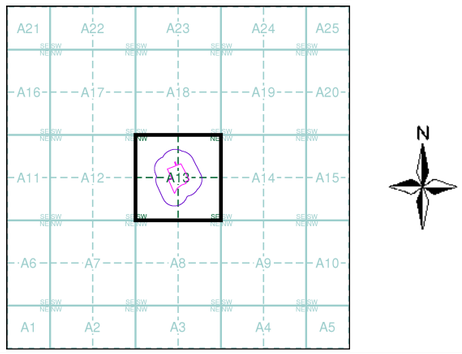
MOTT MACDONALD

Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

Order Number:	285631777_1_1
Customer Ref:	100418273 (note: to transfer to Hempland)
National Grid Reference:	462570, 452930
Slice:	A
Site Area (Ha):	2.22
Search Buffer (m):	100

Site Details

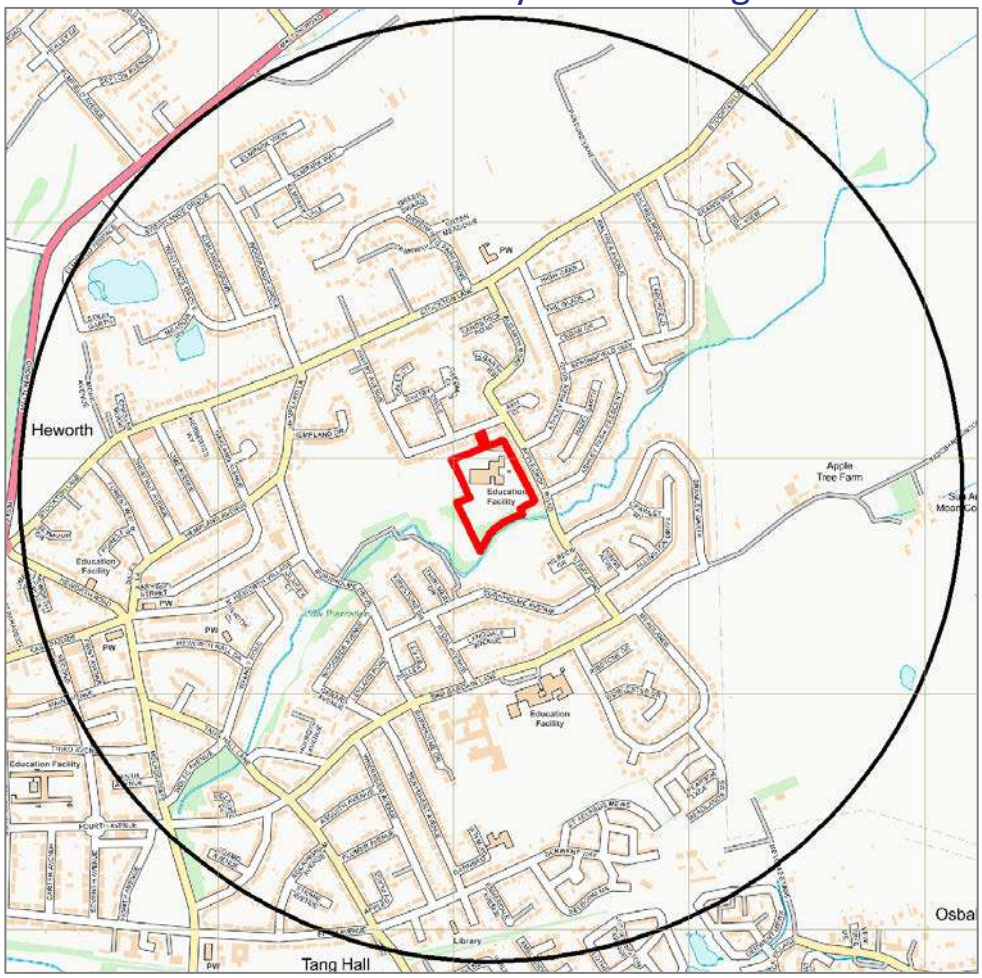
Hempland Primary ACADemy, Whitby Avenue, YORK, YO31 1ET

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

PRELIMINARY UNEXPLODED ORDNANCE (UXO) THREAT ASSESSMENT

Meeting the requirements of *CIRIA* C681 'Unexploded Ordnance (UXO) – A guide for the Construction Industry' Risk Management Framework



PROJECT NUMBER	8888_15	**ORIGINATOR**	M. Stott
PROJECT	Hempland	**REVIEWED BY**	L. Gregory
CLIENT	Mott MacDonald	**RELEASED BY**	L. Gregory
VERSION	1.0	**DATE**	5th October 2021
RECOMMENDATION	No Further Action is required to address the UXO risk at this Study Site		

alpha ASSOCIATES
special risks consultancy

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T: +44 (0)2033 713 900 | W: www.6alpha.com

UNEXPLODED ORDNANCE THREAT ASSESSMENT

STUDY SITE

The Study Site is described as "Hempland Primary School, Whitby Ave, Heworth, York, YO31 1ET", and it is centred on National Grid Reference 462579, 452933.

THREAT POTENTIAL AND RECOMMENDATIONS

The potential for a UXO hazard to occur, and more specifically, the potential for unexploded WWI and WWII ordnance to exist at this site is assessed as being UNLIKELY (*Figure 2*).

In accordance with *CIRIA* C681 Chapter 5 on managing UXO risks, *6 Alpha* concludes that **NO FURTHER ACTION** is required to address the UXO risk at this Study Site. Should you have any queries, please contact *6 Alpha*.

REPORT SUMMARY

During WWII, the Study Site was situated within *York County Borough*, which recorded five High Explosive (HE) bomb strikes per 100 hectares; a "very low" level of bombing.

Luftwaffe aerial reconnaissance photography associated with the Study Site did not identify any primary bombing targets on-site or within 1,000m of the Study Site boundary.

Air Raid Precaution (ARP) bomb strike mapping did not document any bomb strikes on-site or in its immediate vicinity. Nonetheless, written ARP records noted incendiary bomb strikes impacting in *Heworth* during WWII. Whilst the exact locations of the bomb strikes were not documented, it appears that they were concentrated around the gas works near *Monk Bridge* (1.4km west) and *East Parade* (750m west at its closest point).

Official bomb damage mapping was not available but an analysis of post-war mapping and further *6 Alpha* research did not identify any evidence of bomb damage on-site or within 1,000m of the Study Site boundary.

Therefore, although WWII bombing was recorded in the wider area, as there was no bombing or bomb damage recorded in the Study Site's vicinity during WWII, there is no evidence to suggest that further investigation into UXO is warranted.

USING THIS REPORT

This Preliminary Assessment is designed to inform environmental and construction professionals of the potential threat of military related explosives and/or ordnance on, or in, the vicinity of the Study Site.

This assessment is designed to be employed as a site-screening tool to meet with the requirement of Phase One of the *CIRIA UXO Risk Management Framework*; there are two broad prospective outcomes; either the threat level requires a detailed threat & risk assessment; or no further action is required. In the former instance we can provide a report within 10 working days (or more quickly upon application).

Two figures accompany the report, the *Second World War* (WWII) High Explosive (HE) Bomb Density and the final Probability of UXO Encounter. The purpose of this approach is to demonstrate that whilst bomb density statistics give an indication for WWII bombing, they should not be relied upon exclusively to generate a holistic assessment.

For further information, please contact *6 Alpha*:

Website: http://www.6alpha.com

Telephone: +44 (0)2033 713 900

Email: enquiry@6alpha.com

DATA FINDINGS

Threat Source (within 1,000m)		Detail	
		Identified	Comments
	Military Facilities/Activity	✗	None recorded within 1,000m.
	Ordnance Manufacture/Storage	✗	None recorded within 1,000m.
	WWII Decoy Bombing Sites	✗	None recorded within 1,000m.
	WWII Defensive Features	✗	None recorded within 1,000m.
	WWII *Luftwaffe* Designated Bombing Targets	✗	*Luftwaffe* aerial photography did not identify any primary bombing targets on-site or within 1,000m of the Study Site boundary.
	WWII Bomb Strikes (Study Site Boundary)	✗	ARP records were not available.
	WWII Bomb Strikes (Wider Area)	✓	Incendiary bomb strikes were recorded near the gas works at *Monk Bridge* and *East Parade.*
	WWII Bomb Damage	✗	Official bomb damage mapping was not available.
	Abandoned Bomb Register	✗	The official abandoned bomb list did not identify any abandoned bombs located on-site or within 1,000m of the Study Site boundary.
	Potential Threat Sources	✗	Further research has not uncovered any direct UXO threat sources associated with the Study Site. HE bombs may pose a residual threat.
	WWII Bombing Density Per 100 Hectares	✓	The Study Site was located within *York County Borough*, which recorded five HE bomb strikes per 100 hectares.

IMPORTANT NOTES

1. The term 'Preliminary UXO Threat Assessment' has been used to describe this report, to fall in line with the *CIRIA* C681 guidelines. Whilst the term 'Risk' can be justifiably used at this stage, the reader should note that the 'Consequence' function of 'Risk' is not considered. Should it be required, this would be addressed in the 'Detailed UXO Threat & Risk Assessment' (Stages 2 and 3).
2. This report is accurate and up to date at the time of writing.
3. The assessment levels have been generated from historical data and third party sources. Where possible *6 Alpha* have sought to verify the accuracy of such data, but cannot be held accountable for inherent errors that may be in third party data sets (e.g. *National Archives* or library sources).
4. *6 Alpha* have exercised all reasonable care, skill and due diligence in producing this service.
5. Whilst every effort has been used to identify all potential UXO/explosive threats, there were a number of private facilities, which may not have released privately recorded information concerning UXO/explosive threats into the public domain. It is therefore possible that some of the aforementioned sites may not be included within the database.

HEMPLAND PRIMARY SCHOOL
WHITBY AVE, HEWORTH, YORK YO31 1ET

WWII High Explosive Bomb Density

BRITISH NATIONAL GRID

BOMB SEARCH
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PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
8888_15	1	LH	LG	01 October 2021

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HEMPLAND PRIMARY SCHOOL
WHITBY AVE, HEWORTH, YORK YO31 1ET

Probability of UXO Encounter

BRITISH NATIONAL GRID

BOMB SEARCH
WWW.6ALPHA.COM

PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
8888_15	2	LH	LG	01 October 2021

alpha ASSOCIATES

APPENDIX 4

Contaminated Land Risk Assessment Methodology

CONTAMINATED LAND RISK ASSESSMENT METHODOLOGY

Legislation Overview

This report includes potential contaminant linkage and environmental risk assessment in line with the risk-based methods referred to in relevant UK legislation and guidance. Government environmental policy is based upon a "suitable for use approach," which is relevant to both the current use of land and also to any proposed future use. The contaminated land regime is the statutory regime for remediation of contaminated land that causes an unacceptable level of risk and is set out in Part 2A of the Environmental Protection Act 1990 ("EPA 1990"). The main objective of introducing the Part 2A regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health or the wider environment given the current use and circumstances of the land. Part IIA provides a statutory definition of contaminated land under Section 78A(2) as:

> *"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that:*
>
> *(a) Significant harm is being caused or there is a significant possibility of such harm being caused;*
>
> *or*
>
> *(b) Pollution of controlled waters is being, or is likely to be, caused."*

In order to assist in establishing if there is a "*significant possibility of significant harm*" there must be a "*contaminant linkage"* for potential harm to exist. That means there must be a source(s) of contamination, sensitive receptors present and a connection or pathway between the two. This combination of source-pathway-receptor is termed a "contaminant linkage or SPR linkage." Part 2A of The Environmental Protection Act 1990 is supported by a substantial quantity of guidance and other Regulations. Key implementing legislation of the Part 2A regime includes the Contaminated Land (England) Regulations 2006 (SI 2006/1380) as amended by the overarching legislation for the contaminated land regime, which implements the provisions of Part IIA of the Environmental Protection Act 1990 (as inserted by section 57 of the Environment Act 1995), came into force on 14th July 2000 together with recent amended regulations: Contaminated Land (England) (Amendment) Regulations 2012 (SI 2012/263). Revised Contaminated Land Statutory Guidance was published by DEFRA in April 2012. Part 2A defines the duties of Local Authorities in dealing with it. Part 2A places contaminated land responsibility as a part of planning and redevelopment process rather than Local Authority direct action except in situations of very high pollution risk.

In the planning process guidance is provided by National Planning Policy Framework (NPPF) of February 2019 which requires that a site which has been developed shall not be capable of being determined "contaminated land" under Part 2A. In practice, Planning Authorities require sites being developed to have a lower level of risk post development, which is known as 'land affected by contamination'. This is to ensure that there is a suitable zone of safety below the level for Part 2A determination and prevent recently developed sites becoming reclassified as contaminated land if there are future legislative or technical changes (e.g. a substance is subsequently found to be more toxic than previously assessed this increases its hazard).

The criteria for assessing concentrations of contaminants and hence determining whether a site represents a hazard are based on a range of techniques, models and guidance. Within this context it is relevant to note that Government objectives are:

(a) to identify and remove unacceptable risks to human health and the environment;
(b) to seek to bring damaged land back into beneficial use;
(c) to seek to ensure that the cost burdens faced by individuals, companies and society as a whole are proportionate, manageable and economically sustainable.

These three objectives underlie the "suitable for use" approach to risk management and remediation of contaminated land. The "suitable for use" approach focuses on the risks caused by land contamination. The approach recognises that the risks presented by any given level of contamination will vary greatly according to the use of the land and a wide range of other factors, such as the underlying geology of the site. Risks therefore should be assessed on a site-by-site basis.

The "suitable for use" approach then consists of three elements:

(a) *ensuring that land is suitable for its current use* - in other words, identifying any land where contamination is causing unacceptable risks to human health and the environment, assessed on the basis of the current use and circumstances of the land, and returning such land to a condition where such risks no longer arise ("remediating" the land); the contaminated land regime provides the regulatory mechanisms to achieve this;
(b) *ensuring that land is made suitable for any new use, as planning permission is given for that new use* - in other words, assessing the potential risks from contamination, on the basis of the proposed future use and circumstances,

before official permission is given for the development and, where necessary to avoid unacceptable risks to human health and the environment, remediating the land before the new use commences; this is the role of the town and country planning and building control regimes; and

(c) *limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to the current use or future use of the land for which planning permission is being sought* - in other words, recognising that the risks from contaminated land can be satisfactory assessed only in the context of specific uses of the land (whether current or proposed), and that any attempt to guess what might be needed at some time in the future for other uses is likely to result either in premature work (thereby running the risk of distorting social, economic and environmental priorities) or in unnecessary work (thereby wasting resources).

The mere presence of contaminants does not therefore necessarily warrant action, and consideration must be given to the scale of risk involved for the use that the site has, and will have in the future.

Overall Methodology

The work presented in this report has been carried out in general accordance with recognised best practice as detailed in guidance documents such as in the on-line Environment Agency Land Contamination Risk Management (LCRM), and BS10175:2011+A2 2017. Important aspects of the risk assessment process are transparency and justification. The particular rationale behind the risk assessments presented is given in this appendix.

The first stage of a two-staged investigation and assessment of a site is the Preliminary Investigation (BS 10175:2011), often referred to as the Phase 1 Study, comprising desk study and walk-over survey, which culminates in the Preliminary Risk Assessment and development of the Preliminary Conceptual Site Model (CSM). A CSM is developed which identifies potential geotechnical and geo-environmental hazards and the qualitative degree of risk associated with them. From the geo-environmental perspective, the Hazard Identification process uses professional judgement to evaluate all the hazards in terms of potential contaminant linkages (of contaminant source-pathway-receptor). Potential contaminant linkages are potentially unacceptable risks in terms of the current contaminated land regime legal framework and require either remediation or further assessment. These are normally addressed via intrusive ground investigation and generic risk assessment.

The second stage is the Ground Investigation, Generic Risk Assessment and Geotechnical Interpretation. This represents the further assessment mentioned above. The scope of the Ground Investigation is based on the findings of the Preliminary Risk Assessment and is designed to reduce uncertainty in the geotechnical and geoenvironmental hazard identification. The Ground Investigation comprises fieldwork, laboratory testing and usually also on-site monitoring. The Ground Investigation may include the Exploratory, Main and Supplementary Investigations described in BS 10175:2011+A2 2017. The results of the Ground Investigation reduces uncertainty in the geotechnical and geoenvironmental risks. Depending on the findings more detailed investigations or assessments may be required.

Preliminary Risk Assessment

Current practice recommends that the determination of potential liabilities that could arise from land contamination be carried out using the process of risk assessment, whereby "risk" is defined as:

"(a) The probability, or frequency, or occurrence of a defined hazard; and

(b) The magnitude (including the seriousness) of the consequences."

The UK's approach to the assessment of environmental risk is set out in the Environment Agency's "Land Contamination Risk Assessment". This established an iterative, systematic staged process which comprises:

(a) Hazard identification;
(b) Hazard assessment;
(c) Risk estimation; and
(d) Risk evaluation

At each stage during the development process, the above steps are repeated as more detailed information becomes available for the site.

For an environmental risk to be present, all three of the following elements must be present:

- Source/Contaminant: hazardous substance that has the potential to cause adverse impacts;
- Receptor: target that may be affected by contamination: examples include human occupants/users of site, water resources (rivers or groundwater), or structures;
- Pathway: a viable route whereby a hazardous substance may come into contact with the receptor.

The absence of one or more of each component (contaminant, pathway, receptor) would prevent a contaminant linkage being established and there would be no significant environmental risk.

The identification of potential contaminant linkages is based on a Conceptual Model of the site, which is subject to continual refinement as additional data becomes available. As part of a Preliminary Risk Assessment (Desk Study and site walk over) a Preliminary Conceptual Site Model (PCSM) is formed. Based on the PCSM, potential contaminant linkages can be assessed. If the PCSM and hazard assessment indicate that a contaminant linkage is not of significance then no further assessment or action is required for this linkage. For each significant and potential linkage a risk assessment is carried out. The linkages which potentially pose significant risks may require a variety of responses ranging from immediate remedial action or risk management or, more commonly, further investigation and risk assessment. This next stage is termed a Phase II Main Site Investigation and should provide additional data to allow refinement of the Conceptual Site Model and assess the level of risk from each contaminant linkage.

Definition of Risk Assessment Terminology

The criteria used for risk assessment are broadly based on those presented in DETR's "A Guide to Risk Assessment and Risk Management for Environmental Protection" (2000). The Severity of the risk is classified according to the criteria in Table C.1 below:

Table C.1 Severity/Consequence of Risk	
Severe	Acute risks to human health. Catastrophic damage to buildings/property (e.g. by explosion). Direct pollution of sensitive water receptors or serious pollution of other controlled water (watercourses or groundwater) bodies.
Medium	Harm to human health from long-term exposure. Slight pollution of sensitive controlled waters (surface waters or aquifers) or pollution of other water bodies. Significant effects on sensitive ecosystems or species.
Mild	No significant harm to human health in either short or long term. No pollution of sensitive controlled waters, no more than slight pollution of non-sensitive waters. Significant damage to buildings or structures. Requirement for protective equipment during site works to mitigate health effects.
Negligible	Damage to non-sensitive ecosystems or species. Minor damage to buildings or structures. No harm or pollution of water.

The probability of the risk occurring is classified according to criteria given in Table C.2 below:

Table C.2: Probability of Risk Occurring	
High likelihood	Contaminant linkage may be present, and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor.
Medium/Reasonably Foreseeable	Contaminant linkage may be present, and it is probable that the risk will occur over the long term.
Low/Unlikely	Contaminant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Negligible/ Not credible	Contaminant linkage may be present but the circumstances under which harm would occur are improbable.

An overall evaluation of the level of risk is gained from a comparison of the severity and probability, as shown in Table C.3 below:

Table C.3: Comparison of Severity and Probability					
		Severity			
		Severe	Medium	Mild	Negligible
Probability	High likelihood	Very High Risk	High Risk	Medium/Low Risk	Low Risk
	Medium/Reasonably Foreseeable	High Risk	Medium Risk	Low Risk	Near Zero
	Low/Unlikely	High/Medium Risk	Medium/Low Risk	Low Risk	Near Zero
	Negligible/ Not credible	Medium/Low Risk	Low Risk	Low Risk	Near Zero

The various risk rankings provide guidance for recommended actions, whether this is:

AR - Action Required, Remediation or mitigation or site investigation works required
SIR - Site Investigation Required, further assessment is required.
NAR - No Action Required.

A description of the evaluated risk is as follows:

Table C.4 – Description of the Classified Risks and Likely Action Required	
Evaluated Risk	Recommended Actions
Very High Risk	AR: There is a 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 a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High Risk	AR: Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the long term.
Medium Risk	SI: It is possible that harm could arise to a designated receptor from an identified hazard. However, it is 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 (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low Risk	NAR: It is possible that harm could arise to a designated receptor from an identified hazard, but there is a low likelihood of this hazard occurring and if realised, harm would at worst normally be mild.
Near Zero	NAR: There is a negligible possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

APPENDIX 5

Geotechnical Risk Assessment

Desk Study Report - Geotechnical Risk Register

PC218325
Hempland Primary School

	Condition	Hazard	Potential Impact	Before Control			Comments/Proposed Mitigation	After Control		
				Probability	Impact	Risk		Probability	Impact	Risk
R1	Compressible ground	Insufficient bearing capacity leading to potential increased total and differential settlement problems. The underlying Alne Glaciolacustrine Formation could include soft clay and silt layers.	Failure / excessive movement of the foundations / ground bearing floor slabs leading to cracking of buildings. Potential for differential settlement.	**3 (P)**	**4 (H)**	**12 (Md)**	Undertake appropriate ground investigations to define ground model and inform suitable foundation design.	**2 (U)**	**4 (H)**	**8 (Mn)**
R2	Made Ground	Variable behaviour and thickness leading to varaible bearing capacities and unpredicable total and differential settlements. A thickness of Made Ground of up to about 1m could be present.	Failure / excessive movement of the foundations / ground bearing floor slabs leading to cracking of buildings. Potential for differential settlement.	**4 (L)**	**4 (H)**	**16 (Sb)**	Undertake appropriate ground investigations to define ground model and inform appropriate and suitable foundation design taking foundations into the natural ground or treatment of the Made Ground.	**2 (U)**	**4 (H)**	**8 (Mn)**
R3	Swelling / Shrinking Soils	Shallow foundation movement due to seasonal shrinkage / swelling of clay soils associated with trees and shrubs. Trees and shrubs are present on the site, some of which may be removed during development and the underlying Alne Glaciolacustrine Formation includes clay and silt layers.	Excessive movement of the foundations / ground bearing floor slabs leading to cracking of buildings.	**4 (L)**	**4 (H)**	**16 (Sb)**	Undertake appropriate ground investigations to define ground model and inform suitable foundation design. Identify any existing trees and proximity to proposed building. Ensure any future planting will not influence foundations.	**2 (U)**	**4 (H)**	**8 (Mn)**
R4	Obstruction / Hard Strata	Affecting excavations during construction works and potential hard spots below foundations / floor slabs. Prior to the school the site was a sports field.	Differential movement of the foundations / ground bearing floor slabs leading to cracking of buildings. Delays to excavations during construction.	**3 (P)**	**4 (H)**	**12 (Md)**	Undertake appropriate ground investigations to define ground model and inform suitable foundation design and select appropriate excavation plant for construction.	**2 (U)**	**4 (H)**	**8 (Mn)**
R5	High groundwater	Instability of foundation excavations and problems with foundation, floor slab and road / hardstanding formations. Groundwater levels of up to 3m were recorded in previuous boreholes about 300m to the west of the site.	Excessive movement of the foundations / ground bearing floor slabs leading to cracking of buildings and subsidence of roads / hardstanding areas.	**3 (P)**	**4 (H)**	**12 (Md)**	Undertake appropriate ground investigations including the installation of standpipes and long term monitoring to define groundwater model and inform suitable foundation, floor slab and road design.	**2 (U)**	**4 (H)**	**8 (Mn)**
R6	Chemically Aggressive Soil	Corrosive attack of buried concrete.	Degradation of concrete foundation and buried concrete structures leading to failure.	**3 (P)**	**3 (M)**	**9 (Md)**	Undertake appropriate ground investigations including chemical laboratory testing to BRE SD1 to inform the design of buried concrete.	**2 (U)**	**3 (M)**	**3 (N)**
R7	Buried services	Damage during ground investigation and construction works posing risk to Health and Safety of site personnel and public. Evidence of the presence of buried services noted during site walkover.	Increased cost and delay for unplanned diversions, protection or repair.	**2 (U)**	**5 (VH)**	**10 (Md)**	A statutory services search has been commissioned. A GPR Survey to be carried out prior to the investigation at exploratory hole locations. All Statutory Service Plans to be provided to the Specialist Contractors prior to works taking place. Vigilance throughout installation works for any indications of any unrecorded buried services.	**1 (VU)**	**5 (VH)**	**5 (Mn)**
R8	Slopes	Failure of existing slopes along southern edge of site along river bank and any slope created during development separating different areas.	Not expected.	**1 (VU)**	**4 (H)**	**4 (N)**				

Desk Study Report - Geotechnical Risk Register

PC218325
Hempland Primary School

	Condition	Hazard	Potential Impact	Before Control			Comments/Proposed Mitigation	After Control		
				Probability	Impact	Risk		Probability	Impact	Risk
R9	Retaining Walls	Failure or movement of any created retaining walls or structures during development separating different site areas.	Not expected.	**1 (VU)**	**4 (H)**	**4 (N)**				
R10	Solution Features	Potential collapse or settlement of ground affecting buildings, hardstanding and infrastructure.	Not expected.	**1 (VU)**	**4 (H)**	**4 (N)**				
R11	Mining Activities	Potential collapse or settlement of ground affecting buildings, hardstanding and infrastructure.	Not expected.	**1 (VU)**	**4 (H)**	**4 (N)**				
R12	Frost Susceptibility	Affecting the subgrade of roads and areas of hardstanding. The underlying Alne Glaciolacustrine Formation could include clay and silt layers.	Subsidence and cracking of roads and areas for hardstanding and increased maintenance and management costs.	**3 (P)**	**3 (P)**	**9 (Mn)**	Undertake appropriate ground investigations to define ground model and inform suitable pavement design. The geological unit underlying the site is the Alne Glaciolacustrine Formation consisting clay and silt.	**2 (U)**	**3 (M)**	**6 (Mn)**
R13	UXO	Affecting investigation and construction works and posing risk to Health and Safety of site personnel and the public.	Increased costs and delay to the project and potential serious injury or death.	**2 (U)**	**5 (VH)**	**10 (Md)**	Preliminary UXO Threat Assessment carried out and risk assessed as very low and no further action required. Vigilance throughout investigation and construction works required.	**1 (VU)**	**5 (VH)**	**5 (Mn)**

Notes

1 The Geotechnical Risk Register has been developed in general accordance with the guidance presented in DETR Partners in Technology Programme/ICE Document 'Managing Geotechnical Risk' (2001). It has been compiled to show the degree of risk attached to various geotechnical aspects of the proposed scheme with the purpose of providing an assessment of the risk to the scheme posed by ground-related problems and identifying practical mitigation measures to control the risk to an acceptable level.

2 The inclusion of a risk in the register does not constitute confirmation that the problem actually exists at the site.

3 A probability of 'very unlikely' is indicative of a condition which the available data suggests should not be present.

4 The calculated risk is not the risk that the impact will occur, it is the risk that the mitigation will be required to enable the project to progress.

5 Only geotechnical risks are considered. Other risks such as archaeology, ecology, unexploded ordnance, etc. have not been considered in this Geotechnical Risk Register.

Methodology

1 For the purposes of this risk register the magnitude of each impact and the resulting severity of risk is measured against that which would 'normally' be expected for each element. The degree of risk (R) is determined by combining an assessment of the probability (P) of the hazard occurring with an assessment of the Impact (I) the hazard (R = P x I) and associated mitigation will cause if it occurs.

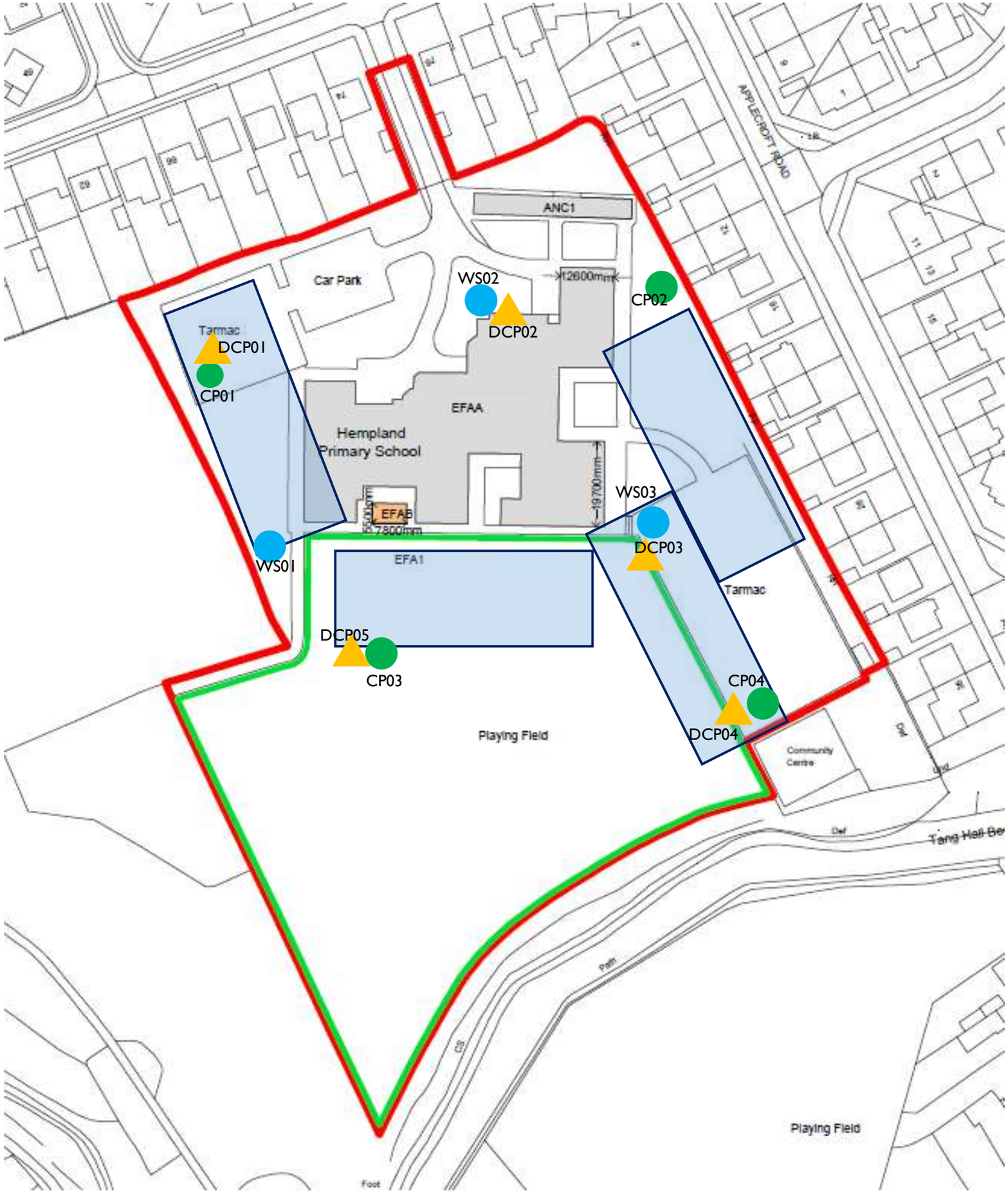
2 The scale against which the probability and impact are measured and the resulting degree of risk determined is presented below.

Probability (P)		Impact (I)		Risk (R)	
Very Likely (VLk)	5	Very High	5	Severe (Sv)	20 - 25
Likely (Lk)	4	High (H)	4	Substantial (Sb)	15 - 19
Plausible (P)	3	Medium (M)	3	Moderate (Md)	10 - 14
Unlikely (U)	2	Low (Lw)	2	Minor (Mn)	5 - 9
Very Unlikely (VU)	1	Very Low (VLw)	1	None / Negligible (N)	1 - 4

APPENDIX 6

Proposed Exploratory Hole Plan

Proposed Exploratory Hole Plan 17/11/21



KEY

- Cable Percussive Borehole (CP01-CP04)
- Window Sample Borehole (WS01-WS03)
- Dynamic Cone Penetrometer (DCP01-DCP05)

  Note: CP01-CP04 and WS02 to be installed with groundwater monitoring wells.

- Possible location of redevelopment