



Ground Condition Consultants

**BELMONT CASTLE CARE/REST HOME, PORTSDOWN HILL ROAD, HAVANT,
PO9 3JY**

GROUND CONDITION DESK TOP STUDY

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Prepared for
Aria Care
Central Support office
The Boynes
Upper Hook Road
Upton upon Severn
Worcestershire
WR8 0SB

Prepared by
Ground Condition Consultants Ltd
10 Waldegrave Close
Southampton
Hampshire
SO19 9RY

ask@groundcc.com
www.groundcc.com

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Prepared by: Antony Platt - Director	Reviewed by: Rasmus Palmgren - Director

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0. EXECUTIVE SUMMARY

Brief	The brief was to use the information provided in an Environmental Database Search relating to the site to assess and report on the findings with respect to potential ground contamination and potential associated future liabilities in accordance with the Preliminary Risk Assessment procedure outlined in Land Contamination Risk Management (LCRM), published by the Environment Agency.
Current Site Status	The site is located at Belmont Castle Care/Rest Home off Portsdown Hill Road, Havant, PO9 3JY. The site/area proposed for the development is located to the rear (north) of the existing care/rest home building on-site and is currently undeveloped and forms part of the extended garden area of the existing care/rest home. The area is sloping down towards the north and there are numerous semi-mature/mature trees and shrubs present.
Site History	Historical map extracts reviewed (1866-2025) indicate that the existing property, Belmont Castle, associated ancillary buildings and potential orchard/plantation have been present on site since at least 1866. A wooded depression is also noted in the centre west of the site. A possible chalk pit depression is shown within the western site boundary on the 1960 and 1969 extracts, which is not evident on the 1973 or later extracts and was shown as a wooded area on earlier maps. The original building on the site was extended to the north during the 1990s, to form the current building layout.
Geology	Reference to the British Geological Survey (BGS) Map indicates the southern part (majority) of the site to directly overlie the bedrock geology of the Portsdown Chalk Formation. Superficial Head Deposits (clay, silt, sand and gravel) are shown to be present in the northern part of site, overlying the bedrock geology of the Portsdown Chalk Formation. Previous archaeology works were undertaken in the area of the proposed new building in 2015 and recorded c. 2.20m of variable made ground in the west of the study area. The Made Ground appears to broadly correlate with the possible former chalk pit depression features shown on the map extracts from the 1960s.
Hydrogeology	The Environment Agency Groundwater Vulnerability Map extracts indicate the northern part of the site to be underlain by a superficial Undifferentiated Secondary Aquifer, interpreted as the Head Deposits over a bedrock Principal Aquifer, interpreted as the Portsdown Chalk Formation. The southern part of the site is shown to be directly underlain by a bedrock Principal Aquifer, interpreted as the Portsdown Chalk Formation. The site is located within Groundwater Source Protection Zone – Inner Zone.
Hydrology	The nearest identified surface water feature is an unnamed inland river, located approximately 100m to the north.
Conclusions and Recommendations	The following potential sources of contamination were identified: • Potential for generation and migration of ground gas from the on-site infilled possible former chalk pit in the west of the site. • Potential for reduced quality fill material within the possible former chalk pit in the west of the site. It should be noted that additional sources of contamination may become apparent during any future investigation and development of the site. The risks to the health of future site users from contamination, in the context of the proposed care home end use of the site, have been assessed to be low/moderate, primarily driven by the potential for asbestos to be present in the fill material within the possible infilled former depression/chalk pit.

Further investigation of the fill material in the possible infilled former depression/chalk pit is therefore recommended to confirm its composition and potential contaminant content.

Due to the site being located in an area with a moderate risk of unexploded ordnance (UXO), a preliminary UXO risk assessment and potentially a detailed desk based UXO risk assessment are recommended ahead of any intrusive investigation.

The site is situated close to an area with a moderate risk of dissolution features and solution pipes have been identified to the east of the site. While the depression shown on site on the historical maps is shown with the same character as the off-site chalk pits, the feature itself is not labelled and could potentially be a dissolution feature. Investigation of the feature is recommended to understand its character, depth and potentially its origins.

This sheet is intended to provide a summary only of the initial indicative assessment study of the site in relation to ground contamination. It does not provide a definitive engineering analysis for the purposes of costing or construction, and is subject to the limitation of the agreed brief.

1. INTRODUCTION

1.1 INSTRUCTION

Ground Condition Consultants Ltd. (GCC) was commissioned by Aria Care in April 2025 to undertake a Ground Condition Desk Top Study of a site located at Belmont Castle Care/Rest Home, Portsdown Hill Road, Havant, PO9 3JY.

The brief was to use the information provided in an Environmental Database Search relating to the site to assess and report on the findings with respect to potential ground contamination and potential associated future liabilities in accordance with the Preliminary Risk Assessment procedure outlined in Land Contamination Risk Management (LCRM), published by the Environment Agency.

This report is prepared in line with the agreed brief and is subject to the report conditions shown in Appendix 1.

1.2 LEGAL CONTEXT

Part IIA of the Environmental Protection Act 1990 (inserted by Section 57 of the Environment Act 1995) provides a regime for the control of specific threats to health or the environment from land contamination. In accordance with the Act and the statutory guidance document 'The Contaminated Land (England) Regulations 2000', the definition of contaminated land is intended to embody the concept of risk assessment. Within the meaning of the Act, land is only "contaminated land" where it appears to the Regulatory Authority, by reason of substances within or under the land, that:

- Significant harm is being caused, or there is a significant possibility of such harm being caused; or
- Pollution of controlled waters is being, or is likely to be, caused."

Inherent in this definition is the requirement for contamination risk assessment to be undertaken on a site specific basis, as the potential for harm is determined by the site's end use and its specific environmental setting.

The guidance defines "risk" as the combination of:

- The probability, or frequency, of occurrence of a defined hazard (for example, exposure of a property to a substance with the potential to cause harm); and
- The magnitude (including the seriousness) of the consequences.

While Part IIA of the Environmental Protection Act provides a risk based approach to the identification and remediation of land where contamination poses an unacceptable risk to human health or the environment, the regime does not take into account future uses. New developments are therefore controlled by the planning regime, with reference to the National Planning Policy Framework (NPPF), rather than directly by Part IIA of the Environmental Protection Act.

The NPPF is based on the principal that the site should be suitable for its new use, taking account of ground conditions, including from natural hazards or former activities and states that “Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner”. The NPPF also links the planning and Part IIA regimes by stating that “after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990”. Key components of the Part IIA regime, such as the definition of Contaminated Land and the associated risk based assessment approach, are therefore considered to also be applicable to the planning regime.

1.3 METHODOLOGY

This report has been prepared in accordance with published Environment Agency guidance (‘Land Contamination Risk Management (LCRM)’). LCRM provides the technical framework for structured decision making about land contamination and builds on previous work carried out under the Contaminated Land Research Programme (of the former Department of the Environment) and the Model Procedures for the Management of Land Contamination – Contaminated Land Report (CLR) 11. LCRM has adopted and refined the well recognised methodology and terminology that has been used in contaminated land risk assessment for a number of years.

1.3.1. Pollutant linkage concept

In the context of land contamination, there are three essential elements to any risk:

- A **contaminant source** – a substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters.
- A **receptor** – in general terms, something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body.
- A **pathway** – a route or means by which a receptor can be exposed to, or affected by, a contaminant.

Each of these elements can exist independently, but they create a risk only where they are linked together, so that a particular contaminant affects a particular receptor through a particular pathway. This kind of linked combination of contaminant–pathway–receptor is described as a pollutant linkage.

1.3.2. Conceptual model

An important thread throughout the overall process of risk assessment is the need to formulate and develop a **conceptual model** for the site, which supports the identification and assessment of pollutant linkages. A conceptual model represents the characteristics of the site in diagrammatic or written form that shows the possible relationships between contaminants, pathways and receptors (pollutant linkages).

1.3.3. Risk assessment

LCRM advocates a phased approach to risk assessment comprising the following in order, as necessary:

Preliminary Risk Assessment – a desk study consisting of a review of documentary, anecdotal and site walk over evidence.

Generic Quantitative Risk Assessment (GQRA) - comparison of contaminant concentrations obtained from site investigation with generic assessment criteria.

Detailed Quantitative Risk Assessment (DQRA) - comparison of contaminant concentrations obtained from site investigation with site-specific assessment criteria.

This document constitutes a Preliminary Risk Assessment.

1.4 PROPOSED USE

It is currently understood that a new/separate building comprising a care/rest home and associated landscaped areas, is proposed for the site. It is further understood that the new building would be partially cut into the existing slope.

A change in the site use from that currently proposed may result in the need for re-assessment of risk criteria and the conclusions and recommendations resulting from the risk assessment could therefore significantly change.

1.5 REPORT SCOPE AND LIMITATIONS

This report is based upon a site visit, review of readily available historical and current information, geological and hydrogeological maps and information from an environmental database search. The assessment is based on the proposed use stated in Section 1.4 and the outcomes of this assessment could change if the end uses change.

The information contained in this report is intended for the use of Aria Care. GCC can take no responsibility for the use of this information by any other party or for uses other than that described in this report.

2. PRELIMINARY RISK ASSESSMENT

2.1 SITE LOCATION AND DESCRIPTION

The site is located at Belmont Castle Care/Rest Home off Portsdown Hill Road, Havant, PO9 3JY. The site/area proposed for the development is located to the rear (north) of the existing care/rest home building on-site and is currently undeveloped and forms part of the extended garden area of the existing care/rest home. The area is sloping down towards the north and there are numerous semi-mature/mature trees and shrubs present.

Access into the site is from Portsdown Road, which forms the southern site boundary. An electric sub-station is located along Portsdown Road, close to the entrance to the site. Residential dwellings are located across Portsdown Road. A residential dwelling is located to the immediate west of the site. A combined swim school (Tiny Tots) and residential dwelling is located to the immediate east of the site. An area of woodland is located to the north of the site.

2.2 SITE HISTORY

Historical map extracts reviewed (1866-2025) indicate that the existing property, Belmont Castle, associated ancillary buildings and potential orchard/plantation have been present on site since at least 1866. A wooded depression is also noted in the centre west of the site. The 1868 map shows a road defining the southern boundary of the site and two structures just outside of the southwest boundary of the site. The remainder of the site is bound by fields. Several chalk pits are recorded within 100m metres of the site and Belmont Coppice is shown 100m to the north.

The site and surrounding area remain predominantly the same until the 1907 extracts show new residential dwellings to the east of the site, with associated roads, and a school. From 1930 to 1975 the extracts show a steady increase in the urbanisation and infrastructure of the surrounding area. A possible chalk pit depression is shown within the western site boundary on the 1960 and 1969 extracts, which is not evident on the 1973 or later extracts and was shown as a wooded area on earlier maps. Later maps show little change to the site and the immediate surroundings until the 1975 extract, which shows the A3 road running close to the east boundary running in a north south direction. The original building on the site was extended to the north during the 1990s, to form the current building layout. No significant changes are shown on later map extracts.

The Groundsure report makes reference to historical tanks on the site, although these are not apparent from a review of the available historical maps.

2.3 DOCUMENTATED GROUND CONDITIONS

Ground conditions recorded in readily available sources are summarised below.

2.3.1. Geology

Reference to the British Geological Survey (BGS) Map extracts (see Appendix 2) indicates the southern part (majority) of the site to directly overlie the bedrock geology of the Portsdown Chalk Formation. Superficial Head Deposits (clay, silt, sand and gravel) are shown to be present in the northern part of site, overlying the bedrock geology of the Portsdown Chalk Formation.

Previous archaeology works were undertaken in the area of the proposed new building in 2015 and recorded a simple deposit sequence of a thin topsoil overlying subsoil contacting directly to upper bedrock chalk in the east of the study area and c. 2.20m deep sequence consisting of variable made ground in the west of the study area. The Made Ground appears to broadly correlate with the possible former chalk pit depression features shown on the map extracts from the 1960s.

2.3.2. Hydrogeology

The Environment Agency Groundwater Vulnerability Map extracts (see Appendix 2) indicate the northern part of the site to be underlain by a superficial Undifferentiated Secondary Aquifer, interpreted as the Head Deposits over a bedrock Principal Aquifer, interpreted as the Portsdown Chalk Formation.

The southern part of the site is shown to be directly underlain by a bedrock Principal Aquifer, interpreted as the Portsdown Chalk Formation.

Secondary Undifferentiated Aquifers are assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non aquifer in different locations due to the variable characteristics of the rock type.

Principal Aquifers are geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers.

The site is located within Groundwater Source Protection Zone – Inner Zone.

2.3.3. Hydrology

The nearest identified surface water feature is an unnamed inland river, located approximately 100m to the north.

2.3.4. Radon

Radon is a naturally occurring radioactive gas which may be harmful to human health. Radon is generally released into the atmosphere in areas underlain by granite and limestone. Harmful concentrations of radon may build up if it becomes trapped in an enclosed space such as a building.

BGS/Public Health England data presented within the Groundsure Report indicates that the percentage of houses exceeding the Action Levels for Radon is less between 1% and 3%. Therefore, the property is in a Radon Affected Area, as defined by the Health Protection Agency (HPA), but radon protection measures are not necessary in new buildings.

2.4 ENVIRONMENTAL DATA SEARCH

A search of an environmental database was undertaken together with information from various other organisations as part of the desk study and is summarised in the following sections. The following summary is generally limited to locations within 250m of the site boundaries unless it is considered that installations or activities beyond that range could potentially have an impact on the site or be affected by the redevelopment of the site.

Table 2.1. Data search results

Discharge consents	There are no recorded discharge consents within 250m of the site.
Pollution incidents	There are no recorded pollution incidents within 250m of the site.
Water abstractions	There are no recorded water abstractions within 500m of the site.
Fuel Stations	There are no recorded fuel stations within 250m of the site.
Landfill Sites	There are no current or historical landfills within 250m of the site.
Environmental Designations	The site has been designated a Nitrate Vulnerable Zone.

2.5 MINING AND NATURAL GROUND HAZARDS

2.5.1. Mining

The site is located in an area where underground chalk mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

However, surface chalk mining is noted to have taken place in the vicinity of the site with a possible chalk pit identified on site on the map extracts from the 1960s. The archaeological investigation from 2015 indicates that this feature may have been infilled with Made Ground.

2.5.2. Natural Ground Hazards

The following ground hazards were identified:

Compressible ground stability hazards – Negligible hazard

BGS Notes: Compressible strata are not thought to occur.

Collapsible ground stability hazards – Very Low hazard

BGS Notes: Deposits with potential to collapse when loaded and saturated are unlikely to be present.

Ground dissolution stability hazards – Negligible to Moderate hazard

BGS Notes: Negligible - Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present. (central part of the site)

BGS Notes: Very Low - Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered. (southern part of the site)

BGS Notes: Moderate - Soluble rocks are present within the ground. Many dissolution features may be present. Potential for difficult ground conditions are at a level where they should be considered. Potential for subsidence is at a level where it may need to be considered. (northern part of the site)

Natural cavities (solution pipes) have been identified some 293m to the east of the site and correspond to an area near the outcrop boundary between the Lambeth Group and Portsdown Chalk Formation. Similar geology is present in the northern part of the study site.

While the depression shown on site on the historical maps from the 1960s has a similar appearance to the chalk pits shown nearby to the west of the site, the feature is not specifically referenced as such. It is possible that the feature could be the result of dissolution.

Landslide ground stability hazard – Negligible to Low hazard

BGS Notes: Negligible - Slope instability problems are not thought to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered. (associated with the southern majority of the site, directly overlying Chalk)

BGS Notes: Low - Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site. (associated with the northern part of the site, overlying Head Deposits)

Shrinking or swelling clay ground stability hazard – Negligible to Very Low hazard

BGS Notes: Negligible - Ground conditions predominantly non-plastic (associated with the southern majority of the site, directly overlying Chalk).

BGS Notes: Very Low - Ground conditions predominantly low plasticity. (associated with the northern part of the site, overlying Head Deposits).

Running sand ground stability hazards – Negligible to Very Low hazard

BGS Notes: Very Low - Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly (associated with the northern part of the site, overlying Head Deposits)

BGS Notes: Negligible - Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions. (associated with the southern majority of the site, directly overlying Chalk)

2.6 DEPARTMENT OF ENVIRONMENT – INDUSTRY PROFILES

The Department of the Environment Industry Profiles do not cover the previous or existing site uses of the site.

2.7 UNEXPLODED ORDNANCE

A Zetica UXO Unexploded Bomb (UXB) Risk Map was obtained for the site and is presented in Appendix 2. This map indicates the site to be of Moderate risk of potential UXBs to be present following World War Two (WWII) bombing, due to the sites location within an area of moderate density bombing. Zetica UXO typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density..

2.8 REGULATOR CONSULTATION

A request for information has been submitted to Havant Borough Council for any records they hold that may be relevant to the assessment of contamination on the site. A response had not been received at the time of issue of this report.

3. CONCEPTUAL SITE MODEL

3.1 SOURCES

The conceptual model, based on information obtained as part of the preliminary risk assessment, identified the following potential contaminant sources:

- Potential for generation and migration of ground gas from the on-site infilled possible former chalk pit in the west of the site.
- Potential for reduced quality fill material within the possible former chalk pit in the west of the site.

An electrical substation is noted to be present in the southeast corner of the site. However, it is not proposed to relocate the substation and the substation is located approximately 60m from the proposed development area and is therefore not considered to represent a significant source of contamination with regard to the proposed development.

It should be noted that additional sources of contamination may become apparent during any future investigation and development of the site.

3.2 PATHWAYS

The key environmental pathways and exposure routes by which potentially toxic substances can reach the identified potential receptors are considered to be:

- Vertical migration
- Inhalation of gas and dust,
- Accumulation of gas in enclosed spaces leading to explosion,
- Direct contact
- Ingestion

3.3 RECEPTORS

Receptors that may be affected by the potential contamination are:

- Future site users
- Secondary undifferentiated aquifer
- Principal Aquifer

Construction workers have been excluded from this assessment on the basis that they are subject to health and safety at work regulations and are expected to use appropriate personal protective equipment (PPE).

4. RISK ASSESSMENT

4.1 RISK ASSESSMENT PROCEDURE

By considering the sources, pathways and receptors (pollutant linkages), an assessment of the human health/ environmental risks is made with reference to the significance and degree of the risk. This assessment is based on consideration of whether the source contamination can reach a receptor and hence whether it is of major or minor significance.

The risk assessment has been undertaken with reference to BS10175 and CIRIA Document C552: Contaminated Land Risk assessment 'A Guide to Good Practice'. The risk assessment has been carried out by assessing the severity of the potential consequence, taking into account both the potential magnitude of the hazard and the sensitivity of the target, based on the categories given overleaf.

Table 4.1. Sensitivity of receptor

Category	Examples
High	Residential with gardens/Groundwater Source Protection Zone
Medium	Residential without gardens/Principal (Major) Aquifer/sensitive watercourse
Low	Commercial and industrial use/Secondary (Minor) Aquifer
Very Low	Construction and maintenance workers/non-sensitive watercourse

Table 4.2. Magnitude of impact

Category	Examples
Gross Impact	Heavily contaminated gasworks or industrial site, hazardous waste landfill
Moderate Impact	Major leaks and spills from fuel infrastructure (e.g. petrol stations), domestic waste landfill
Slight Impact	Minor leaks and spills from fuel infrastructure, 'inert' waste landfills
No Impact	No identified or suspected contamination

Table 4.3. Level of severity for potential hazard

Magnitude of Impact	Sensitivity of receptor			
	High	Medium	Low	Very Low
Gross Impact	Severe	Medium	Mild	Minor
Moderate Impact	Medium	Mild	Minor	Minor
Slight Impact	Mild	Minor	Minor	Minor
No Impact	Minor	Minor	Minor	Minor

The likelihood of an event (probability) takes into account both the presence of the hazard and target and the integrity of the pathway and has been assessed based on the categories given below.

Table 4.4. Probability of risk definition

Category	Definition
High likelihood	Pollutant linkage may be present, and risk is almost certain to occur in long term, or there is evidence of harm to the receptor
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term
Low likelihood	Pollutant linkage may be present, and there is a possibility of the risk occurring, although there is no certainty that it will do so
Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are improbable

The potential severity of the risk and the probability of the risk occurring have been combined in accordance with the following matrix in order to give a level of risk for each potential hazard.

Table 4.5. Level of risk for potential hazard definition

Probability of risk	Potential severity			
	Severe	Medium	Mild	Minor
High Likelihood	Very high	High	Moderate	Low/ Moderate
Likely	High	Moderate	Low/ Moderate	Low
Low likelihood	Moderate	Low/ Moderate	Low	Very low
Unlikely	Low/ Moderate	Low	Very low	Very low

The assessment is discussed below in terms of plausible pollutant linkages. A complete assessment of the pollutant linkages is presented in Table 4.6 overleaf.

A description of these risk classifications and likely action required are given in CIRIA 552 as:

Very high risk – High probability that severe harm could arise to a designated receptor from an identified hazard OR there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in substantial liability. Urgent investigation and remediation are likely to be required.

High risk – Harm is likely to arise to a designated receptor from an identified hazard. This risk, if realised, is likely to result in substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the long term.

Moderate risk – It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation is normally required to clarify risks and to determine potential liability. Some remedial works may be required in the long term.

Low risk – It is possible that harm could arise to a designated receptor from an identified hazard but it is likely that this harm, if realised, would at worst normally be mild.

Very low risk – It is a low possibility that harm could arise to a designated receptor. In the event of such harm being realised it is not likely to be severe.

4.2 POLLUTANT LINKAGE ASSESSMENT

The following assessment is based on the proposed redevelopment scenario of the site for care home end use.

Table 4.6. Pollutant Linkage Assessment

Source	Pathway	Receptor	Severity	Likelihood	Risk Level
Potential for ground gas migration from on-site possible infilled former depression/chalk pit	Vertical migration leading to accumulation of confined spaces and inhalation	Future Users	Mild	Low likelihood	Low
	Vertical migration leading to accumulation of confined spaces and explosion	Future Users	Mild	Low Likelihood	Low

Source	Pathway	Receptor	Severity	Likelihood	Risk Level
Asbestos containing materials and fibres in on-site Made Ground	Inhalation	Future Users	Medium	Low Likelihood	Low/ Moderate
Potential reduced quality fill material in possible infilled former depression/chalk pit	Direct Contact Ingestion Inhalation	Future Users	Mild	Low Likelihood	Low
	Vertical migration leading to direct contact	Principal Aquifer	Mild	Unlikely	Very Low

4.2.1. Potential for generation and migration of ground gas from on-site possible infilled former depression/chalk pit

Historical maps indicated that a depression was formerly present in the west of the site and appears to have been at least partially infilled, although the existing vegetation obscured the area during the walkover survey. An archaeological survey identified the presence of at least 2.2m of Made Ground in this area. The composition of the fill material is not known but may contain organic remnants, giving rise to a potential source of ground gas generation.

Given the elapsed time since the feature appears to have been infilled, it is anticipated that the majority of any ground gas generation from putrescible material within the fill will have taken place, significantly reducing the driver mechanism for ground gas migration from the former pond towards the proposed buildings.

It is anticipated that some, if not all of the fill material will be removed as part of the groundworks for the proposed development, which is understood will cut into the existing slope.

The risks to the future site users have therefore been assessed to be low.

Further investigation of this potential pollutant linkage is considered to be required to confirm the conceptual model and characterise the composition of the fill material.

4.2.2. Potential for reduced quality fill material in the possible infilled former depression/chalk pit

As the possible infilled former depression/chalk pit appears to have been at least partially infilled after the 1960s with unknown material, there is a potential that the fill material was imported from an off-site source and contains contaminants, such as asbestos containing materials.

Any mobile or volatile contaminants, such as short chain hydrocarbon fractions, are likely to have degraded in the time since the feature was infilled, leaving low mobility and lower toxicity fractions. There is also a potential for concentrations of more persistent contaminants, such as heavy metals, to remain in the fill material.

Due to the period during which the feature was infilled, there is also a significant potential for asbestos containing material to be present in the fill material.

It is noted that the proposed building is located such that it partially spans the feature and it is understood that the new building will be partially cut into the existing slope, potentially removing some or all of the fill material.

The risks from asbestos containing materials in the fill material have therefore been assessed to be low/moderate, while the risks from other forms of contamination with regard to human health and controlled waters receptors have been assessed to be very low to low.

Further investigation of the fill material in the possible infilled former depression/chalk pit is therefore recommended.

5. CONCLUSIONS AND RECOMMENDATIONS

The following potential sources of contamination were identified:

- Potential for generation and migration of ground gas from the on-site infilled possible former chalk pit in the west of the site.
- Potential for reduced quality fill material within the possible former chalk pit in the west of the site.

It should be noted that additional sources of contamination may become apparent during any future investigation and development of the site.

The risks to the health of future site users from contamination, in the context of the proposed care home end use of the site, have been assessed to be low/moderate, primarily driven by the potential for asbestos to be present in the fill material within the possible infilled former depression/chalk pit.

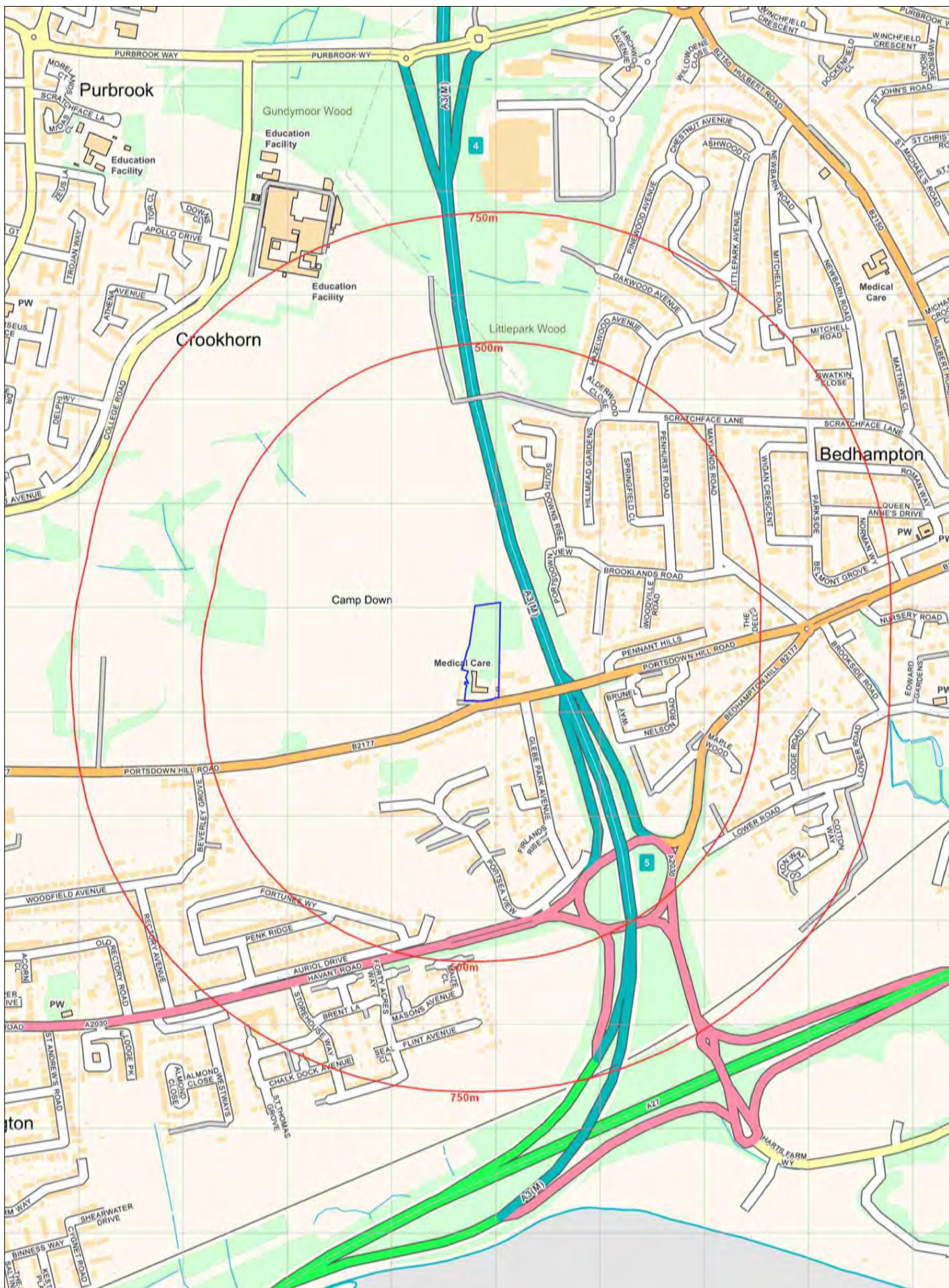
Further investigation of the fill material in the possible infilled former depression/chalk pit is therefore recommended to confirm its composition and potential contaminant content.

While construction workers have been excluded from this assessment on the basis that they are subject to health and safety at work regulations and are expected to use appropriate personal protective equipment (PPE), any ground works contractors working on the site, including installing new underground services, should be made aware of the potential for contamination to be present within the ground underlying the site surfacing.

Due to the site being located in an area with a moderate risk of unexploded ordnance (UXO), a preliminary UXO risk assessment and potentially a detailed desk based UXO risk assessment are recommended ahead of any intrusive investigation.

The site is situated close to an area with a moderate risk of dissolution features and solution pipes have been identified to the east of the site. While the depression shown on site on the historical maps is shown with the same character as the off-site chalk pits, the feature itself is not labelled and could potentially be a dissolution feature. Investigation of the feature is recommended to understand its character, depth and potentially its origins for foundation design as well as contamination assessment purposes.

FIGURE 1: LOCATION PLAN



Ground Condition Consultants Ltd
10 Waldegrave Close Southampton SO19 9RY
Telephone 07971 450113
ask@groundcc.co.uk www.groundcc.co.uk

client
ARIA CARE

site
BELMONT CASTLE, HAVANT

title
SITE LOCATION PLAN

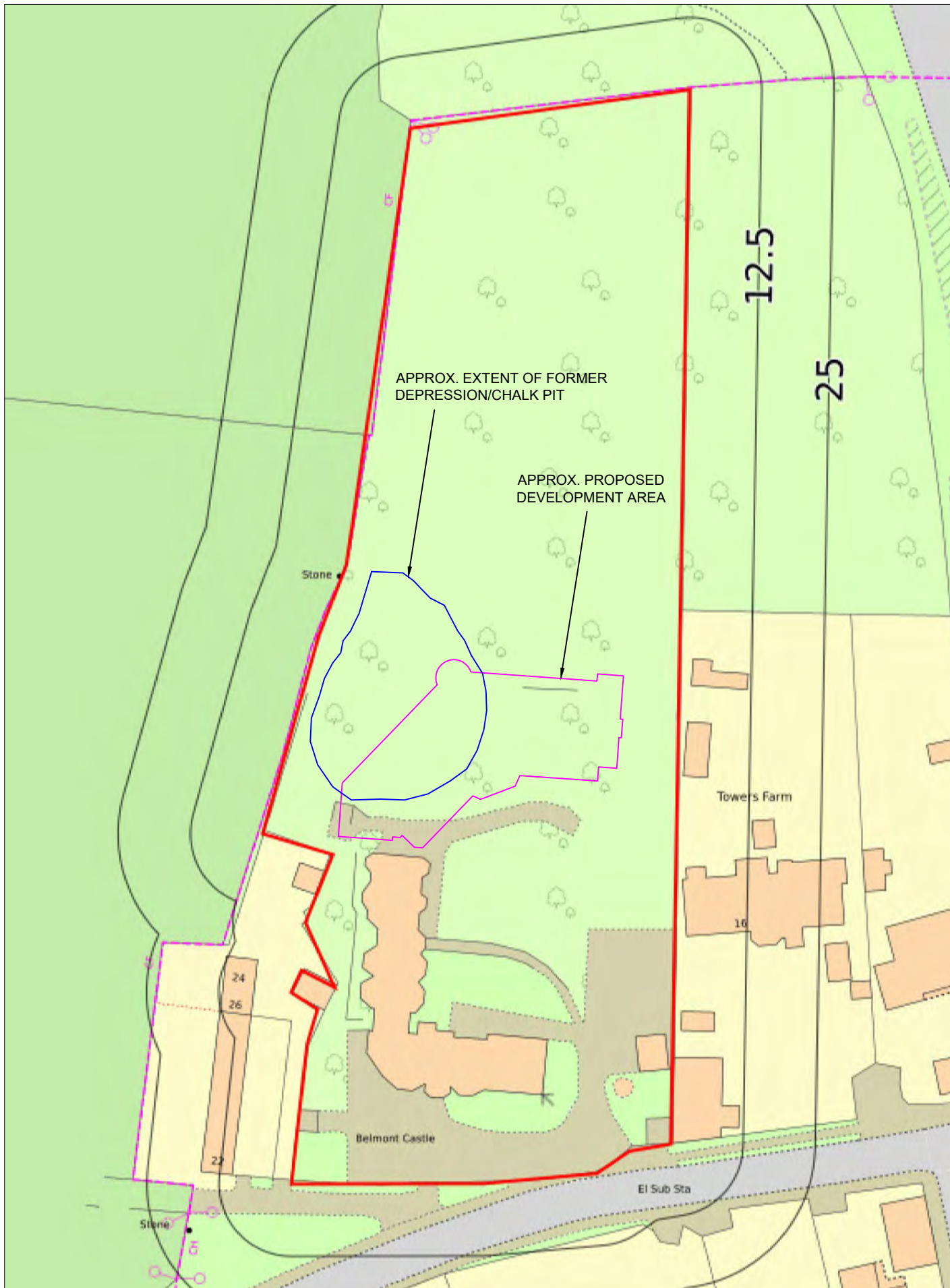
scale **NTS** | drawn by **AP** | checked by **RP**

date **29 APR 2025** | job no **J25-038**

drawing number
FIGURE 1

rev. **-**

FIGURE 2: LAYOUT PLAN



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10 Waldegrave Close Southampton SO19 9RY
Telephone 07971 450113
ask@groundcc.co.uk www.groundcc.co.uk

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FIGURE 1