

Former St John Ambulance Site, Burton End, Haverhill CB9 9AD

Report details

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Area 0.14 ha

Status: Final



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Executive Summary

Report objective

The purpose of the commission was to inform the redevelopment of the property from a former St John Ambulance training site to the development of four residential dwellings with gardens. We understand that this Phase 1 report is being prepared as part of the planning application. Groundsure has been provided with initial layout plans of the proposed development.

Site Setting

Current use: Currently vacant parcel of land, dominated by car park area.

Surroundings: Surrounded by residential properties with gardens.

History: The Site was occupied by residential dwellings and gardens from the earliest available mapping until approximately 1988. Planning application history indicates a change of use of the Site to car park and modular building for St Johns Ambulance training from 1995. This use has remained until recently when it was partially cleared of the existing structures in preparation for redevelopment.

Geology: Superficial deposits of the Lowestoft Formation are underlain by bedrock layers of the Lewes Nodular Chalk Formation and Seaford Chalk Formation (undifferentiated).

Controlled Waters: Secondary Undifferentiated within superficial deposit of diamicton of medium vulnerability, underlain by a bedrock chalk aquifer of low vulnerability.

Human Health: Future Site residents, groundworkers during the proposed development, and residents of the nearby dwellings with private gardens.

Ecology: No designated ecological habitats have been recorded but the vegetated borders could provide potential habitats for vulnerable species, but there is no evidence of this.

Site Reconnaissance

A remote Site walkover was conducted with Bianca Dyer on 8 March 2024. At that time the Site was vacant and no significant environmental concerns were observed.

Regulatory Consultation

Groundsure contacted West Suffolk Council for details of historical uses and potential contamination for the Site. A response was received on 5 March 2024 from Terrance Stocks, an Environment Officer.

The Officer advised Groundsure that the Council was not aware of any historical or current land uses that could have caused contamination. According to the council records, there are no reasons as to why the Site may not be considered suitable for its current or proposed use. Additionally, the council has no records of historical landfilling within 250m of the Site. It was confirmed by the Officer that the Site was not determined as Contaminated Land under Part 2A of the Environmental Protection Act 1990.

Conclusions

Based on the historical land uses at the Site, this preliminary risk assessment considered there to be a low-moderate risk with respect to the proposed development. No other unacceptable risks have been identified and the Site can be suitable for the proposed development.

However, a historical well is recorded near the centre of the Site. Investigation and confirmation of the location, condition and infill of this historical well should be undertaken prior to the commencement of construction.

Recommendations

Redevelopment plans should take into account the potential impact of the historical well in relation to the safety and ground stability at the Site.

Any soils imported for use in the landscaping should be suitable for the proposed residential use.

Health and Safety risk assessment should be addressed as part of the implementation of Construction Design Management 2015 Regulations. This would address the potential for exposure to construction staff, future maintenance staff and off-Site users.

A watching brief is recommended during development for unexpected ground conditions, particularly given the potential for made ground and the possible presence of the historical well. Should such conditions be identified, work should cease in the area, conditions assessed by a suitably qualified person and the way forward agreed with the Local Authority.

This Executive Summary forms part of Groundsure report number GSP-2024-2437 is part of a wider document and should not be used in isolation.

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1 Introduction

1.1 Background

Groundsure Ltd was instructed by Bianca Dyer of Freshwater Estates to complete a Phase 1 Preliminary Risk Assessment. The report was prepared in accordance with the Groundsure Ltd proposal (ref. GSP-2024-2437p, dated 4 March 2024) and Standard Terms and Conditions of Business for the use of the following entities:

- **Freshwater Estates (Mildenhall) Ltd**

The study site (known as ‘the Site’) was Former St John Ambulance Site, Burton End, Haverhill CB9 9AD. A location plan and site layout can be found in Appendix A.

1.2 Purpose of this report

The purpose of the commission was to inform the redevelopment of the property from a former St John Ambulance training site to the development of four residential dwellings with gardens.

We understand that this Phase 1 report is being prepared as part of the planning application. Groundsure has been provided with initial layout plans of the proposed development.

1.3 Scope of works

This Phase 1: Preliminary Risk Assessment comprises a review of readily available environmental, historical and planning records, any additional data supplied by the client and a remote site inspection. Data, where copyright permits, is presented within the appendices of the report.

The risk assessment was based on a qualitative assessment of the Contaminant – Pathway – Receptor linkages that may exist at the Site because of past activities, in accordance with the Environment Agency’s ‘Land Contamination Risk Management’ (LCRM) published 8 October 2020 (updated 20 July 2023)¹ and BS10175:2011+A2:2017 Investigation of Potentially Contaminated Sites Code of Practice.

These assessments were associated with the following UK legislation

- Environmental Protection Act 1990;
- The Water Resources Act 1991; and
- Environmental Permitting Regulations (2015).

1.4 Data sources

Data sources include:

- Groundsure data reports (refs. GS-6BB-Y25-BQ8-JGG and GS-85X-GMZ-7UJ-F65)
- Remote Site inspection dated 8 March 2024 with Bianca Dyer;
- Data found on the Local Authority planning website;
- Local Authority Environmental Health consultation;

1.5 Report limitations

All work has been undertaken in accordance with our standard [terms & conditions](#) for a Consultancy Service. It should be noted that liability for any claim in relation to asbestos is excluded.

The report is based on the data sources listed within the report and is not necessarily exhaustive. The report excludes consideration of potential hazards arising from any activities at the Site other than normal use and occupancy for the identified land uses. Where access is restricted this affects the

¹ <https://www.gov.uk/guidance/land-contamination-how-to-manage-the-risks>

reliability of inferences pertaining to operations and conditions within such areas of a Site. Hazards associated with any other activities are not assessed.

It has been assumed that the conditions on Site at the time of the site reconnaissance are representative of general conditions and operations unless the Site is to be redeveloped and then it has been assumed operations cease. Furthermore, new information, improved practice and changes in legislation may change the conclusions presented here.

The report may only be relied upon by the Client and those with written approval from Groundsure. It may be submitted to regulatory bodies where appropriate. Groundsure will not accept any responsibility for use of the project outside the scope of the report.

Any values provided in recommendations are for indicative purposes of scale only. They should not be considered as quotes.

1.5.1 Site reconnaissance

The site reconnaissance was non-intrusive and below ground services were not inspected and samples were not taken. A remote site survey was undertaken with Bianca Dyer on 8 March 2024 which included a live video walkover of the Site, supplemented by representative photographs.

2 Risk Assessment Methodology

2.1 Qualitative Risk Ranking Criteria

An assessment of environmental risk associated with geo-environmental ground conditions is made in respect of the Environmental Protection Act 1990, the Water Resources Act 1991, the Environmental Damage Regulations 2015 and associated legislation, to provide a balanced and considered opinion of the property regarding the intended end use. Where applicable, recommendations are made in respect of further actions considered to be appropriate.

The report discusses the potential commercial implications of the identified risks with reference to the following risk assessment definitions (based on CIRIA C552):

2.1.1 Consequence

This is based on an assessment of the most likely outcome. All assessments have a degree of uncertainty.

Minor: *Site considered suitable for present use and environmental setting. Contamination may be present but unlikely to have an unacceptable impact on key targets. No action needed while the Site remains in present use.*

- No permanent health effects
- Easily repairable damage to buildings

Mild Risk: *Site is considered suitable for present use and environmental setting. Contamination may be present but unlikely to have an unacceptable impact on key targets. Action unlikely to be needed in present use.*

- Pollution of non-sensitive water resources
- Minor changes to crops, buildings, structures and services

Medium Risk: *Site may not be suitable for present use or environmental setting. Contamination may be present, and likely to have unacceptable impact on key targets. Action may be needed in the medium term.*

- Chronic damage to human health
- Pollution of controlled waters
- Significant change in ecosystem
- Minor repairable damage to property

Severe Risk: *Site probably or certainly unsuitable for present use or environmental setting. Contamination probably or certainly present and likely to have an unacceptable impact on key targets. Urgent action needed.*

- Short term (acute) risk to human health likely to result in significant harm
- Short term (acute) risk to a sensitive water resource
- Significant short-term risk to an ecosystem or organism forming part of an ecosystem
- Catastrophic damage to property

2.1.2 Likelihood

High Likelihood: There is a pollution linkage and an event either appears very likely in the short term or almost inevitable in the long term, or there is evidence at the receptor of harm or pollution.

Likely: There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.

Low Likelihood: There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place, and is less likely in the shorter term.

Unlikely: There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Risk Table

Likelihood	Consequence (hazard-pathway-target)			
	Severe	Medium	Mild	Minor
High	High	High	Moderate-High	Moderate
Likely	High	Moderate-High	Moderate	Low-Moderate
Low	Moderate-High	Moderate	Low-Moderate	Low
Unlikely	Moderate	Low-Moderate	Low	Low

3 Site Setting & Description

Site Location	The Site is located within a largely residential area, 850m west of Haverhill town centre.	
Current use	The Site is currently vacant, but until recently was a commercial premises, undertaking first aid training courses.	
Proposed use	Proposed redevelopment to residential properties.	
Access/ Security	<p>The Site is currently accessed from Burton End Road, via a driveway which is secured by metal gates, with additional Heras fence panels at the end of the driveway securing the remainder of the Site.</p> <p>There have been no reported incidents of trespassing, fly-tipping or vandalism at the time of the site reconnaissance. No CCTV was in operation across the Site.</p>	
Buildings	There are no buildings present at the Site. A prefabricated modular office unit had been removed and cleared from the Site prior to the Site reconnaissance.	
Topography	The centre and the south of the Site are relatively flat. The Site slopes down along the northern and eastern Site boundaries, an approximate 1.5 to 2.0m drop in elevation from the level of the Site, to level of the road to the north. The change in elevation is expressed in the vegetated banks, and in the sloping access driveway, with a small brick wall acting as a part retaining wall at the base of the slope and before the pavements.	
External areas	<p>The Site is dominated by a central asphalt car park area which was generally of good condition with little evidence of cracking or potholes. The car park area was surrounded by raised kerbing.</p> <p>A strip of hardpacked gravel, earth and broken concrete is located to the south of the asphalt car park area, where the former prefabricated office unit was located. Narrow strips of vegetated soft landscaping are located along the perimeters of the Site and on either side of the sloping driveway.</p>	
Surface water features	No surface water features were identified on or near to the Site.	
Site drainage	Based on the topography of the Site, rainwater falling on the car park area drains downslope into a possible municipal storm drain located at the base of the sloping access driveway. Across the rest of the Site, the surface waters freely drain into the underlying soils.	
Services	The Site is served by mains electricity, water and connected to the municipal drainage system. It is anticipated that new service connections will be required as part of the proposed development.	
Surroundings	North	Burton End road.
	South	Residential apartments with parking.
	East	Greenfields Way road with residential properties with gardens beyond.
	West	Yerrill Garden access road with residential properties with gardens beyond.

Site location plans and a representation of the key site features were presented in Appendix A. Photographs taken during the recent site reconnaissance were shown in Appendix B.

4 Environmental Setting

4.1 Geology

4.1.1 Regional

The anticipated regional geological succession based on 1:10,000 and 1:50,000 scale British Geological Survey (BGS) mapping is presented in the Groundsure Insight and summarised in the table below.

Geological Unit	Description*	Comment
Superficial		
Lowestoft Formation - Diamicton	The Lowestoft Formation forms an extensive sheet of chalky till, together with outwash sands and gravels, silts and clays. The till is characterised by its chalk and flint content	Mapped across the site.
Bedrock		
Lewes Nodular Chalk Formation and Seaford Chalk Formation (undifferentiated) - Chalk	Chalk with subsidiary calcareous mudstone and flint.	Santonian Age - Turonian Age
Notes: * Description is based on information within the BGS Lexicon of Named Rock Units and the Groundsure Insight		

4.1.2 Natural Ground Subsidence

The following table summarises the maximum hazard of natural subsidence recorded within 50m of the Site, as assessed by the BGS.

Geotechnical Hazards	Maximum Hazard Rating
Shrink-Swell	Low
Running Sands	Very Low
Compressible deposits	Negligible
Collapsible deposits	Very Low
Landslides	Very Low
Ground dissolution of soluble rocks	Low

4.1.3 Mining, ground workings and natural cavities

The Site lies within an area which may have been affected by sporadic chalk underground mining of restricted extent may have occurred.

The closest recorded entry in the BritPits database was Puddle Brook Gravel Pit (sand & gravel), 400m south.

4.1.4 Radon

The Site does not fall within a Radon Affected Area, less than 1% of properties are estimated to be affected.

4.2 Controlled Waters

4.2.1 Hydrogeology

Groundsure environmental data may be viewed in Appendix C.

Superficial Aquifer	Secondary Undifferentiated: In general these layers have previously been designated as both minor and non-aquifers in different locations due to the variable characteristics of the rock type.
Bedrock Aquifer	Principal: High permeability layers providing a high level of water storage that may support water supply/river base flow on a strategic scale.
Groundwater Vulnerability - Superficial	Medium - Intermediate between high and low vulnerability. Thickness - >10m
Groundwater Vulnerability - Bedrock	Low - Areas that provide the greatest protection from pollution.
Groundwater vulnerability - Soluble Rock Risk	Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Percentage of the grid square covered by maximum risk - 4%
Groundwater Abstractions	37 groundwater abstraction licences have been identified within 2,000m of the Site. The closest entry was for a historical licence 646m to the east for general use. However, the closest active entry was 663m to the south east for the daily abstraction of the 720m ³ of groundwater for Boiler Feed. *Note <20m ³ /day Local Authority registered private supply boreholes have not been considered in this assessment.
Potable Groundwater Abstractions	No potable groundwater abstraction are recorded been identified within 2,000m of the Site.
Source Protection Zones	A Source Protection Zone 3 (Total Catchment) has been recorded on Site.
Water Framework Directive (WFD) Groundwater Body Classification	Groundwater body – North Essex Chalk Overall rating – Poor Reasons for failure – Poor Chemical and Quantitative ratings in 2019.

Groundwater level and flow	No groundwater level information was available at the time of writing.
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4.2.2 Hydrology

Nearest Surface Water	No surface water features have been identified within 250m of the Site.
Water Framework Directive (WFD) Surface Water Body Classification	Water body catchment on-site - Stour Brook River Location - 769m north east Environment Agency ratings in 2019: <ul style="list-style-type: none"> ● Overall - Moderate; ● Chemical - Fail; and ● Ecological -Moderate.
Surface Water Abstractions	No active surface water abstraction licences have been identified within 250m of the Site.

4.2.3 Flood Risk

The table below summarises the highest risk for each flood type data provided in the Groundsure Insight report.

	On Site	Within 50m
Risk of Flooding from Rivers and Sea (RoFRaS)	None	None
Historical Flood Events	Not identified	Not identified
Flood Defences	Not identified	Not identified
Areas Benefiting from Flood Defences	Not identified	Not identified
Flood Storage Areas	Not identified	Not identified
Flood Zone 2	None	None
Flood Zone 3	None	None
Surface water flooding	1 in 30 year, 0.1m - 0.3m	1 in 30 year, 0.3m - 1.0m
Groundwater flooding	Low	Low

4.3 Environmental Designations

The relevant environmental designations recorded in the Groundsure Insight on or within 500m of the Site have been summarised in the following table.

Designation	Number	Details
Nitrate Vulnerable Zones	2 (on-site)	Surface water - Lower Stour NVZ Groundwater - Sandlings and Chelmsford

Sites of Special Scientific Interest (SSSI) Impact Risk Zones	1 (on-site)	No related developments requiring consultation identified.
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4.4 Culturally and Visually Sensitive Sites

The visual and cultural designations recorded in the Groundsure Insight on or 250m the Site are summarised in the following table.

Designation	Number	Details
Listed Buildings	1	The entry relates to the Grade II 78 Burton End, 123m north east of the Site.

4.5 Agricultural Designations

The Site and the surrounding area has been classified as Grade 2 (very good) agricultural land.

4.6 Ecological Habitat Designations

No ecological habitat designations have been recorded in the Groundsure Insight on or within 250m of the Site.

5 Potentially Contaminative Land Use

5.1 Permits, Authorisations, Licences and Records

Groundsure environmental data may be viewed in Appendix C.

5.1.1 On site records

Data held by Groundsure indicates that the Site has not been designated as Contaminated Land under Part 2A of the Environmental Protection Act.

No other records of interest have been identified at the Site.

5.1.2 Off site records

The following records were identified within 250m.

Type	No.	Comments
Current industrial land uses		
Recent industrial land uses	5	The nearest entries related to an Electricity Sub Station 101m south east.
Pollution Incidents	3	The nearest incident involved Organic Chemicals/Products (Hydrocarbons) causing a minor impact on air in 2001, located 212m to the north east.

6 Historical Setting

6.1 Historical Review

The following table provides an outline of the historical land use both on-Site and in the surrounding areas based (unless otherwise referenced) on mapping and aerial imagery from the Groundsure Insight (Appendix C) and Historical Map Pack (Appendix D).

These are not comprehensive as occasionally transient uses existed between map survey dates.

Date	On Site Features	Off Site Features
1884	Prior to this date the site had been developed to comprise a row of terrace buildings with private gardens along the west and part of several adjoined buildings in the north west. In the centre, a well was labelled and three ancillary units were situated in the south.	The Site is situated in the largely rural settlement of Burton End. Several properties line the road to the north and a watercourse is situated beyond these properties.
1884-1899	No significant changes were identified.	No significant changes were identified.
1903	No significant changes were identified.	Rope walk mapped 245m East.
1903-1924	No significant changes were identified.	No significant changes were identified.
1926	The part of the buildings along the north perimeter and the ancillary units have been demolished. Additionally, the well was no longer labelled and the majority of the buildings no longer had private gardens.	No significant changes were identified.
1938	No significant changes were identified.	An allotment garden was labelled immediately adjacent to the west of the site.
1936-1960	No significant changes were identified.	Significant residential development in the local area. The property adjoining the south is named Parson Yard.
1967	Minor reconfiguration had occurred to the terrace building and two ancillary units had been constructed in the south. The site was possibly associated with Parson Yard.	Parson Yard extends off site to the south. The area 40m north of the site had been developed into residential housing.
1968	The ancillary units in the south had been extended and joined together. Banks shown along the north and east boundary, sloping down to adjoining roads.	The surrounding area to the west and south had been developed for residential purposes.

1968-1986	No significant changes were identified.	No significant changes were identified.
1988	The terrace buildings in the west had been cleared.	The rope walk had been cleared.
1988-1994	No significant changes were identified.	No significant changes were identified.
1999 (Aerial Imagery)	The site had been redeveloped to comprise a building in the south and a car park in the north.	No significant changes were identified.
2007 (Aerial Imagery)	No significant changes were identified.	The former parson yard to the south had been cleared with evidence of groundworks.
2013 (Aerial Imagery)	No significant changes were identified.	The site to the south was redeveloped into residential apartments.
2017 -Recent (Aerial Imagery)	The site remained unchanged.	No significant changes were identified.

6.2 Underground features and proposed infrastructure

No records of tunnels or proposed infrastructure projects have been recorded within the Groundsure Insight.

6.3 Historical military land

No additional records of military land have been recorded within the Groundsure Insight.

6.4 Unexploded Ordnance

The UK has a history of military activity, including extensive military training sites, bombing during the First World War and sustained strategic bombing during the Second World War. A legacy of this military activity was the incidence of UXO encountered throughout Britain to this day, particularly during construction and redevelopment works. However, no evidence of bomb damages (such as ruins) were identified on post war mapping.

7 Site Reconnaissance

A remote walkover of the Site was carried out by a Groundsure representative on 8 March 2024 with Bianca Dyer. The weather was overcast but fair at the time of inspection. The general description was provided in Section 3.

A site plan of key features (Figure 2) was included in Appendix A and a photographic record of the site walkover was provided in Appendix B.

7.1 Operational and Environmental Observations

Site Activities	The Site was vacant at the time of the walkover, but the previous prefabricated office and shed had been cleared from the Site. Some construction materials had recently been brought to the Site in preparation of Site works commencing.
Materials / Waste Stored	<p>The Site was largely vacant and empty at the time of the walkover. However, the following materials had recently been brought to the Site relating to proposed construction works. The following materials were stored in the south of the Site:</p> <ul style="list-style-type: none"> ● Empty steel skinned internally banded 500L white diesel tank, to be used to refuel plant when construction works commence, ● Concrete beams, ● Plastic drainage pipes, ● Step ladder, ● Tiles. <p>Wind blown litter had gathered along the perimeters of the Site.</p>
Environmental Management	No formal environmental management system was in operation or required.
Environmental observations - surroundings	Whilst the neighbouring properties were not inspected, no significant environmental concerns were observed.

7.2 Regulated Activities

Groundsure did not identify activities requiring environmental permits were being undertaken at the Site.

8 Regulatory Consultations

8.1 Local Authority Environmental Protection Team

Groundsure contacted West Suffolk Council for details of historical uses and potential contamination for the Site. A response was received from Terence Stocks, Environment Officer at the Council regarding contaminated land matters at the Site on 5 March 2024.

The Officer advised that the Council was not aware of any potentially contaminative activities at the Site. It was confirmed by the Officer that the Site was not determined as Contaminated Land under Part 2A of the Environmental Protection Act 1990. Furthermore, it was also not on the Council's list for detailed inspection and there they do not intend to take action against the Site under Part 2A.

With regards to the potential redevelopment, the officer confirmed that depending on how many residential units the property is being split into would depend on the level of information. If it is 1 or 2 they would require a questionnaire and a desktop report or similar, if it is more than 2 we would require a phase 1 desk study.

The full response from the Local Authority was included in Appendix E.

8.2 Local Authority Planning Section

Groundsure did not consider it necessary to undertake consultations with the Local Authority Planning Department. However, Groundsure reviewed the planning information available on the West Suffolk Council website and a summary of the previous applications on the Site can be found in the table below.

Date of application	Application description
26 July 1995	Reference: E/95/2145/P Decision: Approve application Erection of modular building and garage for use as St. John Ambulance Headquarters, provision of car parking and alteration of existing vehicular access. There were no contaminated land conditions detailed on the decision notice associated with this planning permission.
24 November 1980	Reference: E/80/3624/P Decision: Approve application Proposal: ERECTION OF 4 TERRACED HOUSES WITH ACCESS There were no contaminated land conditions detailed on the decision notice associated with this planning permission.
30 September 1975	Reference: E/75/2896/P Decision: Approve application Proposal: FOUR HOUSES FOUR GARAGES AND ACCESS There were no contaminated land conditions detailed on the decision notice associated with this planning permission. It is however noted that the previous uses are described as builders yards and funeral directors.

In addition to the above, the following planning application related to the site adjacent to the south, and previously referred to as Parsons Yard, which was submitted in January 2007:

SE/07/0052 | Planning Application - Erection of 10 residential flats, provision of parking and landscaping and new vehicular access following demolition of existing dwelling and outbuildings (revised scheme) as amended by plans received 17 Jan 2007 showing alterations to the access. | 1, York Road Haverhill CB9 8JS

There were no contaminated land conditions detailed on the decision notice associated with this planning permission. A review of the planning history revealed that this neighbouring site to the South was previously: a builders yard, toll hire yard and office, and a dance studio.

8.3 Petroleum Licensing Section

Groundsure did not consider it necessary to undertake consultations with the Petroleum Licensing Department.

8.4 Environment Agency

Groundsure did not consider it necessary to undertake consultations with the Environment Agency.

9 Conceptual Site Model

The qualitative assessment provides a conceptual model based on a source-pathway-receptor pollutant linkage risk assessment as detailed in the Environment Agency’s Land Contamination Risk Management model (LCRM). If one of these elements is missing there can be no significant environmental risk according to the statutory definition of “Contaminated Land” under Part 2A of the Environmental Protection Act 1990. This is a test to demonstrate that no significant harm is occurring.

9.1 Receptors

The following identified receptors may be impacted by an environmental hazard if linking pathways are found to be present:

- Human health
 - Site Users - Future residents, visitors in the existing format and construction workers during the proposed redevelopment
 - Surrounding Site Users - Surrounding residential properties.
- Controlled waters
 - Groundwater - Secondary Undifferentiated within superficial deposit of diamicton of medium vulnerability, underlain by a Principal aquifer within bedrock chalk aquifer of low vulnerability.
 - Surface water - Watercourse 151m north of the Site.
- Other
 - Ecological - No sensitive habitats identified near the Site.
 - Property - Existing and proposed subsurface buildings and infrastructure

9.2 Overview of potential current and historical sources of contamination and associated contaminants

The following identified potentially contaminative land uses may be a source of environmental hazard if linking pathways are found to be present.

9.2.1 On Site

Activity	Dates	Location	Potential contaminants of concern
Made ground (from previous residential buildings on Site and infilled well)	Pre 1884 to potentially until 1988	West of the Site	Possible metals, fuel and oil hydrocarbons, asbestos, and other organic and inorganic compounds.

9.2.2 Off Site

Activity	Dates	Location	Potential contaminants of concern
Agricultural use and allotment gardens	Pre 1884 to 1926	West and south	PAHs, ash, metals, herbicides.
Builders yard	Circa 1960 to 1988	Adjacent to the south	Possible metals, fuel and oil hydrocarbons, asbestos, and other organic and inorganic compounds.

9.3 Conceptual Model

Receptor	Pathways	Risk
SOURCE: Current and former activities on the Site		
Site Users	Dermal contact; Soil ingestion; Dust ingestion/ inhalation	Low-Moderate
Groundworkers		Low-Moderate
Surrounding Site Users	Migration via permeable geology and groundwater then Dermal contact (water/ soils); Soil ingestion.	Low
	Migration via surface water runoff then Dermal contact (water/ soils); Soil ingestion.	Low
Groundwater	Horizontal and vertical migration	Low-Moderate
Surface Water	Surface water runoff and/or Lateral migration via permeable geology.	Low
Ecology	Surface water runoff and/or Migration via permeable geology and groundwater then Direct uptake then Bioaccumulation	Low
Property	Direct contact (chemical attack) Explosive conditions	Low

Receptor	Pathways	Risk
SOURCE: Current and former activities in the surrounding area		
Site Users	Migration via permeable geology and groundwater then Dermal contact; Soil ingestion; Dust ingestion/ inhalation	Low-Moderate
Groundwater	Horizontal and vertical migration via the creation of preferential pathway	Low
Property	Migration via permeable geology and groundwater then Direct contact (chemical attack)	Low

9.4 Justification

A review of the available mapping records indicates that the Site was occupied by residential dwellings and gardens from the earliest available mapping until approximately 1988. Planning application history indicates a change of use of the Site to car park and modular building for St Johns Ambulance training from 1995. This use has remained until recently when it was partially cleared of the existing structures in preparation for redevelopment. There is a slight risk of oils and hydrocarbons across the Site from the car park, however this is considered to be low due to the good condition of the asphalt and drainage away to the north of the Site. As the previous structures across the Site have been demolished over time, there is a risk of made ground being present. However, Groundsure considered it unlikely that the underlying soils could pose an unacceptable risk to current and future Site users and surrounding Site users.

The Site is underlain by superficial deposits of the Lowestoft Formation - Diamicton, overlying the bedrock of the Lewes Nodular Chalk Formation and Seaford Chalk Formation (undifferentiated) - Chalk. Additionally, a well is shown in the centre of the Site in the historical mapping from 1884 until 1960 when it was either infilled or covered, presenting a possible direct pathway to groundwater. As such there is no to little protection for the vulnerable underlying secondary undifferentiated aquifer and the principal bedrock aquifer. Furthermore, the closest watercourse was located 151m north of the Site. Therefore, it can not be discounted that preferential pathways could be created into underlying groundwaters via the construction of foundations during the redevelopment. However, as the redevelopment is for low-rise residential buildings not requiring deep foundations, and there is unlikely to be significant levels of ground contamination at the Site, the risk to surface water and groundwater is considered to be Low-Moderate.

10 Conclusions & Recommendations

10.1 Conclusions

Based on the historical land uses at the Site, this preliminary risk assessment considered there to be a low-moderate risk with respect to the proposed development.

A historical well is recorded near the centre of the Site. Investigation and confirmation of the location, condition and infill of this historical well should be undertaken prior to the commencement of construction.

No other unacceptable risks have been identified and the Site can be suitable for the proposed development.

10.2 Recommendations

Redevelopment plans should take into account the potential impact of the historical well (if present) on the safety and ground stability at the Site.

Any soils imported for use in the landscaping should be suitable for the proposed residential use.

Health and Safety risk assessment should be addressed as part of the implementation of Construction Design Management 2015 Regulations. This would address the potential for exposure to construction staff, future maintenance staff and off-Site users.

A watching brief is recommended during development for unexpected ground conditions, particularly given the potential for made ground and possible presence of the historical well. Should such conditions be identified, work should cease in the area, conditions assessed by a suitably qualified person and the way forward agreed with the Local Authority.

Appendix A

Figures

Site Address: Former St. John Ambulance Site, Burton End, Haverhill CB9 9AD

Project Reference: GSP-2024-2437

Grid Reference: 566359, 245311

Scale at A3: 1:10,000

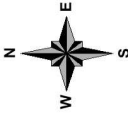


Figure 1: Large Scale Site Location

Date: 22/03/2024

Site Details

Outline 1km Buffer

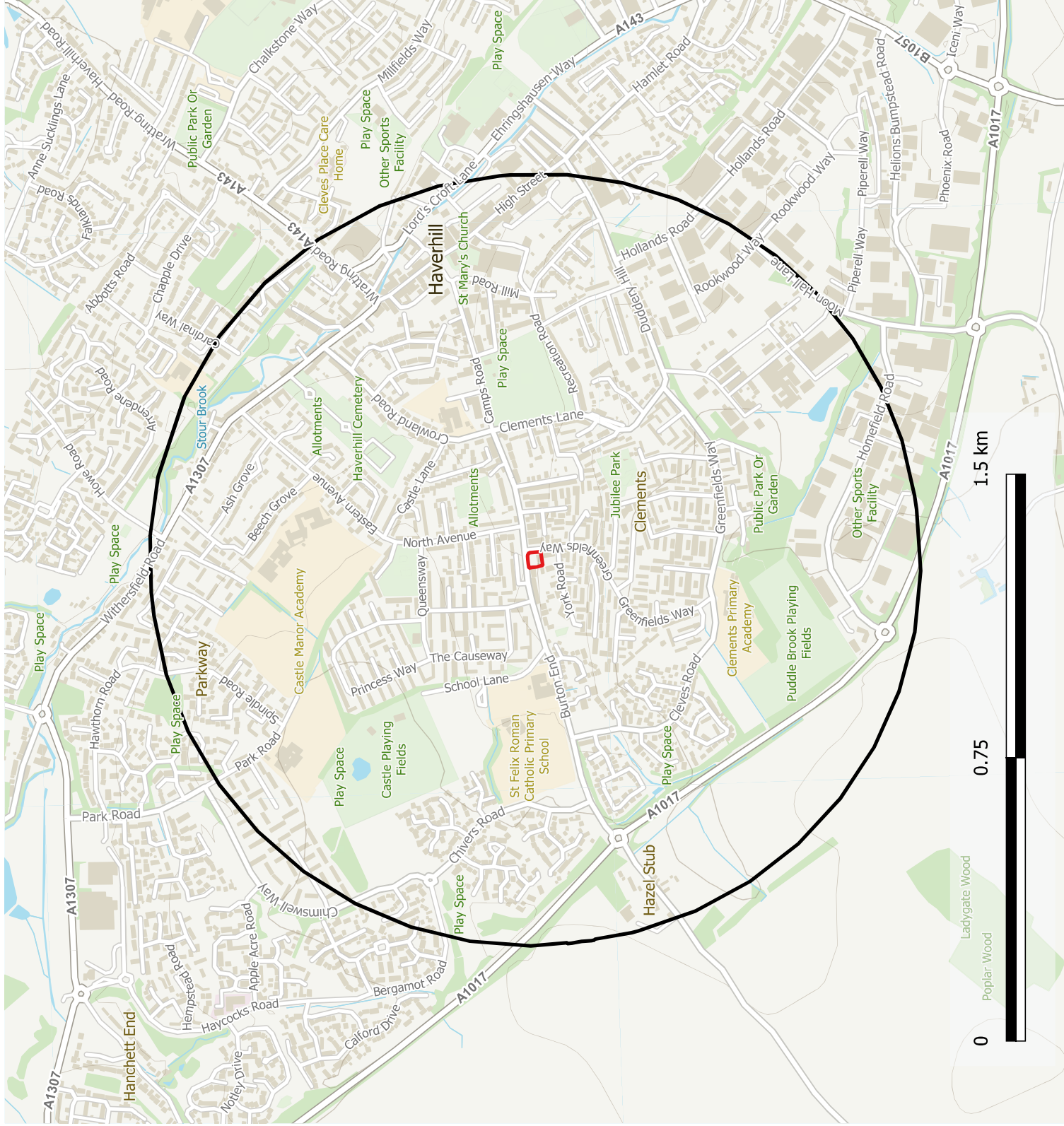
Produced by Groundsure

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E: info@groundsure.com

W: www.groundsure.com

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Site Address: Former St John Ambulance Site, Burton End, Haverhill CB9 9AD

Project Reference: GSP-2024-2437

Grid Reference: 566359, 245311

Scale at A3: 1:500

Figure 2: Key Features Plan






Date: 22/03/2024



Mastermap Legend

-  Multi Surface
-  Building
-  Water
-  Manmade Surface
-  Road or Track
-  Natural Surface

Site Details

-  outline
-  Layers
-  Gate
-  Construction materials
-  Above Ground Storage Tank

Annotations not to scale



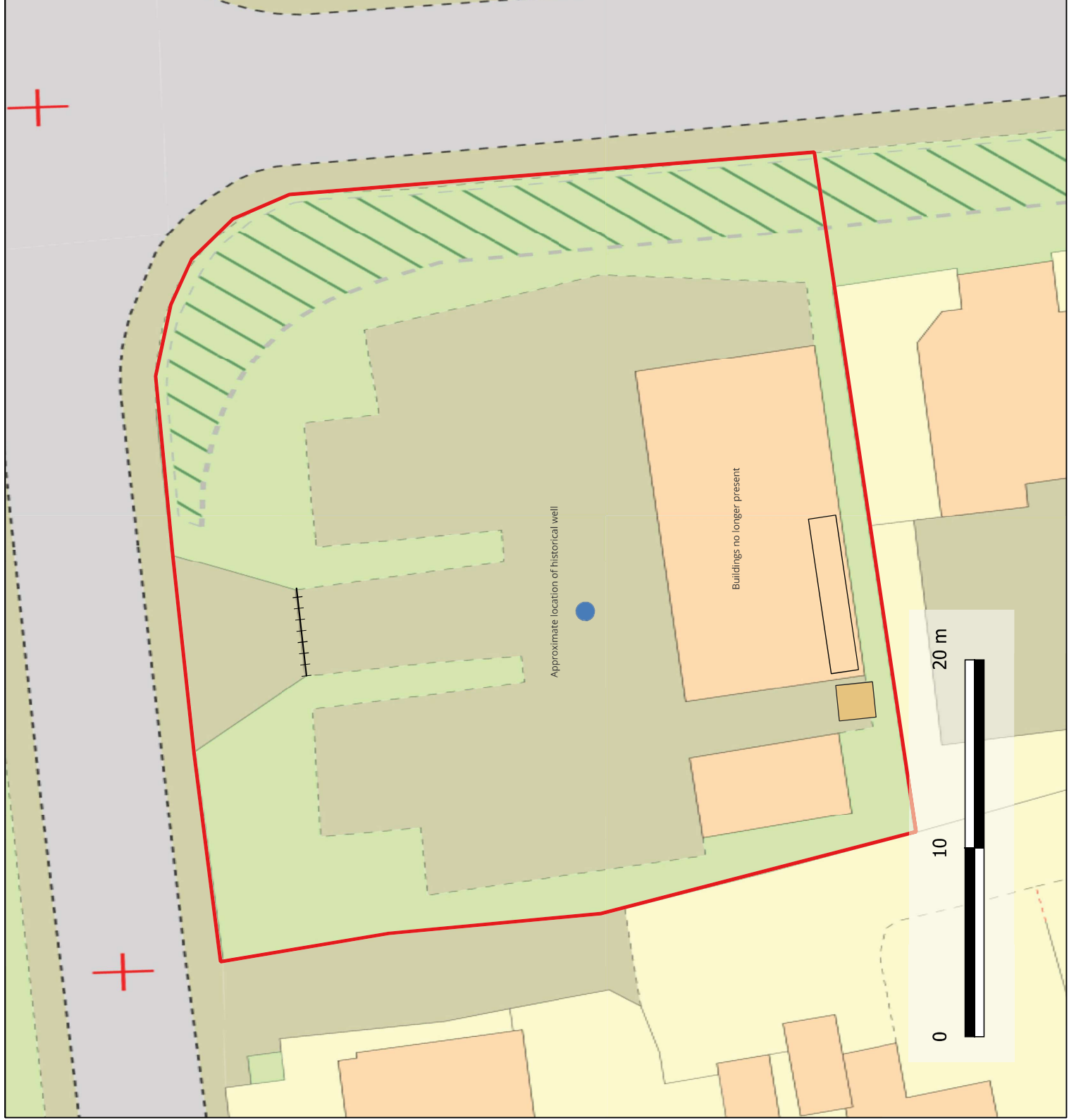
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Appendix B

Photographic Record



Photo 1: Site access from sloping driveway, with lockable gates at the base of the ramp.



Photo 2: Grassed embankment with a small retaining wall along the access driveway in north of the Site.



Photo 3: Typical view across the centre of the Site dominated by the asphalted car park area.



Photo 4: View of the southern portion of the Site where the previous office unit was removed.



Photo 5: Currently empty (at time of walkover) 500L white diesel tank.



Photo 6: Construction materials stored in the south of the Site.



Photo 7: Example of the wind blown litter along the south of the Site.



Photo 8: View of the north east corner of the Site, dominated by former car parking area.

Appendix C

Groundsure Insight

ST JOHNS AMBULANCE, BURTON END, HAVERHILL, SUFFOLK, CB9 8JS

Order Details

Date: 05/03/2024
Your ref: GSP-2024-2437
Our Ref: GS-6BB-Y25-BQ8-JGG

Site Details

Location: 566359 245310
Area: 0.14 ha
Authority: [West Suffolk](#) ↗



Summary of findings

[p. 2 >](#) **Aerial image**

[p. 9 >](#)

OS MasterMap site plan

[p.14 >](#) groundsure.com/insightuserguide ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	0	0	6	38	-
17 >	1.2 >	Historical tanks >	0	0	0	1	-
18 >	1.3 >	Historical energy features >	0	0	7	14	-
19	1.4	Historical petrol stations	0	0	0	0	-
19 >	1.5 >	Historical garages >	0	0	0	1	-
19	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
20 >	2.1 >	Historical industrial land uses >	0	0	8	45	-
22 >	2.2 >	Historical tanks >	0	0	0	1	-
23 >	2.3 >	Historical energy features >	0	0	19	41	-
25	2.4	Historical petrol stations	0	0	0	0	-
25 >	2.5 >	Historical garages >	0	0	0	2	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
27	3.1	Active or recent landfill	0	0	0	0	-
27	3.2	Historical landfill (BGS records)	0	0	0	0	-
28	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
28	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
28	3.5	Historical waste sites	0	0	0	0	-
28	3.6	Licensed waste sites	0	0	0	0	-
28 >	3.7 >	Waste exemptions >	0	0	0	2	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
30 >	4.1 >	Recent industrial land uses >	0	0	5	-	-
31	4.2	Current or recent petrol stations	0	0	0	0	-
31	4.3	Electricity cables	0	0	0	0	-
31	4.4	Gas pipelines	0	0	0	0	-
31	4.5	Sites determined as Contaminated Land	0	0	0	0	-



32	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-	
32	4.7	Regulated explosive sites	0	0	0	0	-	
32	4.8	Hazardous substance storage/usage	0	0	0	0	-	
32	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-	
32	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-	
33	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-	
33 >	4.12 >	<u>Radioactive Substance Authorisations</u> >	0	0	0	1	-	
33 >	4.13 >	<u>Licensed Discharges to controlled waters</u> >	0	0	0	2	-	
34	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-	
34	4.15	Pollutant release to public sewer	0	0	0	0	-	
34	4.16	List 1 Dangerous Substances	0	0	0	0	-	
34	4.17	List 2 Dangerous Substances	0	0	0	0	-	
34 >	4.18 >	<u>Pollution Incidents (EA/NRW)</u> >	0	0	3	0	-	
35	4.19	Pollution inventory substances	0	0	0	0	-	
35	4.20	Pollution inventory waste transfers	0	0	0	0	-	
35	4.21	Pollution inventory radioactive waste	0	0	0	0	-	
Page	Section	<u>Hydrogeology</u> >	On site	0-50m	50-250m	250-500m	500-2000m	
36 >	5.1 >	<u>Superficial aquifer</u> >	Identified (within 500m)					
38 >	5.2 >	<u>Bedrock aquifer</u> >	Identified (within 500m)					
40 >	5.3 >	<u>Groundwater vulnerability</u> >	Identified (within 50m)					
41 >	5.4 >	<u>Groundwater vulnerability- soluble rock risk</u> >	Identified (within 0m)					
41	5.5	Groundwater vulnerability- local information	None (within 0m)					
42 >	5.6 >	<u>Groundwater abstractions</u> >	0	0	0	0	37	
50	5.7	Surface water abstractions	0	0	0	0	0	
51	5.8	Potable abstractions	0	0	0	0	0	
51 >	5.9 >	<u>Source Protection Zones</u> >	1	1	0	0	-	
51	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-	
Page	Section	<u>Hydrology</u> >	On site	0-50m	50-250m	250-500m	500-2000m	
52 >	6.1 >	<u>Water Network (OS MasterMap)</u> >	0	0	1	-	-	



53	6.2	Surface water features	0	0	0	-	-
53 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
53 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
54 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
55	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
55	7.2	Historical Flood Events	0	0	0	-	-
55	7.3	Flood Defences	0	0	0	-	-
56	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
56	7.5	Flood Storage Areas	0	0	0	-	-
57	7.6	Flood Zone 2	None (within 50m)				
57	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
58 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
60 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
61	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
62	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
62	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
62	10.4	Special Protection Areas (SPA)	0	0	0	0	0
62	10.5	National Nature Reserves (NNR)	0	0	0	0	0
63 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	8
63 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	3
64	10.8	Biosphere Reserves	0	0	0	0	0
64	10.9	Forest Parks	0	0	0	0	0
64	10.10	Marine Conservation Zones	0	0	0	0	0
64	10.11	Green Belt	0	0	0	0	0
64	10.12	Proposed Ramsar sites	0	0	0	0	0



65	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
65	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
65	10.15	Nitrate Sensitive Areas	0	0	0	0	0
65 >	10.16 >	Nitrate Vulnerable Zones >	2	0	0	0	2
67 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
68	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
69	11.1	World Heritage Sites	0	0	0	-	-
70	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
70	11.3	National Parks	0	0	0	-	-
70 >	11.4 >	Listed Buildings >	0	0	1	-	-
71	11.5	Conservation Areas	0	0	0	-	-
71	11.6	Scheduled Ancient Monuments	0	0	0	-	-
71	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
72 >	12.1 >	Agricultural Land Classification >	Grade 2 (within 250m)				
73	12.2	Open Access Land	0	0	0	-	-
73	12.3	Tree Felling Licences	0	0	0	-	-
73	12.4	Environmental Stewardship Schemes	0	0	0	-	-
74	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
75	13.1	Priority Habitat Inventory	0	0	0	-	-
75	13.2	Habitat Networks	0	0	0	-	-
75	13.3	Open Mosaic Habitat	0	0	0	-	-
75	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
76 >	14.1 >	10k Availability >	Identified (within 500m)				
77 >	14.2 >	Artificial and made ground (10k) >	0	0	0	2	-
78 >	14.3 >	Superficial geology (10k) >	1	0	0	2	-



79	14.4	Landslip (10k)	0	0	0	0	-
80 >	14.5 >	Bedrock geology (10k) >	1	0	0	1	-
81	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
82 >	15.1 >	50k Availability >	Identified (within 500m)				
83	15.2	Artificial and made ground (50k)	0	0	0	0	-
83	15.3	Artificial ground permeability (50k)	0	0	-	-	-
84 >	15.4 >	Superficial geology (50k) >	1	0	0	1	-
85 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
85	15.6	Landslip (50k)	0	0	0	0	-
85	15.7	Landslip permeability (50k)	None (within 50m)				
86 >	15.8 >	Bedrock geology (50k) >	1	0	0	0	-
87 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
87	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
88 >	16.1 >	BGS Boreholes >	0	0	1	-	-
Page	Section	Natural ground subsidence >					
89 >	17.1 >	Shrink swell clays >	Low (within 50m)				
90 >	17.2 >	Running sands >	Very low (within 50m)				
91 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
92 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
93 >	17.5 >	Landslides >	Very low (within 50m)				
94 >	17.6 >	Ground dissolution of soluble rocks >	Low (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
96 >	18.1 >	BritPits >	0	0	0	1	-
97	18.2	Surface ground workings	0	0	0	-	-
97	18.3	Underground workings	0	0	0	0	0
97	18.4	Underground mining extents	0	0	0	0	-
97	18.5	Historical Mineral Planning Areas	0	0	0	0	-



98 >	18.6 >	Non-coal mining >	1	0	0	1	0
98	18.7	JPB mining areas	None (within 0m)				
98	18.8	The Coal Authority non-coal mining	0	0	0	0	-
99	18.9	Researched mining	0	0	0	0	-
99	18.10	Mining record office plans	0	0	0	0	-
99	18.11	BGS mine plans	0	0	0	0	-
99	18.12	Coal mining	None (within 0m)				
99	18.13	Brine areas	None (within 0m)				
100	18.14	Gypsum areas	None (within 0m)				
100	18.15	Tin mining	None (within 0m)				
100	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
101	19.1	Natural cavities	0	0	0	0	-
101	19.2	Mining cavities	0	0	0	0	0
101	19.3	Reported recent incidents	0	0	0	0	-
101	19.4	Historical incidents	0	0	0	0	-
102	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
103 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
105 >	21.1 >	BGS Estimated Background Soil Chemistry >	1	0	-	-	-
105	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
105	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
106	22.1	Underground railways (London)	0	0	0	-	-
106	22.2	Underground railways (Non-London)	0	0	0	-	-
106	22.3	Railway tunnels	0	0	0	-	-
106	22.4	Historical railway and tunnel features	0	0	0	-	-
106	22.5	Royal Mail tunnels	0	0	0	-	-



107	22.6	Historical railways	0	0	0	-	-
107	22.7	Railways	0	0	0	-	-
107	22.8	Crossrail 1	0	0	0	0	-
107	22.9	Crossrail 2	0	0	0	0	-
107	22.10	HS2	0	0	0	0	-



Recent aerial photograph



Capture Date: 05/04/2020

Site Area: 0.14ha



Recent site history - 2017 aerial photograph



Capture Date: 09/04/2017

Site Area: 0.14ha



Recent site history - 2013 aerial photograph



Capture Date: 02/05/2013

Site Area: 0.14ha



Recent site history - 2007 aerial photograph



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Capture Date: 25/08/2007

Site Area: 0.14ha



Recent site history - 1999 aerial photograph



Capture Date: 05/05/1999

Site Area: 0.14ha



OS MasterMap site plan

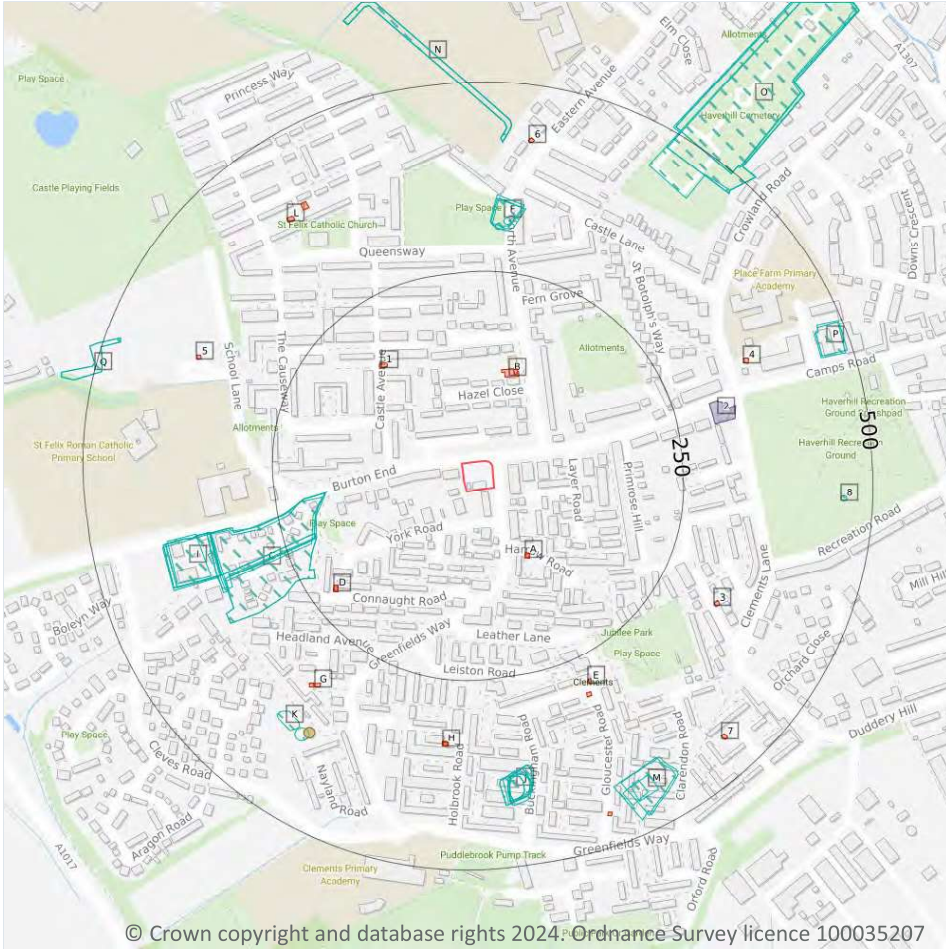


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Site Area: 0.14ha



1 Past land use



Site Outline

Search buffers in metres (m)

- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

1.1 Historical industrial land uses

Records within 500m **44**

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
C	183m W	Unspecified Works	1979	2083377

