blockwork walls and asbestos cladding. This building is sub-divided into 4 No. sections. The first section facing the yard is used for storage of agricultural silos and the second section for grain and agricultural machinery. In the south western quadrant, there were a range of tractor mountable implements and next to this a waste oil holding area. This was laid to concrete with a raised edge, forming a 'bund'. A number of oil drums and a metal storage container for oils were stored in this feature. The south western section is a workshop, used for general storage and vehicle maintenance with a vehicle inspection pit. In a separate building to the east, is room with an enclosed metal storage container used for pesticides and herbicides. Figure 5 below shows an internal layout of the barn. An adjacent building to the barn will also need to be demolished in order to create garden land for this plot.

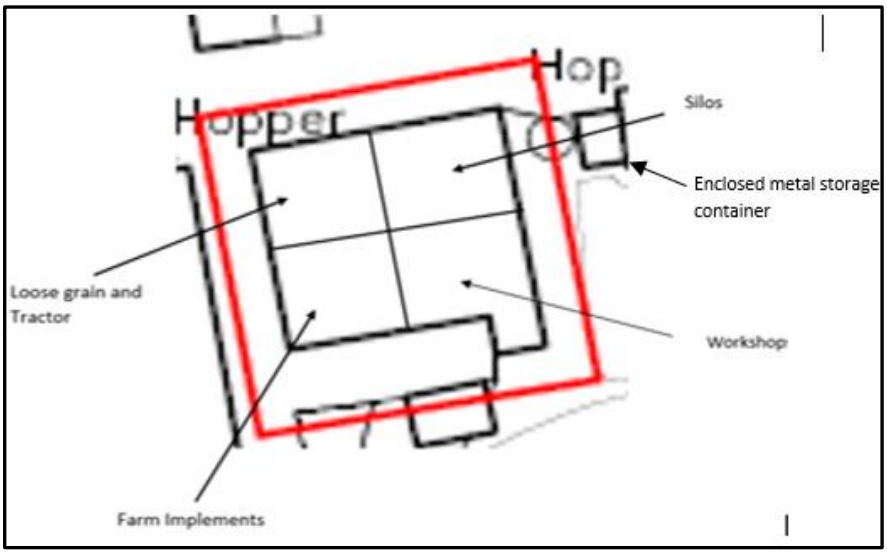


Figure 5- Sketch of The Browns Barn

2.02.4 The section of farmyard, which will be redeveloped as Plot 3 is currently occupied by an open fronted barn structure, comprising a steel and timber frame, concrete blockwork to 1.5m and metal sheet cladding over. The floor comprises a substantial concrete slab which is in good condition. The barn is used for storage of agricultural machinery. To the west of the building are a collection of single storey former piggery units, which at the time of our inspection contained empty spray containers and remains of a farrowing unit.

2.02.5 Between the former piggery buildings, the ground is laid to concrete hardstanding and in one of the gaps was a tidy stockpile of corrugated asbestos cement sheeting and ridge pieces. The cement sheet appeared to be in good condition and not fragmented.

2.02.6 The section of farmyard, which will be redeveloped as Plot 2 is currently occupied by is a single storey steel framed barn, wooden purlins and with concrete block walls. The barn is currently used to store hay. Beyond the barn is an unlined pond used for farm effluent and a separate building with a fuel tank enclosed in concrete blockworks. Immediately north of the third barn is an area of

made ground with sparse vegetation/ weed growth. This consists of the topsoil excavated from the unlined pond.

2.02.7 The section of farmyard, which will be redeveloped as Plot 1 is currently occupied by an asbestos clad barn, which we understand was built after a former barn burnt down approximately 30 years ago. The barn had concrete hardstanding throughout and was used for the storage of grain. A large heap of lime was present on the north boundary and an empty IBC. Adjacent to this was a water tank, which was used for diluting soil treatments. The external hardstanding to the north was currently be used to store a heap of concrete, which was from the demolition of an on site 'out building'. The heap was thoroughly inspected and no evidence of potential asbestos fragments was noted. We understand the hardstanding had been previously used to store manure.

2.02.8 A further barn was present to the south west, constructed of concrete block and render, with an asbestos roof, and comprised of farrowing pens. A second larger open fronted barn was also present, with a solid concrete floor throughout. The barn was currently being used to store trailers and bags of fertiliser.

2.02.9 Neighbouring land uses consists of agricultural land which surrounds the site with Oak farm situated to the east from the site. To the east of the site, there is a residential property with a 'moat' to the rear.

2.03 Site History

2.03.1 To ascertain the existence of any potentially contaminative former land uses within the locality, JPC Environmental Services purchased a Map Insight report compiled by Groundsure Ltd, which contains a range of historic 'County' maps and modern Ordnance Survey map extracts. The extracts reviewed as part of this desk study were produced in scales, 1:2,500, 1:10,000 (metric scale), 1:2,250 and 1:10,560 (imperial scale), and cover the periods from 1884-2019, with a more recent aerial photograph hosted by Google™ Google maps - Map data ©2019 Google within the Enviro Insight Report.

2.03.2 Details of the historic land uses are summarised in the table below, while copies of the full-sized map extracts are presented within appendices for reference purposes.

Table 1 - Historical Mapping

Map Edition (Date)	The Site	Surrounding Area
1884-1888 1:2,500 and 1:10,560	The site is undeveloped agricultural land.	There are buildings to the east of the site and agricultural land in all other directions. Grove farm- 400/NW Oak Farm- 250/E Other features: Ponds to the east of the site

1903-1905 1:10,565	The site appears unchanged.	The surrounding buildings to the North-east have undergone redevelopment into larger buildings.
1950-1957 1:10,560	The site appears unchanged.	The surrounding area appears unchanged
1975 1:2500	The site is occupied by a large building to the East of the site	A building has been constructed 10m north of the site and 100m north-east of the site. Ponds have appeared 230m north-east of the site.
1983-1984 1:10,000	Site has remained unchanged	Site remains unchanged
2000-2003 1:2250 and 1:10,000	The appearance of a hopper on site and multiple buildings have been developed across the site.	A pond is shown 20m north of the site. A hopper has also been constructed adjacent to the site towards the east. Multiple buildings have been constructed within 100m east of the site.
2010 1:10,000	Site has undergone no further changes.	A Pond 250m southwest of the site has appeared.
2019 1:10,000	Site has undergone no further changes	A pond 250m southwest of the site no longer shown

2.01 Geology, Hydrogeology & Hydrology

2.01.1 To determine the nature of the underlying geology, we have consulted the 1:50,000 scale geological maps compiled by British Geological Survey (BGS). Based on these maps, the site is most likely underlain by superficial deposits comprising of glacingenic sedimentary deposits from the Lowestoft Formation-Diamicton. The underlying bedrock geology is recorded as Crag Group – Sand.

Geology

2.01.2 In addition to the Geological mapping, we have reviewed the BGS database for nearby boreholes. The nearest borehole TM16SW4 is located approximately 30m Southeast from the site. The log is produced below:

Table 2 – BGS Borehole Geology

Geological classification	Thickness	Depth(m bgl)
Boulder Clay	25.9	25.9
Sand and Ballast- Crag Formation	28.5	54.2
Upper Chalk	22.6	76.8
Resting water level		31.3

Hydrogeology

2.04.3 With reference to the groundwater mapping presented on the Environment Agency website, the superficial deposits are classified as Secondary (undifferentiated) Aquifer, and the bedrock geology as Principal Aquifer;

2.01.3 In terms of groundwater vulnerability, the Environment Agency divides significant groundwater catchments into three Source Protection Zones (SPZ's) based on the potential risk associated with the migration of possible contaminants. In this instance the site is located within Source protection zone 3(Total Catchment).

2.01.4 Groundwater vulnerability mapping hosted on the Environment Agency's website shows that the site is located within an area classified as Minor Aquifer Low groundwater vulnerability area. This is indicative of the low permeability of the superficial geology

2.01.5 In respect of the local hydrology, the nearest surface water feature is a pond, which is located the east of the site;

2.01.6 According to the Environment Agency's online indicative flood mapping the site is situated within Flood Zone 1. In terms of contamination we don't consider floodwaters as posing a potential pathway for soluble or surface contaminants.

2.01.7 In relation to the overall hydrology, the site is currently laid to impermeable surfacing. These have the potential to support lateral migration, while the peripheral verges (laid to grass) have the potential to allow. Some limited vertical migration due to the cohesive nature of the underlying sub-soil.

2.01.8 Extracts from the Environment Agency's groundwater mapping and indicative flood map are presented in the appendices.

2.02 Statutory Searches – Enviro Insight Report

2.02.1 To obtain a more detailed understanding of the site, in context of the surrounding environment, JPC Environmental Services obtained an Enviro Insight report from Groundsure. This report contains information derived from a database containing public record information from the Environment Agency, local authorities and other regulatory bodies.

2.02.2 The complete Enviro Insight report is provided within the appendices.

2.02.3 Potential issues noted within the report have been sub-divided into source, pathway and receptor issues and are summarised below: -

Source(s)

No.	Source	Related to	Distance
1	Potentially contaminative use	Oil drums	On site
		Fuel Tanks	On site
		Hoppers and silos	On site 1 37

2	Licensed Waste Management Facilities	Sewage Discharge	374 448
3	Potentially infilled land	Filled ground(pond)	3 X Onsite 1, 1, 68, 70,73, 203, 206, 208, 209, 230, 232, 239, 239, 240

Table 3 - Contaminant Source(s)

Pathway(s)

Table 4 - Contaminant Pathway(s)

Pathway(s)	Related to	Distance
Superficial Deposits	Secondary(Undifferentiated) Aquifer)	On site
Bedrock Geology	Principal Aquifer	On-site

Receptor(s)

Table 5 - Contaminant Receptor's)

Receptor(s)	Related to	Distance
Bedrock Geology	Principal Aquifer	On site
Source protection zone	Zone 3(total Catchment)	On site
Surface water feature	Inland river	2 4 96 125 150 188
Water abstractions	Farming and domestic	183 305
Nitrate vulnerable zone	Existing	37

2.03 Radon

2.06.1 According to the Enviro Insight Report and BR211 (2007), the site appears to be located in a lower probability Radon affected area. Therefore as less than 1% of homes are above the action level for Radon, no radon protection measure are necessary in the construction of new buildings or residential dwellings.

2.04 Mineral Workings and potentially infilled land

2.04.1 We have consulted the Environment Agency landfill mapping, which indicates that there are no historic landfills within 500m of the site.

2.04.2 Our review of the available historical maps and third-party searches has identified no. 3 areas of potentially infilled land within 250m. These are explored in greater detail in figure 6 below.

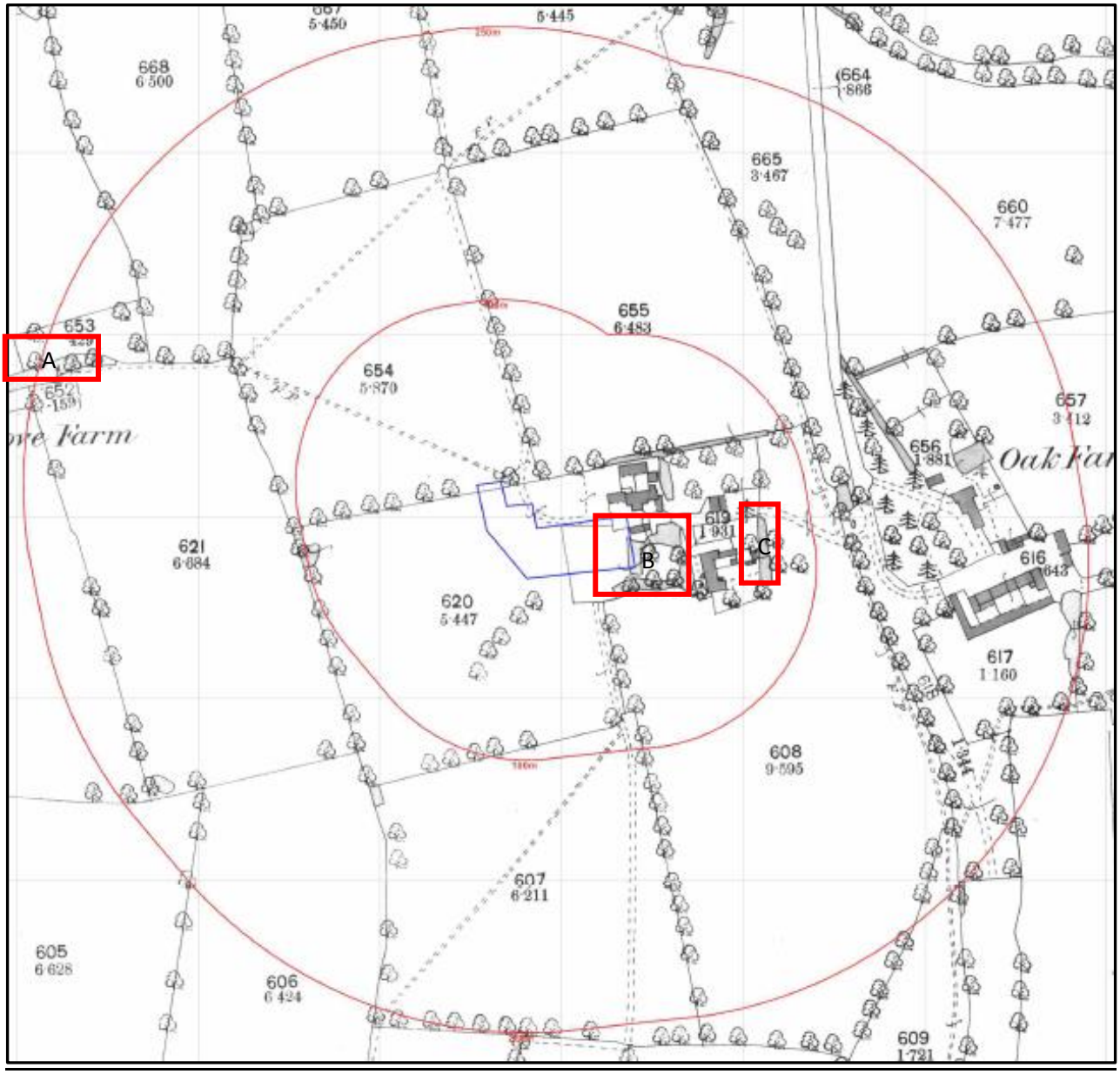


Figure 6 - Historic map (1885) to show the potentially infilled ponds

- Pond A at Grove Farm 200m, to the west is shown on historic maps from 1884 but is not shown on maps post 2010. However, the client has said the pond is 'still in existence screened heavily by trees and undergrowth'. This pond has not been infilled.
- Pond B, to the east of the Browns Barn, is shown on all the maps until the present day, and was evident during our walkover survey. This pond and has not been infilled.

- Pond C is located 70m east, towards Ashes Farm. This is shown on all the historic maps and can be seen on Googlestreetview. The feature has therefore not been infilled and does not represent a potential source of ground gas.

2.05 Local Authority Information

2.05.1 In addition to the searches compiled by Groundsure as part of the Enviro Insight report, JPC Environmental Services lodged a request for environmental information with Babergh and Mid Suffolk District Councils– Environmental Protection officer. A response was received on Friday 20th December 2019 and detailed below:

2.05.2 'We are happy to confirm that the search site has not been determined as Contaminated Land as defined by Part IIA of the Environmental Protection Act 1990 nor has it been scheduled for inspection under the aforementioned act. No sites within a 500m radius of the search site have been determined as Contaminated Land as defined by Part IIA of the Environmental Protection Act 1990 nor have any sites within 500m been scheduled for inspection under the aforementioned act'.

2.06 Anecdotal Evidence

2.06.1 We were advised by the Client that the various silos have always been used for the storage of grain from the farm and as such do not represent a source of potential contaminants. In relation to the storage of agricultural diesel onsite, this was original located further east towards Ashes Farm. However, this was recently relocated to an internally bunded animal pen, opposite the proposed development, to reduce the risk of theft.

3.0 CONCEPTUAL SITE MODEL

3.01 Introduction

3.01.1 The "conceptual site model" is a simplified representation of the ground conditions that exist on site, which is subsequently used to assess the potential risk to human and environmental receptors. According to the contaminated land report (CLR11) "a conceptual model represents the characteristics of the site in diagrammatic or written form; that shows the possible relationships between contaminants, pathways and receptors".

3.01.2 Although the model is formulated during the initial phase of the investigation it is subject to change, as new information comes to light, and our understanding of the site improves. It is central to the risk assessment process and therefore must take into account all potential relationships/interactions.

3.01.3 There are four key aspects to the model, these are:

- Source(s) - These can include current or historic activities / business practices taking place either on or adjacent to the site, which may have had a negative impact on surface or sub-surface soils, or groundwater.

- Pathway(s) - This is the route by which contaminants travel / migrate between their source and any available receptor.
- Receptor(s) - These are varied and can include human or non-human organisms and eco-systems; controlled waters such as groundwater or surface water bodies; and structures or individual construction materials.
- Pollutant linkages - These exist where all three of the previous elements are present, indicating that the "link" between an identified source and a potential receptor via a pathway.

3.02 Potential Sources of Contamination

Table 6 - Potential Sources of Contamination

Source	Description	Potential Source of Contaminant	Distance
Construction Materials	Asbestos containing materials	Asbestos fragments/fibres	On site
Made Ground	Resulting from the soil from the unlined pond/ demolition arisings	Unknown Contaminants	Onsite
Current land uses	fuel tanks, oil drums fertilisers	Petroleum hydrocarbons, toxic metals, PAHs, fertilisers, pesticides	On site
Licensed Waste Management Facilities	Sewage waste facilities	Bacteriological contaminants	374 448
Potentially Infilled land	Infilled Land	Unknown Fill material, Ground gas	1 70 200

3.03 Potential Contaminant Pathways

Table 7- Identified Pathways

Pathways
Inhalation- potential inhalation of soil derived dust containing toxic and / or carcinogenic contaminants;
Ingestion- Future Site users could swallow small quantities of soil derived dust originating in disturbance of the ground.
Dermal Absorption- Contaminants present within surface or subsurface/fill material can enter the human body through the skin or via open wounds.

Contaminated drinking water – current and future occupants could ingest small quantities of contaminants if they are in long term contact with damaged below ground pipe work;
Buried services- Petroleum hydrocarbons are present within surface/subsurface soils, then drinking water pipe can become unusable
Migration/Leaching - potential for migration of contaminants through soil;
Surface water drainage- potential for contaminants to migrate within surface water runoff;
Migration/ accumulation of gas within structures of the buildings can accumulate and cause explosions(Methane gas)

3.04 Potential Contaminant Receptors

Table 8 - Identified Receptors

Receptors
Future site users –future residents could be affected by contaminants in the soil, entering the mains water system or ground gas entering the building;
Construction workers – should any groundworks occur in the future, workers involved with potential site clearance and preparatory work will be exposed to contaminants present within on-site soils, should they exist;
Buildings and Infrastructure- Modern construction techniques produce airtight buildings, if gas is able to accumulate within new, or converted buildings there is the potential for an explosion.
On-site soil- Particularly close to the surface may have been impacted by Current activities.

3.05 Plausible Pollutant Linkages

3.05.1 Using the 'source – pathway – receptor' tables above, potential pollutant linkages are identified. An assessment of the likely significance of each linkage is then considered, which would include; the possible extent and mobility of the source; the sensitivity of the receptor and the type of migration/exposure pathways.

3.05.2 An assessment of the probability and the magnitude of potential risk is presented below to give a valuation of each potential pollutant linkage identified and their significance.

3.05.3 This assessment is undertaken based on the current proposals for the site, which at the time of issuing this report is the conversion of an existing agricultural barn into a residential house.

3.05.4 This qualitative risk assessment has been undertaken in accordance with CIRIA C552: Contaminated Land Risk Assessment, A Guide to Good Practice (Rudland et al., 2001).

3.05.5 The following potential receptors have been identified:

Table 9 - Possible Pollutant Linkages

LOW	MODERATE	HIGH

Possible Pollutant Linkage			RISK CHARACTERISATION
Potential Sources	Pathways	Receptors	
Asbestos containing materials (on site)	Ingestion and inhalation	Human health (demolition and construction workers)	MODERATE/HIGH - Potential for asbestos fibre release during removal
Made Ground	Inhalation; Ingestion; Dermal absorption; Buried services; Migration/ leaching	Future site users; construction workers; onsite soil; buried services	MODERATE
Oil Drums (on site) Workshop activities and storage of waste oil/ fertilisers/ pesticides	Contact with contaminated soil Ingestion and inhalation of contaminated soil	Future site users; construction workers; on site soil	LOW/MODERATE RISK
licenced discharge (off site)	Ingestion and inhalation	Future site workers; construction workers;	LOW RISK
Petroleum Hydrocarbons(on site)	Contact with contaminated soil Ingestion and inhalation of contaminated soil	Future site users; Construction workers	LOW RISK
Potentially infilled land (off site, Pond)	Migration of Gas	Buildings and Infrastructure	LOW RISK

3.05.6 The level of potential risk ascribed to each linkage is based on the following criteria:

Table 10 - Risk Classification

Risk Classification	Description
Very high risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without appropriate remedial action.
High risk	Harm is likely to arise to a designated receptor from an identified hazard at the site without appropriate remedial action.
Moderate risk	It is possible that without appropriate remedial action harm could arise to a designated receptor but it is relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely that such harm would be relatively mild.

Low risk	It is possible that harm could arise to a designated receptor from an identified hazard but is likely that, at worst, this harm if realised would normally be mild.
Negligible risk	The presence of an identified hazard does not give rise to the potential to cause significant harm to a designated receptor.

4.0 ENVIRONMENTAL ASSESSMENT

4.01 Summary of Key Drivers

4.01.1 The site was developed during the 1970s for agricultural use, specifically the storage of corn and farm related machinery. The current agricultural site use of the tanks and oil drums are the main source of contamination. The other sources of contaminants are the asbestos containing materials, licenced discharge facilities and possibility of infilled features such as ponds.

4.02 Environmental Risk Assessment

Human Health

4.02.1 The redevelopment of 4No. residential houses will increase the number of people on site and the intensity of site use. Most of the site is covered in concrete hardstanding and buildings. This will change when areas of garden land are created. Historic spillages or fuel leakages could migrate via granular sub-base materials in the hardstanding surface to affect the surrounding areas. The risk posed to future occupants could be exposed during gardening activities via inhalation, ingestion or dermal absorption. In the absence of any specific site data we have assessed the risk to be low/moderate

Controlled Waters

4.02.1 The site falls within a Source Protection Zone Zone 3(Total Catchment) and is underlain by impermeable deposits and deep resting water level (31.7m bgl). The identified on site sources of contamination may represent a Low risk to groundwater, due to the underlying geology. However, further understanding of the current ground conditions may enable this level of risk to be reduced.

4.02.2 The proposed development of 4No. residential houses is likely to reduce the extent of impermeable surfacing, by creation of garden land, and therefore increase the opportunity for infiltration. Further information is needed on condition of on-site soils in order to refine the risk assessment.

Buildings

4.02.4 Our walkover survey identified a potential source of ground gas, in the form of bunded soils. However the raised profile of these soils means that if gas is generated, this could not migrate and adversely impact any newly constructed buildings or the future site occupants. Ground gas is considered to be a negligible risk.

4.03 Environmental Litigation (Part IIA)

4.03.1 Part IIA only applies to land with chemical contamination, where the contaminants pose an unacceptable risk to human health or the wider environment i.e. land where significant pollutant linkages have been identified. The legislation also only considers risks associated with current site use, leaving any risks associated with a future use to be addressed by the planning system.

4.03.2 Based on our understanding of the previous site uses, and the apparent condition of the site established by our visual survey, we consider it extremely unlikely that the site would be classified as Contaminated Land under Part IIA of the Environmental Protection Act.

4.04 Further Investigations

4.04.1 We would recommend that a site investigation is undertaken following the removal of the hardstanding particularly in the vicinity of the workshops and waste oil storage area, to determine whether any of the previous on-site activities have adversely impacted the on-site soils. Due to the presence of suspected asbestos containing materials, we would recommend that these materials are removed from site by an experienced and competent contractor prior to any demolition works.

4.0 RECOMMENDATIONS

5.01 Based on the information obtained and reviewed as part of this preliminary assessment, JPC Environmental Services would recommend the following:

- A Stage I/ Tier 2 site investigation and Tier 3 risk assessment are considered necessary in this instance because undertaken to quantify or dismiss the possible presence of ground contamination, and any impact this may have on future occupants.
- The presence of a workshop and waste oil storage at the rear of Browns barn could have resulted elevated metals and hydrocarbons within the near surface soils.

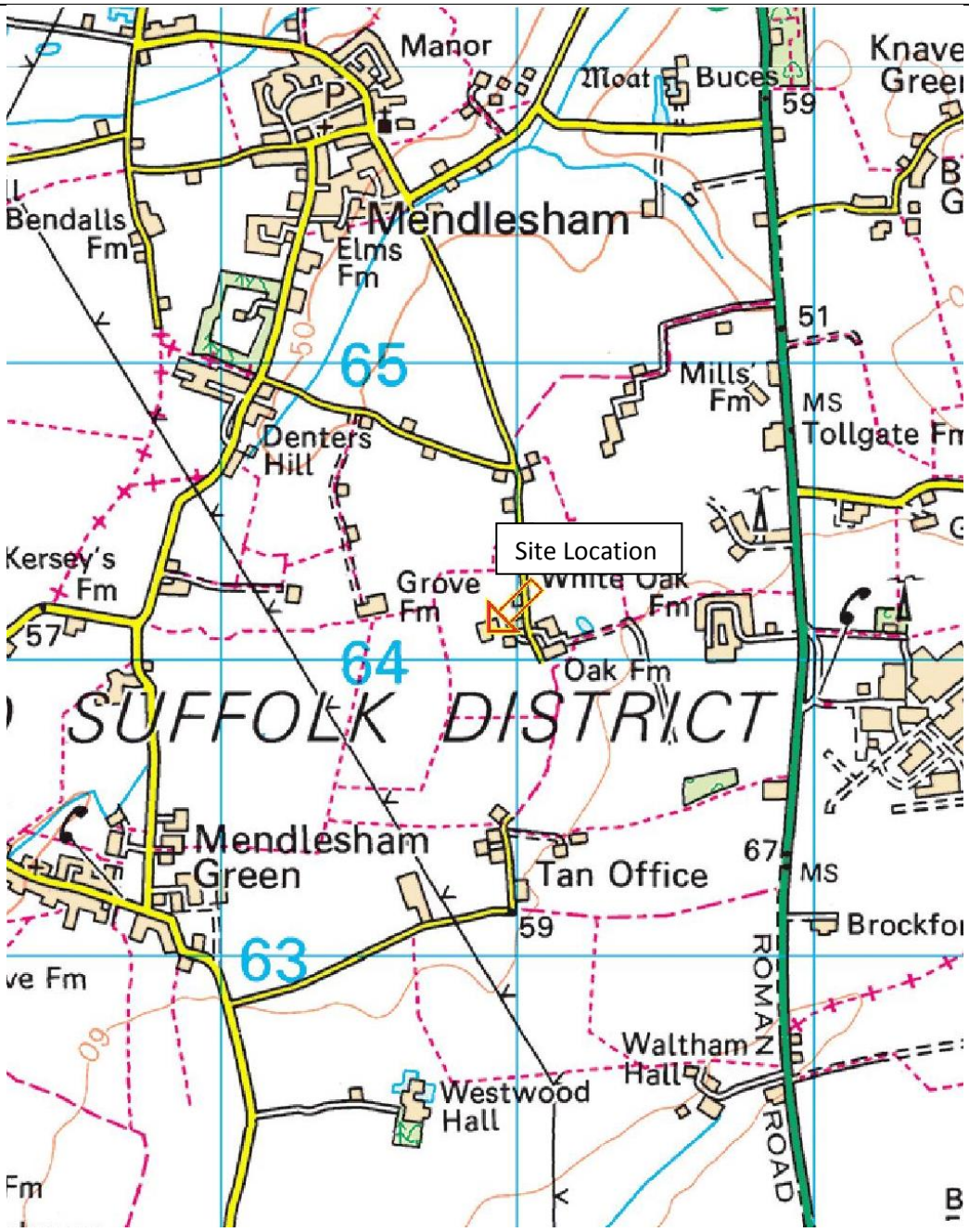
5.02 Based on the identified historic and current site activities we would recommend that the soils are tested for:

- Total Petroleum Hydrocarbons
- Asbestos ID
- Heavy Metals
- Polycyclic Aromatic Hydrocarbons
- CLEA metals

5.03 Although not related to the condition of the on-site soils, we would recommend undertaking HSG264 Pre-demolition/ major refurbishment asbestos survey on the existing building. All identified asbestos containing materials (ACMs) should then be removed, by a suitably experienced contractor, prior to the demolition/ conversion of the buildings.

6.0 APPENDICES

Appendix A - Site Location Plan



JPC Environmental Services (A division of J P Chick & Partners Limited) 7 Museum Street Ipswich IP1 1HQ	**Project:** Ashes Farm, Mendlesham, Stowmarket
	Job Number: IE19/093
	Scale: 1:50,000
Drawing Title: Site Location Plan	**Drawing Number:** 1

Appendix B – Architects Layout Plan

CDM

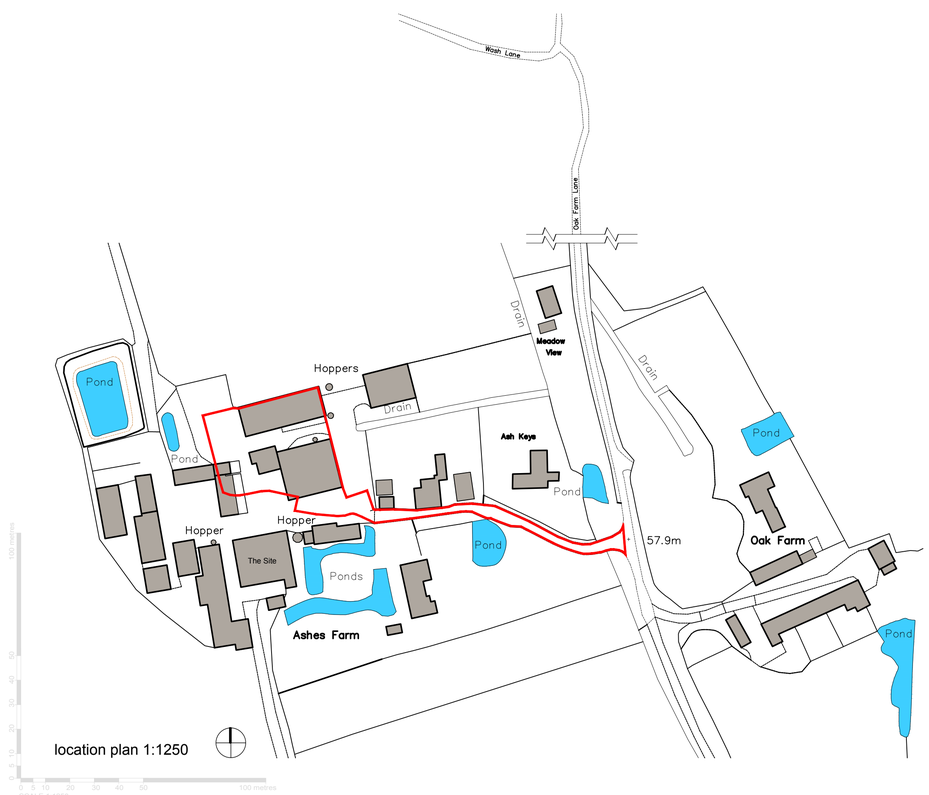
CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015

Designers Hazard Information for Construction
These notes refer specifically to the information shown on this drawing. Refer to Health & Safety Plan for further information.

1. If you do not fully understand the risks involved during the construction of the items indicated on this drawing ask your health & safety advisor or a member of the design team before proceeding.

plot 1 existing site plan 1:250

plot 1 proposed site plan, 1:250



location plan 1:1250

/	/	/		smg	PW
Date	Revision	Description		Drawn	Checked

peterwellsarchitects

office farm, letheringham, woodbridge, suffolk, IP13 7RA - 01728 745356 - info@peterwellsarchitects.co.uk

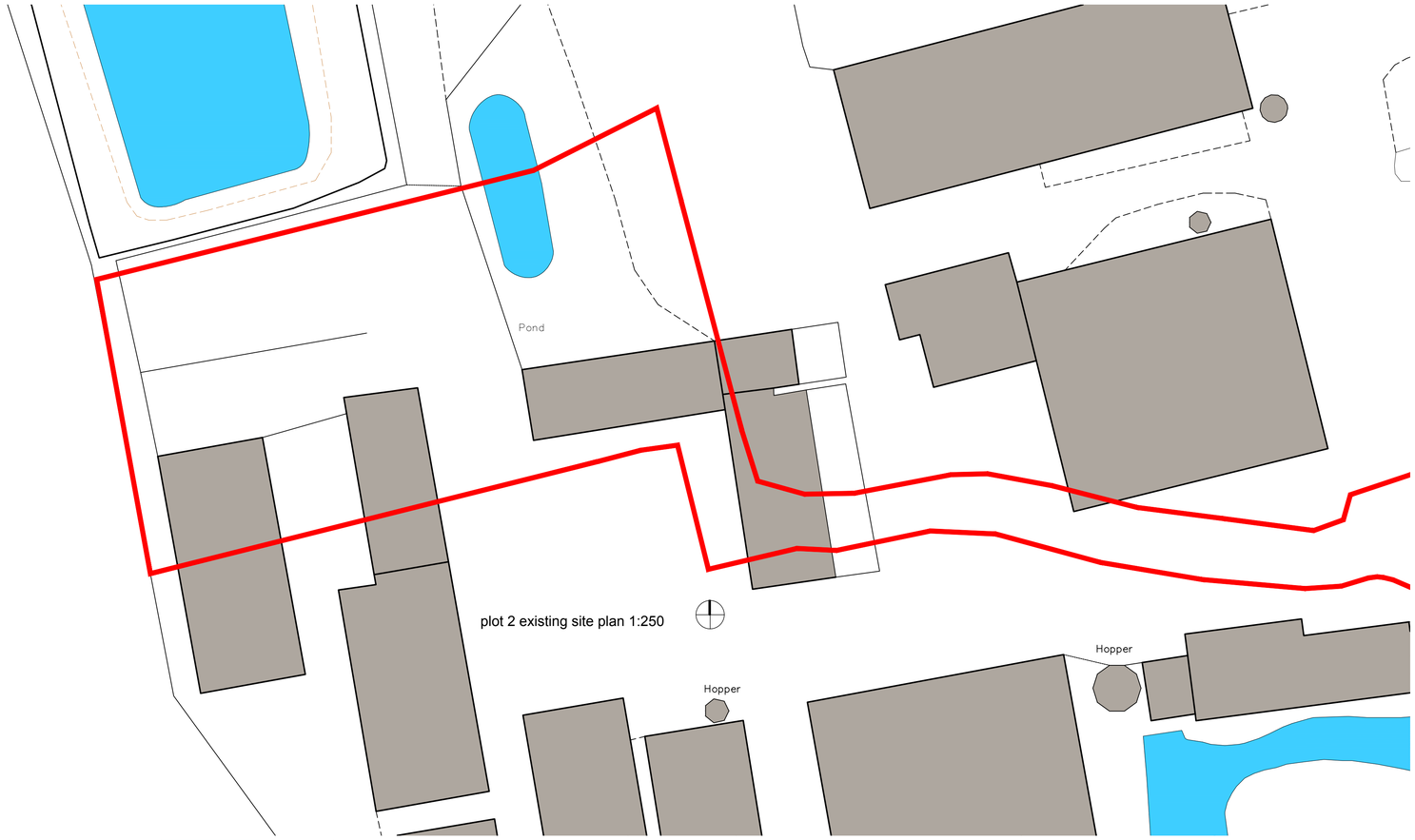
Project :	Ashes Farm, Oak Farm Lane, Mendlesham, Stowmarket, Suffolk, IP14 5TE						
Drg. Title :	Plot 1, Existing & Proposed Site Plan & Location Plan						
Client :	Simon Colchester			Drg. Status :	Planning		
Date :	Sep 2021	Scale :	1:250, 1:1250 @ A1	Drg. No. :	PW1056_PL100	Revision :	/

CDM

CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015

Designers Hazard Information for Construction
These notes refer specifically to the information shown on this drawing. Refer to Health & Safety Plan for further information.

1. If you do not fully understand the risks involved during the construction of the items indicated on this drawing ask your health & safety advisor or a member of the design team before proceeding.



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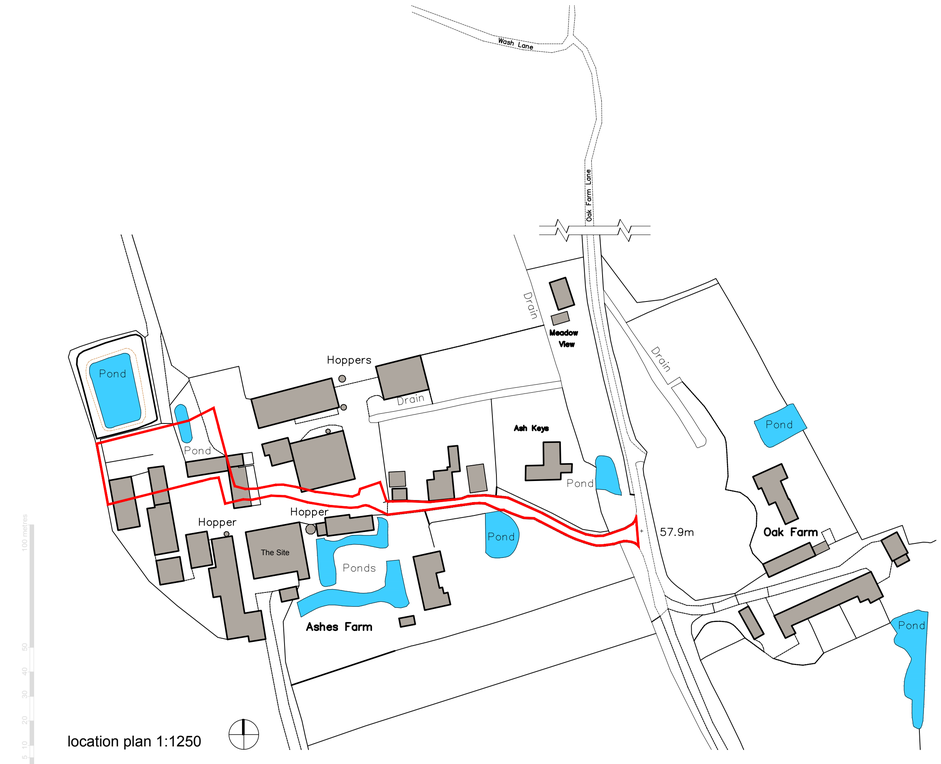

location plan 1:1250

plot 2 proposed site plan, 1:250

/	/	/	smg	PW
Date	Revision	Description	Drawn	Checked

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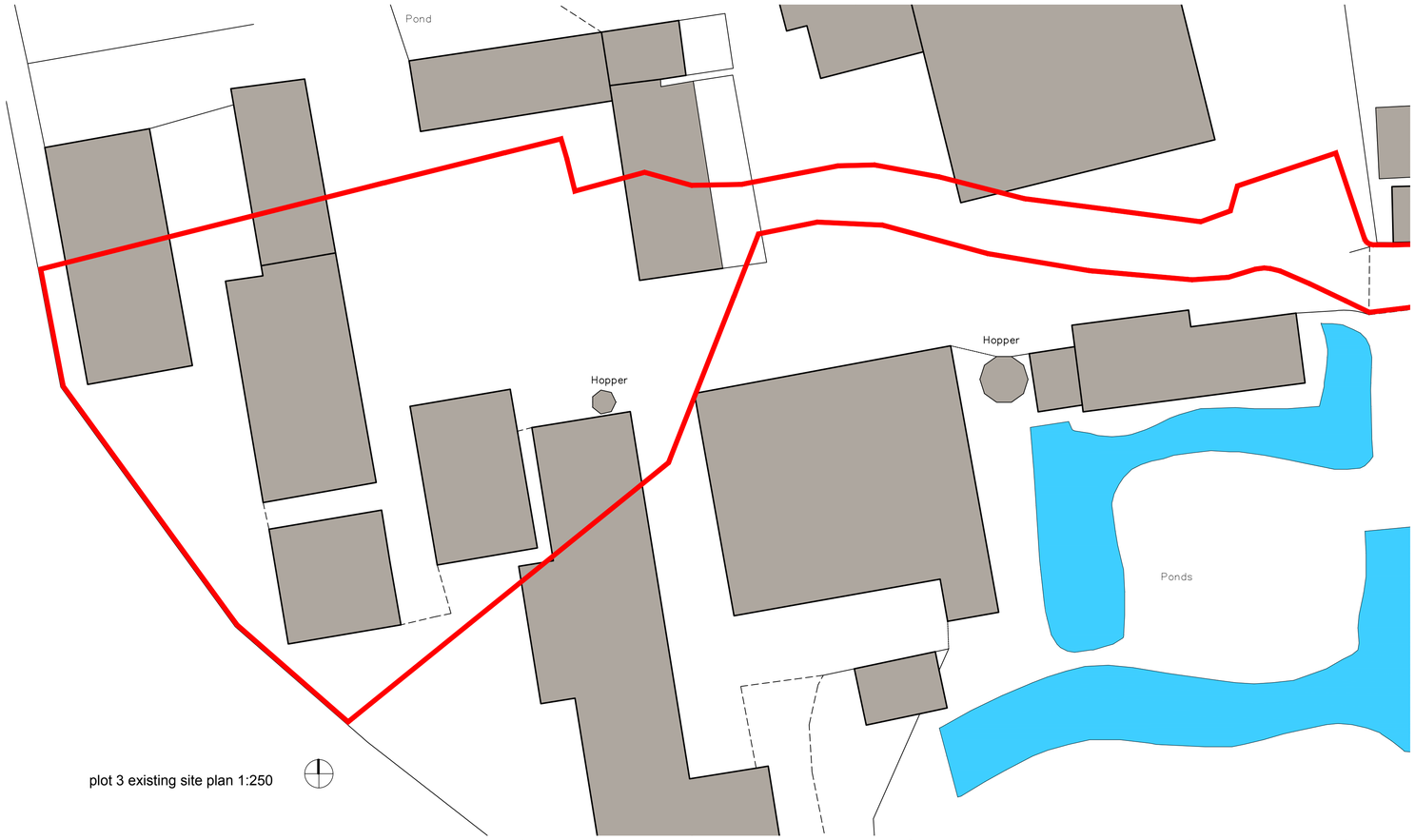
Project :	Ashes Farm, Oak Farm Lane, Mendlesham, Stowmarket, Suffolk, IP14 5TE						
Drg. Title :	Plot 2, Existing & Proposed Site Plan & Location Plan						
Client :	Simon Colchester			Drg. Status :	Planning		
Date :	Sep 2021	Scale :	1:250, 1:1250 @ A1	Drg. No. :	PW1056_PL200	Revision :	/

CDM

CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015

Designers Hazard Information for Construction
These notes refer specifically to the information shown on this drawing. Refer to Health & Safety Plan for further information.

1. If you do not fully understand the risks involved during the construction of the items indicated on this drawing ask your health & safety advisor or a member of the design team before proceeding.



plot 3 existing site plan 1:250

plot 3 proposed site plan, 1:250

location plan 1:1250

/	/	/	smg	PW
Date	Revision	Description	Drawn	Checked

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Project :	Ashes Farm, Oak Farm Lane, Mendlesham, Stowmarket, Suffolk, IP14 5TE					
Drg. Title :	Plot 3, Existing & Proposed Site Plan & Location Plan					
Client :	Simon Colchester			Drg. Status :	Planning	
Date :	Sep 2021	Scale :	1:250, 1:1250 @ A1	Drg. No. :	PW1056_PL300	Revision : /

CDM

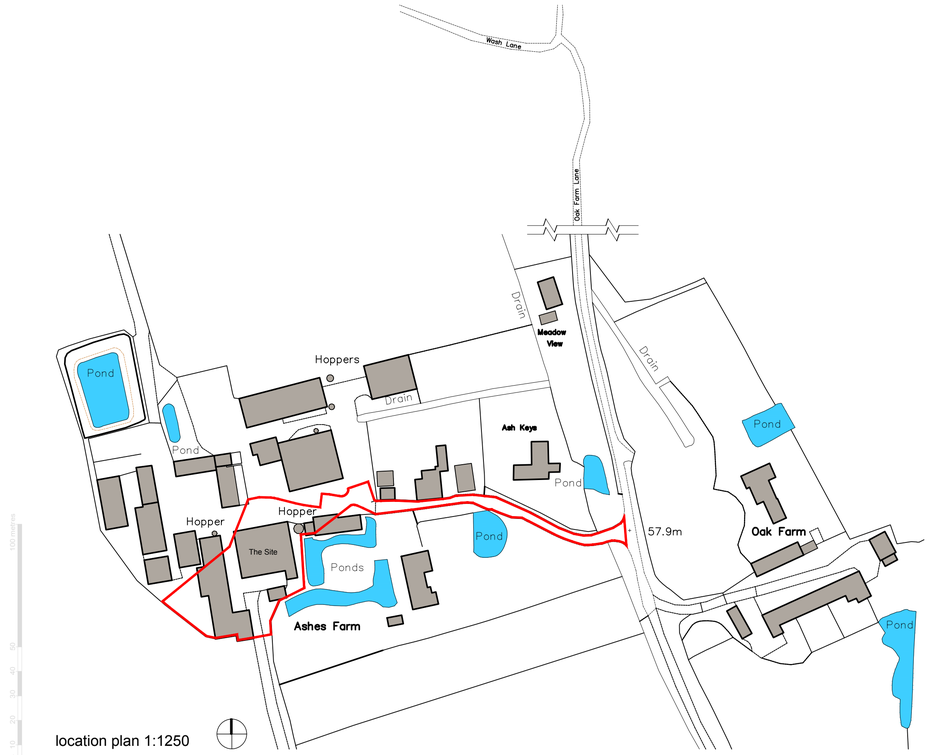
CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015

Designers Hazard Information for Construction
These notes refer specifically to the information shown on this drawing. Refer to Health & Safety Plan for further information.

1. If you do not fully understand the risks involved during the construction of the items indicated on this drawing ask your health & safety advisor or a member of the design team before proceeding.

plot 4 existing site plan 1:250

plot 4 proposed site plan, 1:250



location plan 1:1250

/	/	/		smg	PW
Date	Revision	Description		Drawn	Checked

peterwellsarchitects

office farm, letheringham, woodbridge, suffolk, IP13 7RA - 01728 745356 - info@peterwellsarchitects.co.uk

Project :	**Ashes Farm, Oak Farm Lane, Mendlesham, Stowmarket, Suffolk, IP14 5TE**						
Drg. Title :	**Plot 4, Existing & Proposed Site Plan & Location Plan**						
Client :	**Simon Colchester**			Drg. Status :	Planning		
Date :	June 2021	Scale :	1:250, 1:1250 @ A1	Drg. No. :	PW1056_PL400	Revision :	/

Appendix C – Site Photographs

Photograph 1 – Browns Barn to the east with

Asbestos concrete cladding on the side

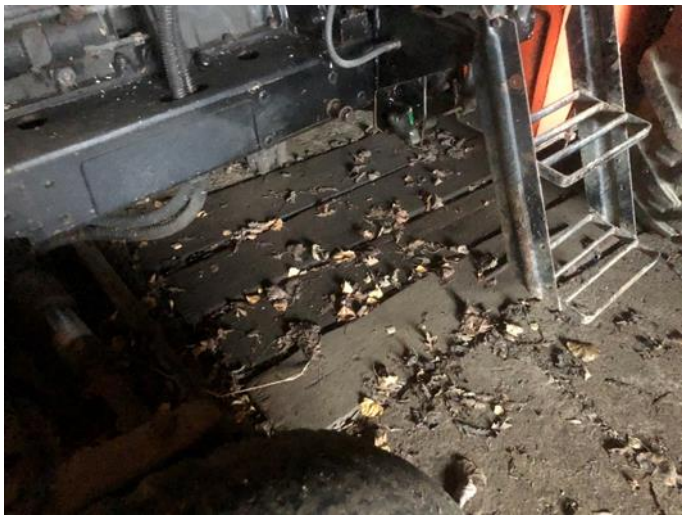
Photograph 2 – inside the Browns barn with silos and farm produce (Corn)

Photograph 3 – agricultural machinery inside Browns Barn

Photograph 4 – oil drum storage in South western quadrant of Browns Barn

Photograph 5 – Agricultural machinery in the south eastern quadrant of Browns Barn

Photograph 6 – Vehicle Inspection pit in the south eastern quadrant of Browns Barn



Photograph 7- Farm workshop room in the south eastern section of browns barn

Photograph 8- Moat to the eastern side of browns barn

Photograph 9- central barn with agricultural machinery

Photograph 10- former Piggery unit used to store spray empty containers

Photograph 11- stockpile of Asbestos containing roof tiles

Photograph 12- Western wooden barn with agricultural storage for hay bales

Photograph 13- Pond facing north from the side with agricultural farmland beyond.

Photograph 14 – Fuel tank used for agricultural machinery

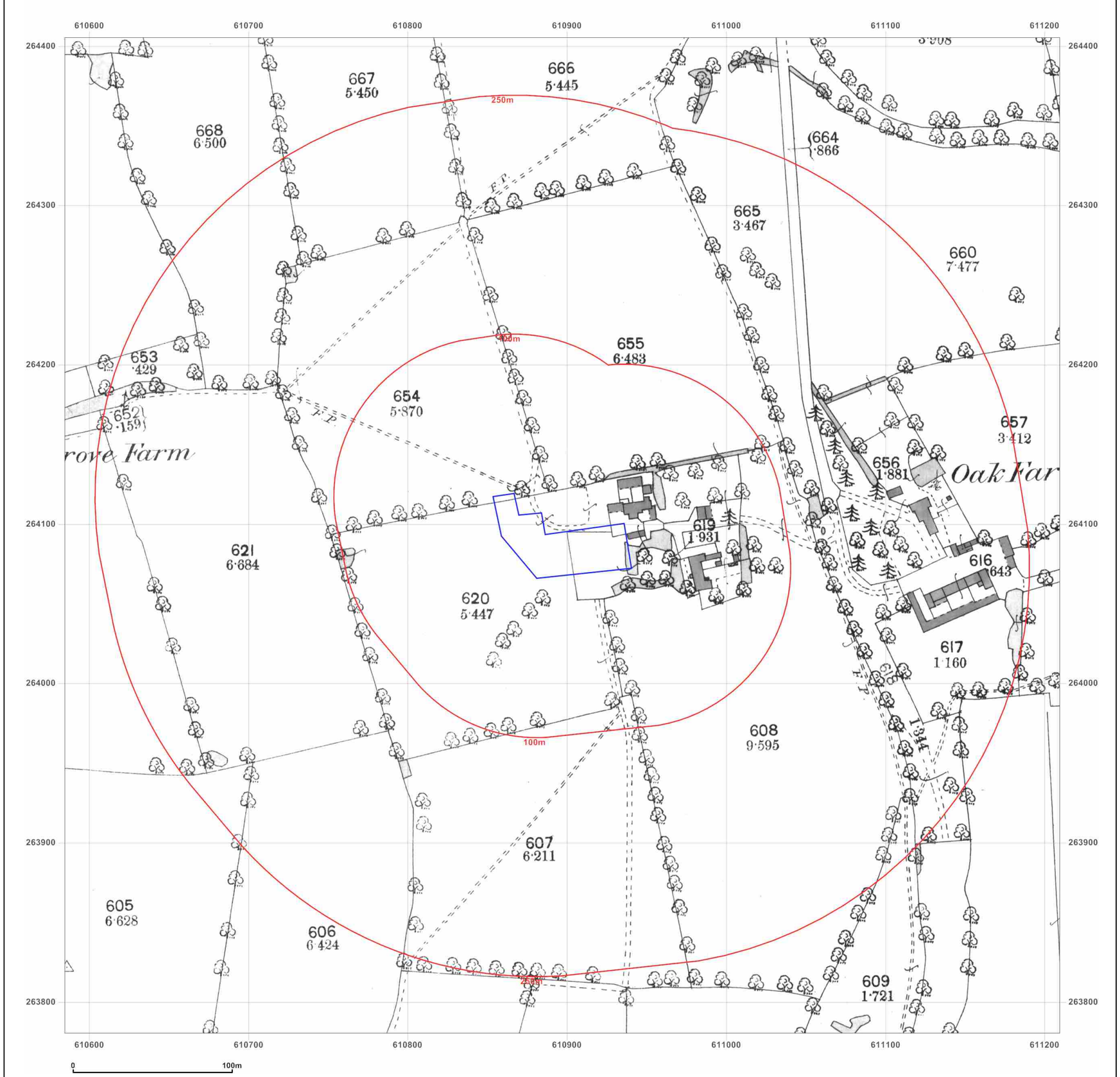
Photograph 15 – Asbestos clad barn, with heap of lime on adjacent hardstanding

Photograph 16 – Heap of rubble, from demolishment of on site building.

Photograph 17 – Farrowing pens

Photograph 18 – Bags of fertiliser.

Appendix D – Historic Maps



Groundsure INSIGHTS

Site Details:

ASHES FARM, OAK FARM LANE, MENDLESHAM, IP14 5TE

Client Ref: IE19-093
Report Ref: GS-6494361
Grid Ref: 610897, 264093

Map Name: County Series
Map date: **1885**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S

Surveyed 1885
Revised 1885
Edition N/A
Copyright N/A
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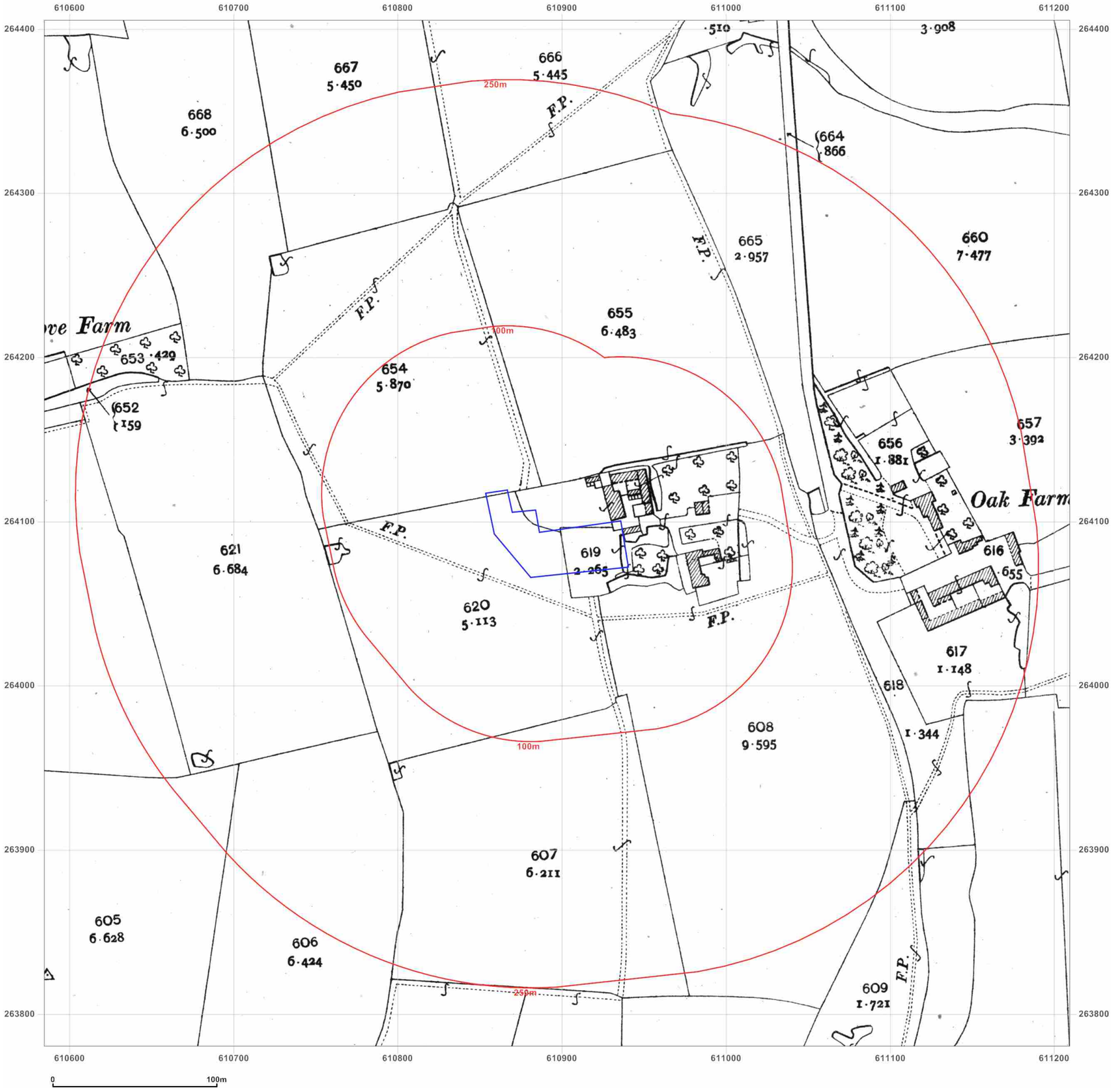
Production date: 02 December 2019

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

ASHES FARM, OAK FARM LANE, MENDLESHAM, IP14 5TE

Client Ref: IE19-093
Report Ref: GS-6494361
Grid Ref: 610897, 264093

Map Name: County Series

Map date: **1903**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1903
Edition N/A
Copyright N/A
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Map legend available at:
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