

PHASE 1 DESK STUDY

Site

**LAND AT BOORLEY GARDENS,
FIELDFARE ROAD, BOORLEY GREEN,
HEDGE END, HAMPSHIRE SO32 2BX**

Client

HEDGE END CARE HOME LTD

Consulting Engineer

ADG ARCHITECTS

Report Ref

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The recommendations made and opinions expressed in this Report are based on the strata conditions revealed by the fieldworks as indicated on the exploratory records, together with an assessment of the data from in situ and laboratory tests. No liability can be accepted for conditions which have not been revealed by the fieldworks, for example, between exploratory positions. While this Report may offer opinions on the possible configuration of strata, both between the excavations and below the maximum depth achieved by the investigation, these comments are for guidance only and no liability can be accepted for their accuracy. The data obtained relate to the conditions which are relevant at the time of the investigation.

The groundwater observations entered on exploratory records are those noted at the time of the investigation. The normal rate of progress does not usually permit the recording of any equilibrium water level for any one water strike. It should be noted that groundwater levels are prone to seasonal variation and to changes in local drainage conditions. The word 'none' indicates that groundwater was sealed off by the borehole casing or that no water was observed in the exploratory hole upon completion.

REPORT REF: 23/12718/GO

CONTRACT: FIELDFARE ROAD, BOORLEY GREEN

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1 INTRODUCTION

Albury S.I. were approached by ADG Architects on behalf of the Client, to provide a Phase 1 Desk Study and preliminary land contamination risk assessment for the site.

1.1 Objectives

The Desk Study comprises a review of the readily available geological, historical and environmental sources for information about the site, together with a walkover survey of the area. This includes the commissioning of an Envirocheck report supplied by Landmark Information Group. This report presents the findings of the Desk Study together with an outline Conceptual Site Model and preliminary risk assessment, based upon identified potential sources of contamination which may pose a significant risk to receptors or end-users of the site.

In preparing this report reference has been made to relevant guidance, which includes the 'Investigation of potentially contaminated sites. Code of Practice.' (BSI, 2011) and the Land Contamination: risk management (LCRM) guidance (2020).

1.2 Proposed Development

The Client proposes to construct a care home at Boorley Gardens, Fieldfare Road, Boorley Green ("the site"). The Proposed Layout is included as Figure 1.

2 THE SITE

2.1 Site Location

The site covers an area of 5700m², is roughly rectangular in shape and is located to the north west of the village of Boorley Green and to the north east of the town of Hedge End at Ordnance Survey National grid reference 450370, 115000. An extract of the current OS mapping is presented below.

Fieldfare Road forms the southern boundary with a roundabout to the south east and the B3354 Winchester Road forms the eastern boundary, with a public footpath running parallel to the northern boundary. The areas to the north and west are currently being constructed as part of the wider Boorley Gardens residential development.



2.2 Site Topography

The recent OS mapping indicates a spot height of 29.0m immediately to the east of the site. The site OS mapping contours indicate that the site falls from east to west, with the 25m contour parallel with the western boundary.

3 SITE HISTORY

3.1 Historical Mapping

The historical Ordnance Survey mapping contained within the Envirocheck report included in Appendix 1 has been reviewed. An examination has also been made of the earlier tithe map dated 1844, which confirms the presence of the structure shown on the 1868 OS map as being a Cottage Garden and Shed within plot 31. The remainder of the site comprises plot 32 which has a state of cultivation of Arable and is called "Rough Piece".

Table 1 - Historical Mapping Summary

Date	Source Scale	Relevant Information	
		On Site	Off Site
1868	1:2,500*	A single structure or dwelling is evident in the north east of the site, situated within a rectangular plot, ref 877. The site area includes part of plot 878.	Road present to the east, with fields to the remaining boundaries. Railway Line present 410m to the south west.
1896	1:2,500	Structure and plot in the north east corner of site no longer present. The site forms part of a single larger parcel (ref 52) of land which extends west and south.	Braxells Farm is present to the east.
1909	1:2,500	No change.	Benchmark of 96.4ft (29.4m) present to the east. Spot height of 93ft (28.3m) on road to the south east.
1940	1:2,500	No change.	No significant change.
1947-1949	1:10,560 [AP]	Site forms part of a larger open field with mature trees evident on the northern boundary.	No apparent change.
1963-1965	1:2,500	No change.	Braxells Farm expanded with further structures present. Park Farm now present to the north with Poultry Houses 100m north of site.
1974 1980	1:2,500*	No change.	No significant change.
1989	1:2,500*	No change.	Botley Park Hotel and Country Club now present to the south east.
1993	1:2,500	No change.	No significant change.
1996	1:2,500	No change.	Poultry house to the north no longer referred as such.

*indicates partial mapping coverage and [AP] denotes historical aerial imagery

At the time of the earliest mapping the site had a small dwelling in the north east corner of the site, however since 1896 the site has comprised part of a larger parcel of open agricultural land and has remained undeveloped to the present day.

3.2 Aerial Imagery & Street View

Consideration of the available modern aerial imagery from 1999 onwards reveals the site area to be a field in various states of cultivation with two mature oak trees apparent on the northern boundary. An area of bare earth is evident in the north east of the site in the 2005

image only. The site remains undeveloped in the 2020 image then by 2022 is covered by tracks associated with the adjacent housing development and the construction of Fieldfare Road with the roundabout junction with Winchester Road. An examination of the Historic England aerial explorer does not reveal any historic aerial photographs for the site or vicinity.

An examination of street view imagery from 2008 onwards confirms the site being part of a larger field with an electricity pole and overhead cables in the north east corner of the site. There are grazing Freishan cattle noted in 2011. The site remains unchanged to March 2022 when the construction of Fieldfare Road and the roundabout is underway, with made up ground and landscaping evident along the southern boundary to form an even gradient. Mounds of earth are evident on and adjacent to the site, which are presumably site won materials from grading and construction of the adjacent access roadway. The mounds of earth remain on the subsequent March 2023 image, when perimeter site hoarding has been erected, temporary solar power lighting units are now present and removal of the overhead cables has taken place.

3.3 Unexploded Ordnance

An examination of the Zetica risk maps reveals the site as being within an area of low risk of buried UXO being present and further detailed or site specific UXO risk assessment is not necessary.

4 GEOLOGY

4.1 Published Geology

An examination of the 1:50,000 British Geological Map of the area reveals the site to be underlain by the Wittering Formation of the lower Eocene epoch and is part of the Bracklesham Group, typically comprising laminated clay interbedded with sand.

4.2 Historical Borehole Records

The records of the BGS have been reviewed and no relevant records are present for the site or immediate vicinity. The nearest is 524m south east at Pear Tree Close and reveals that the Bracklesham Beds predominantly comprises clay in this area, which was proved to 11.45m.

4.3 Hydrogeology

The site is underlain by a bedrock Secondary (A) or Minor aquifer of medium vulnerability thought to be associated with the Wittering Formation. The Reading Formation at depth is also

classed as a Secondary A aquifer. Moreover, the site is not underlain by a drinking water Source Protection Zone [SPZ]. No groundwater abstractions are recorded within 1km of the site.

4.4 Radon

The Envirocheck data confirms the site is in a lower probability radon affected area as less than 1% of properties are above the action level. Moreover, no protective measures as described in BRE report BR211 are necessary in the construction of new properties or extensions.

5 ENVIRONMENTAL SETTING

5.1 Hydrology & Flood Risk

The nearest surface water feature are drains 115m north east of the site. Horton Heath Stream and Ford Lake are located within 350m north of the site with flow to the east, before turning southwards and flow away to the south/south east ultimately into the River Hamble. The site is not at risk of flooding from rivers or surface waters and there is limited potential for groundwater flooding.

5.2 Landfill Data

There are no active or inactive registered landfill sites listed in the Envirocheck report within 1km of the site. There is no infilled land or potential sources of ground gases in the area, hence specific monitoring is not necessary.

5.3 Recent & Current Land Use

The site has historically been used for open agricultural field and part of the site for a single dwelling prior to 1896. No other relevant trade directory information is available for the site or immediate area.

6 SITE RECONNAISSANCE

A visit to site was made on 17th October 2023 using the procedures outlined in CLR 2. At the time of the survey the conditions were dry and clear. The majority of the eastern half of the site is covered by long grass with some perennial weeds apparent. The southern part of the

site has coarse and cobble-sized fragments of brick, concrete stone and other rubble evident at surface with storage of building bricks and blocks noted along the western edge of the site.

There is a site access road forming the western boundary, with mesh fencing segregating a public footpath along the northern boundary and two mature oak trees. The western boundary of the site is unsecure and open from the adjacent site access. The electricity pole remains in the north east corner of the site. There is a wheel wash station with associated collection system and settlement tanks with a ramp in the south west of the site and secure gated access from Fieldfare Road.

The mounds of earth noted on earlier street view imagery are still present, now being vegetated and are presumably comprised of site won materials which were excavated as part of the adjacent construction of Fieldfare Road. During the visit several photographs were taken which provide a general impression of the site at the time of the visit and these are included as Figure 2 and a selection below.



Mature oak tree from public footpath



Rubble at surface in west of site



View west along Fieldfare Road with secure access to wheelwash beyond gate



View of site looking south west with earth mound evident and wheelwash obscured behind

7 PRELIMINARY RISK ASSESSMENT

7.1 Conceptual Site Model

In accordance with current LCRM guidance, a Conceptual Site Model has been prepared for this site. The model prepared for the site in tabular format below lists potential sources of contamination, identified receptors on and within the immediate vicinity of the site, together with the pathways between them. A pathway must exist for an identified source to pose a risk to a receptor, thereby forming an active pollutant linkage. The primary receptors are considered to be future residents (human health), surrounding ecology (plants and animals), controlled waters and proposed buildings.

A qualitative assessment of the risk of each potential pollutant linkage is given based upon the CIRIA guidance document 'Contaminated Land Risk Assessment: A Guide to Good Practice' (Rudland, Lancefield and Mayell, 2001). The risk is a combination of the probability or frequency of occurrence of a defined hazard and the magnitude of the consequences of the occurrence.

Table 2 - Preliminary Conceptual Site Model

Source(s)	Potential Pathway(s)	Receptor(s)	Risk Level
<i>Made Ground associated with demolished structure in north east of site</i>	Dermal Contact, Ingestion and Inhalation of dust	Site Workers End Users	Low to moderate
		Groundwater	Very low

No historical potential sources of contamination have been identified except for a small dwelling demolished sometime prior to 1896. There may be potential contaminants associated with any made ground from the demolition of the structure.

The site has evidently had some itinerant use for storage of building materials and a wheelwash system however, these are both considered to be low risk activities. The wheelwash is a closed loop system with integral settlement tanks for separate off-site disposal of silt.

A Public Footpath is present running parallel with the northern boundary of the site which is securely fenced from the development area.

7.2 Geotechnical Hazards

The site is indicated as being within an area of moderate risk of shrink/swell hazards associated with the underlying Wittering Formation. The presence of two mature oak trees on the northern site boundary is likely to influence foundation design depending on the proximity of the proposed structure.

7.3 Further Investigation

It would be prudent to carry out an intrusive investigation to prove the underlying natural strata and absence of any made ground. This work could be combined with a geotechnical investigation to provide suitable parameters to enable foundation design. The investigation should include the area of the previous structure in the north east of the site and include testing for typical urban priority contaminants such as heavy metals, ACM and PAH.

The presence of rubble at surface in the west of the site is presumably a temporary solution to assist in the storage of materials for the adjacent development. It should be appreciated however, that coarse or cobble-sized fragments of rubble, brick or concrete are unsuitable in areas of soft landscaping or gardens. This can be addressed as part of the normal ongoing development of the site.

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LIST OF ABBREVIATIONS

AOD	-	Above Ordnance Datum
ACM	-	Asbestos-containing Material
AST	-	Above-ground Storage Tank
BGS	-	British Geological Survey
BH	-	Borehole
BRE	-	Building Research Establishment
BSI	-	British Standards Institution
BS	-	British Standard
C4SL	-	Category Four Screening Level
CIRIA	-	Construction Industry Research and Information Association
CP	-	Cable Percussive
DPH	-	Dynamic Probing Heavy
DPSH	-	Dynamic Probing Super Heavy
EA	-	Environment Agency
GAC	-	Generic Assessment Criteria
LL	-	Liquid Limit
mAOD	-	Metres Above Ordnance Datum
mBGL	-	Metres Below Ground Level
mOD	-	Metres Ordnance Datum
OS	-	Ordnance Survey
PAH	-	Polycyclic Aromatic Hydrocarbons
PCB	-	Polychlorinated Biphenyl
PID	-	Photo Ionisation Detector
PL	-	Plastic Limit
PSD	-	Particle Size Distribution
SGV	-	Soil Guideline Value
SOM	-	Soil Organic Matter
SPT	-	Standard Penetration Test
SPZ	-	Source Protection Zone
SVOC	-	Semi-volatile Organic Compounds
TPH	-	Total Petroleum Hydrocarbon
UST	-	Underground Storage Tank
UXB	-	Unexploded Bombs
UXO	-	Unexploded Ordnance
VOC	-	Volatile Organic Compound

FIGURE 1

PROPOSED LAYOUT



02/01/18 Original Drawing			JB	JB
Rev	Date	Revision Description	Drawn	Checked
6 Pioneer Court, Dartington, OX1 4ND t 01225 404 111 e info@adgarchitects.co.uk w www.adgarchitects.co.uk				
Client Halebourne Group				
Project Information Proposed Care Home Development				
Drawing Title Proposed Site Plan Hedge End, Boorley Green, Botley				
A1 Scale 1:200		A3 Scale		
Job Number H.21.61	Drawing Number (9-) 2		Revision A	
Drawing Issue FEASIBILITY				

FIGURE 2

SITE PHOTOGRAPHS

View of site looking south



View of site looking east



View of site from Winchester Road to public footpath access



View of western site boundary



View of site looking south



Title: Site Photographs

Dwg No: 23/12718/2

Drawn by: GO

Client: Hedge End
Care Home Ltd

Contract: Fieldfare Road,
Boorley Green

Job Ref: 23/12718/GO

Scale: NTS

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