



Woking Football Club

Environmental Impact Assessment

Volume 3: Technical Appendices

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SCHEDULE 4 INFORMATION AND WAYFINDING

	Information for Inclusion in Environmental Statements, as Specified in Schedule 4 of the EIA Regulations 2017	How the EIA will address the Information Specifications
1.	A description of the development, including in particular:	
(a)	a description of the location of the development;	ES Volume 1: Chapter 1: Introduction;
(b)	a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;	ES Volume 1: Chapter 4: The Proposed Development; Chapter 5: Demolition and Construction;
(c)	a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used,	ES Volume 1: Chapter 4: The Proposed Development;
	...nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; and	ES Volume 1: Chapter 4: The Proposed Development; Chapter 5: Demolition and Construction;
(d)	an estimate, by type and quantity, of expected residues and emissions (such as water, ...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)).
	...air, ...	ES Volume 1: Chapter 8: Air Quality; ES Volume 3: Air Quality;
	...soil and subsoil pollution,...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)); Preliminary Risk Assessment (Scoping Report - Appendix);
	...noise, vibration, ...	ES Volume 1: Chapter 9: Noise and Vibration; ES Volume 3: Noise and Vibration;
	...light, ...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); Chapter 11: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare; ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)); Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare;
	...heat, radiation and ...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); Chapter 11: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare; ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA));

	Information for Inclusion in Environmental Statements, as Specified in Schedule 4 of the EIA Regulations 2017	How the EIA will address the Information Specifications
		Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare;
	...quantities and types of waste produced during the construction and operation phases;	ES Volume 1: Chapter 4: The Proposed Development; Chapter 5: Demolition and Construction;
2.	A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.	ES Volume 1: Chapter 3: Alternatives and Design Evolution;
3.	A description of the relevant aspects of the current state of the environment (baseline scenario) ...	ES Volume 1: Chapter 2: EIA Methodology; Technical Chapters 6 - 11;
	...and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.	ES Volume 1: Chapter 2: EIA Methodology; Technical Chapters 6 - 11;
4.	A description of the factors specified in regulation 4(2) likely to be significantly affected by the development: population, human health, ...	ES Volume 1: Chapter 4: The Proposed Development; Chapter 6: Socio-Economics ES Volume 3: Socio-Economics
	...biodiversity (for example fauna and flora), ...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); Chapter 4: The Proposed Development; ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)); Preliminary Ecological Appraisal (Scoping Report - Appendix); Updated Preliminary Ecological Appraisal;
	...land (for example land take), ...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)); Preliminary Risk Assessment (Scoping Report - Appendix);
	...soil (for example organic matter, erosion, compaction, sealing), ...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)); Preliminary Risk Assessment (Scoping Report - Appendix);
	...water (for example hydromorphological changes, quantity and quality), ...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)); Flood Risk Assessment and Drainage Strategy;

	Information for Inclusion in Environmental Statements, as Specified in Schedule 4 of the EIA Regulations 2017	How the EIA will address the Information Specifications
	...air, ...	ES Volume 1: Chapter 8: Air Quality; ES Volume 3: Air Quality
	...climate (for example greenhouse gas emissions, impacts relevant to adaptation), ...	ES Volume 1: Chapter 4: Proposed Development ES Volume 3: Greenhouse Gas Assessment;
	...material assets, cultural heritage, including architectural and archaeological aspects, and landscape...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); ES Volume 2: Townscape and Visual Impact Assessment; ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)); Historic Environment Assessment (Scoping Report - Appendix); Updated Historic Environment Assessment Heritage Statement;
5.	A description of the likely significant effects of the development on the environment resulting from, inter alia:	
(a)	the construction and existence of the development, including, where relevant, demolition works.	ES Volume 1: Chapter 5: Demolition and Construction;
(b)	the use of natural resources, in particular land, soil, ...	ES Volume 1: Chapter 4: The Proposed Development; Chapter 5: Demolition and Construction;
	...water and ...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)); Flood Risk Assessment and Drainage Strategy;
	...biodiversity, ...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); Chapter 4: The Proposed Development; ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)); Preliminary Ecological Appraisal (Scoping Report - Appendix); Updated Preliminary Ecological Appraisal;
	...considering as far as possible the sustainable availability of these resources;	ES Volume 1: Chapter 4: The Proposed Development; Chapter 5: Demolition and Construction; Technical Chapters 6 – 11;
(c)	the emission of pollutants, ...	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); Chapter 7: Highways and Transport;

	Information for Inclusion in Environmental Statements, as Specified in Schedule 4 of the EIA Regulations 2017	How the EIA will address the Information Specifications
		Chapter 8: Air Quality; ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)); Preliminary Risk Assessment (Scoping Report - Appendix); Highways and Transport Air Quality;
	...noise, vibration,...	ES Volume 1: Chapter 9: Noise and Vibration; ES Volume 3: Noise and Vibration;
	...light, ...	ES Volume 1: Chapter 11: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare; ES Volume 3: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare;
	...heat and radiation, ...	ES Volume 1: Chapter 11: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare; ES Volume 3: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare;
	...the creation of nuisances, ...	ES Volume 1: Chapter 9: Noise and Vibration; ES Volume 3: Noise and Vibration;
	...and the disposal and recovery of waste;	ES Volume 1: Chapter 4: The Proposed Development; Chapter 5: Demolition and Construction;
(d)	the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);	ES Volume 1: Chapter 2: EIA Methodology (Summary of 'Topics Scoped Out From EIA); Technical Chapters 6 – 11; ES Volume 2: Townscape and Visual Impact Assessment; ES Volume 3: EIA Scoping Report (refer Scoping Report (Topics Scoped Out From EIA)); Socio-Economics; Flood Risk Assessment and Drainage Strategy; Heritage Statement;
(e)	the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;	ES Volume 1 Technical Chapters 6 – 11; ES Volume 2: Townscape and Visual Impact Assessment;
(f)	the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change; and	ES Volume 1: Chapter 4: The Proposed Development ES Volume 3: Greenhouse Gas Emissions;
(g)	the technologies and the substances used.	ES Volume 1: Chapter 4: The Proposed Development;

	Information for Inclusion in Environmental Statements, as Specified in Schedule 4 of the EIA Regulations 2017	How the EIA will address the Information Specifications
		Chapter 5: Demolition and Construction; Technical Chapters 6 – 11;
6.	A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.	ES Volume 1: Chapter 2: EIA Methodology; Technical Chapters 6 – 11;
7.	A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.	ES Volume 1: Chapter 4: The Proposed Development; Chapter 5: Demolition and Construction; Technical Chapters 6 – 11; Chapter 15: Mitigation & Monitoring Schedule;
8.	A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU(c) of the European Parliament and of the Council or Council Directive 2009/71/Euratom(d) or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.	See section 'EIA And The Scoping Process – Project Vulnerability' of the EIA Scoping Report;
9.	non-technical summary of the information provided under paragraphs 1 to 8.	ES Non-Technical Summary;
10.	A reference list detailing the sources used for the descriptions and assessments included in the environmental statement.	ES Volume 1: Chapter 2: EIA Methodology; Technical Chapters 6 – 11.

Annex 2: Statement of Competence

STATEMENT OF COMPETENCE

Background

European Union Directive 2014/52/EU requires that developers ensure that the Environmental Impact Assessments (EIA) and reports (Environmental Statements) are prepared by 'competent experts'. In addition, the UK Town and Country Planning (Environmental Impact Assessment) Regulations 2017 state that an Environmental Statement must be accompanied by a statement from the Applicant outlining the relevant expertise or qualifications of experts. As such, this Statement of Competence has been prepared by Trium Environmental Consulting LLP (Trium), as lead EIA Coordinator for the Proposed Development, to outline the capability of the company and the competency of the individuals responsible for undertaking and reporting on the results and Conclusions of the EIA.

Trium Environmental Consulting LLP

Trium was established in 2017 by three highly experienced EIA Practitioners, Juliette Callaghan, Rachel Naylor and Abbey Musker, and has been operating for over 2 years. They have extensive experience in managing the environmental issues and impacts surrounding large scale, high profile urban regeneration development projects. Between them, over their careers to date, they have project directed, managed or contributed to over 250 EIAs within the retail, residential, leisure, commercial, cultural, infrastructure and industrial sectors. They have particular expertise in London based development projects. They are supported by a large team of Environmental Impact Assessment (EIA) consultants with a wide range of experience in urban regeneration projects within the United Kingdom.

Trium is an urban regeneration specialist consultancy, with a sole focus on EIA. The team works closely with bespoke environmental teams suited to the provision of the environmental assessments required for individual projects. Trium ensures it delivers excellence in EIA management, ensuring EIA team capabilities, EIA regulatory compliance, EIA context and influence, EIA content, EIA presentation and improving EIA practice. Trium's Partners and Employees hold various membership status with IEMA, and are members of other appropriate professional institutions.

Competent Experts

Summaries of the qualifications and experience of the EIA Project Director's, responsible for the checking and review of the Environmental Statement, and the EIA Project Manager, responsible for the coordination of the EIA, are presented below.

EIA Director – Abbey Musker

Abbey Musker, EIA Director for Woking Football Club, is a founding Partner of Trium. She has over 15 years' experience in UK Environmental Impact Assessments (EIA), Urban Regeneration & Construction and Masterplanning, primarily within the property industry.

Abbey has extensive experience in many facets of environmental consultancy, in addition to particular experience in managing EIAs for large scale, high profile projects and tall buildings. She has undertaken EIAs for mixed use, retail, residential and commercial schemes as well as infrastructure projects including railway (HS2), roads in Africa and mines in Sweden. Abbey works closely with the design team and the client in order to ensure EIAs submitted for planning are robust and mitigated through design. Her experience includes project and financial coordination, management of baseline studies, review of technical EIA reports and analysis of residual environmental and socio-economic impacts against recognised significance criteria. Abbey understands the requirements of local, regional and National Policy, UK planning system having worked within a variety of boroughs, particularly in London and across the UK.

EIA project experience includes:

- The Shell Centre, Lambeth;
- Chelsea Barracks, Westminster;
- HS2;
- The Tulip, City of London;
- The Middlesex Hospital Site, Westminster;
- The United Kingdom Centre for Medical Research and Innovation, Camden;
- 5 Broadgate, City of London; and
- Art'Otel, Hackney.

EIA Manager – Tsz Kan Woo

Tsz Kan Woo, the EIA Project Manager for the Woking Football Club scheme, is a senior environmental consultant with over seven years' experience in environmental impact assessments, and environmental management.

Recent EIA project experience includes:

- Quayside Quarter, Ealing;
- Trent Park, Enfield;
- Oval Gas Works, Lambeth;
- South Quay Plaza, Tower Hamlets.

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EIA Technical Specialists

The EIA has included a number of technical assessments. These have been prepared and approved by competent experts, who hold professional memberships and are committed to undertaking continued professional development within their respective fields. A summary of the EIA technical discipline, the lead competent expert, their qualifications and number of years experience is presented in the table below.

EIA Technical Discipline	Name	Company	Years of Experience of Technical Lead within the Relevant Industry	Summary of Experience
Socio-Economics	Ellie Evans	Volterra Partners	Over 15 years of experience	The Socio-economic Lead is a partner at economic consultancy, Volterra Partners. Specialist with experience of socio-economic assessments throughout London and the UK. Recent project experience includes: Battersea Power Station in Wandsworth, Nova in Victoria and Westfield Stratford City in Newham, LLDC. Ellie has a BA Economics and Mathematics, University of Cambridge, Emmanuel College, and is a Member of the Institute of Economic Development.
Highways and Transport	Ian Southwell	Vectos	4 years of experience	Ian is a Director of the Bristol office with more than 12 years' experience in transport planning. Ian works on and manages a wide variety of projects, including large mixed-use schemes in London, large-scale commercial schemes, and strategic residential schemes across the UK. Ian has recently produced ES Chapters for Westfield London, Canford Park, Poole, and Bedford Business Park.
Air Quality and Greenhouse Gas Emissions	Laurence Caird	Air Quality Consultants Ltd	14 years of experience	Mr Caird is an Associate Director with AQC, with 14 years' experience in the field of air quality including the detailed assessment of emissions from road traffic, airports, heating and energy plant, and a wide range of industrial sources including the thermal treatment of waste. He has experience in ambient air quality monitoring for numerous pollutants using a wide range of techniques and is also competent in the monitoring and assessment of nuisance odours and dust. Mr Caird has worked with a variety of clients to provide expert air quality services and advice, including local authorities, planners, developers and process operators. He is a Member of the Institute of Air Quality Management and is a Chartered Scientist.
Noise and Vibration	Stephen Stringer	Sandy Brown Associates	32 years of experience	The Noise and Vibration Lead is a Partner with 32 years' experience as an acoustic consultant undertaking EIA's for a range of schemes. Examples include Heron Quays West, Wood Wharf and Tottenham Hale. Stephen has the following qualifications: MSc, BEng CEng, MIOA, and MCIBSE
Wind Micro-climate	Daniel Hackett	RWDI	10 years of experience	RWDI are wind consultants with extensive experience over 40 years in the fields of wind engineering & environmental studies; RWDI uses advanced engineering tools and expertise to determine wind conditions in the built environment; Daniel Hackett is a Senior Engineer and Associate at RWDI. He has 10 years' experience in wind microclimate consultancy, including impact assessment and mitigation design guidance for projects throughout the UK.
Daylight, Sunlight, Overshadowing, Light Pollution; and Solar Glare	John Barnes	Eb7	13 years of experience	A founding director of eb7, John has 13 years' experience in daylight & sunlight, light pollution, solar glare and EIAs and has provided consultancy and project management for the daylight and sunlight assessments on a number of high-profile schemes John undertakes a broad range of work for clients including property companies, major house-builders and pension funds, advising them at all stages of the project – from initial project feasibility advice through to site acquisition and completion, managing the risks and opportunities related to significant site constraints. John's comprehensive and thorough understanding of the technical basis of all these subjects, have required eb7 to develop bespoke software and methodologies. John regularly works with leading developers, architects, planning and environmental consultancies on key projects across the UK. A few of John's recent projects include: <ul style="list-style-type: none"> Newfoundland (Canary Wharf Group); EIA, daylight, sunlight, overshadowing, light pollution and solar glare; New Covent Garden Market (St Modwen and New Covent Garden Market) Masterplanning, EIA, daylight, sunlight, overshadowing, light pollution and solar glare; Merchant Square (European Land); Masterplanning, EIA, daylight, sunlight, overshadowing, light pollution, solar glare and daylight design; Royal Wharf (Ballymore); Masterplanning, EIA, daylight, sunlight, overshadowing, light pollution, solar glare and daylight design.
Water Quality, Hydrology, Flood Risk and Drainage	Dr Rob Murdock	RMA	20 years of experience	The Water Quality, Hydrology, Flood Risk and Drainage Technical Lead is the Director at RMA Environmental Ltd and has more than 20 years experience in environmental research and consultancy, specialising in environmental planning and water resources. Recent project experience includes: Kennett Garden Village EIA in Cambridgeshire; EIA for the Welborne development in Fareham, Hampshire; EIA for the Brook Green development in Braintree, Essex; and Environmental appraisals in support of a residential development in Lostwithiel Golf Club, Cornwall. Rob has the following qualifications: BSc and PhD
Townscape, and Visual Impact Assessment	Katy Neaves	Arc Landscape Design and Planning	19 years of experience	Katy Neaves is the author of the TVIA. As well as being an Urban Design Group Recognised Practitioner and a member of the Academy of Urbanism, she is a chartered member of the Landscape Institute and therefore complies with its associated Code of Conduct. This ensures that she only undertakes work for which she is able to provide proper professional and technical competence, and resources and requires that she maintains her professional competence in areas relevant to her work. She has worked in the private sector for over 19 years and her experience to date has included producing townscape and landscape, visual impact assessments as part of the EIA process for a range of proposals including large-scale urban extensions, tall buildings within opportunity areas and major town centre retail developments. She follows the GLVIA3 in preparing the townscape character and visual assessment. Based on best practice, such assessments are tailored to meet specific site circumstances and ensure that the effects of new development on townscape characteristics and visibility are considered.
Ecology	Demian Lyle	The Ecology Consultancy	Over 10 years experience	Demian Lyle BSc MSc DIC MCIEEM is an ecologist with over ten years' experience. He has a strong understanding of Ecological Impact Assessment and Habitats Regulations Assessment. His particular strength is in improving technical standards, especially in report writing and review, coupled with an ability to manage a high turnover of diverse project types. With a protected species specialism in reptiles, he is the reptile species lead for The Ecology Consultancy, technical lead for reptiles on HS2 Phase 2B Lot 1 and has delivered training for CIEEM. He also sits on CIRIA's Biodiversity Interest Group panel.

Annex 3: EIA Scoping Report and Woking Borough Council's EIA Scoping Opinion



Cardinal Court EIA Scoping Report

Prepared for:
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Date:
April 2019

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INTRODUCTION

1. Goldev Woking Ltd (hereinafter referred to as the 'Applicant') is seeking detailed planning permission for the proposed redevelopment of an area of land in Woking, in the north-west of Surrey (hereafter referred to as the 'site').
2. The site covers a total area of approximately 5 hectares (ha) and falls within the administrative boundary of the Borough of Woking. The site is located approximately 1.2 kilometres (km) to the south of Woking Town Centre.
3. The site is currently occupied by a football stadium (Woking Football Club); a collection of large-footprint low-rise buildings, including the Woking Snooker Centre, David Lloyd facilities (including tennis courts); car parking; and a small number of residential properties situated in the north of the site.
4. The site is bounded to the:
 - North by a row of trees, followed by Kingsfield Road, residential properties and Hoe Stream;
 - East by a thick row of trees, followed by residential properties and Kingfield Green, which includes open green space and a small body of water;
 - South by a row of trees and footpath, followed by Loop Road Sports Field and Old Wokingians Football Club; and
 - West by Westfield Avenue, a substantial group of trees and residential properties.
5. The site location and the indicative redline planning application boundary are presented in Figure 1 and Figure 2 respectively.

Figure 1 Site Location Plan

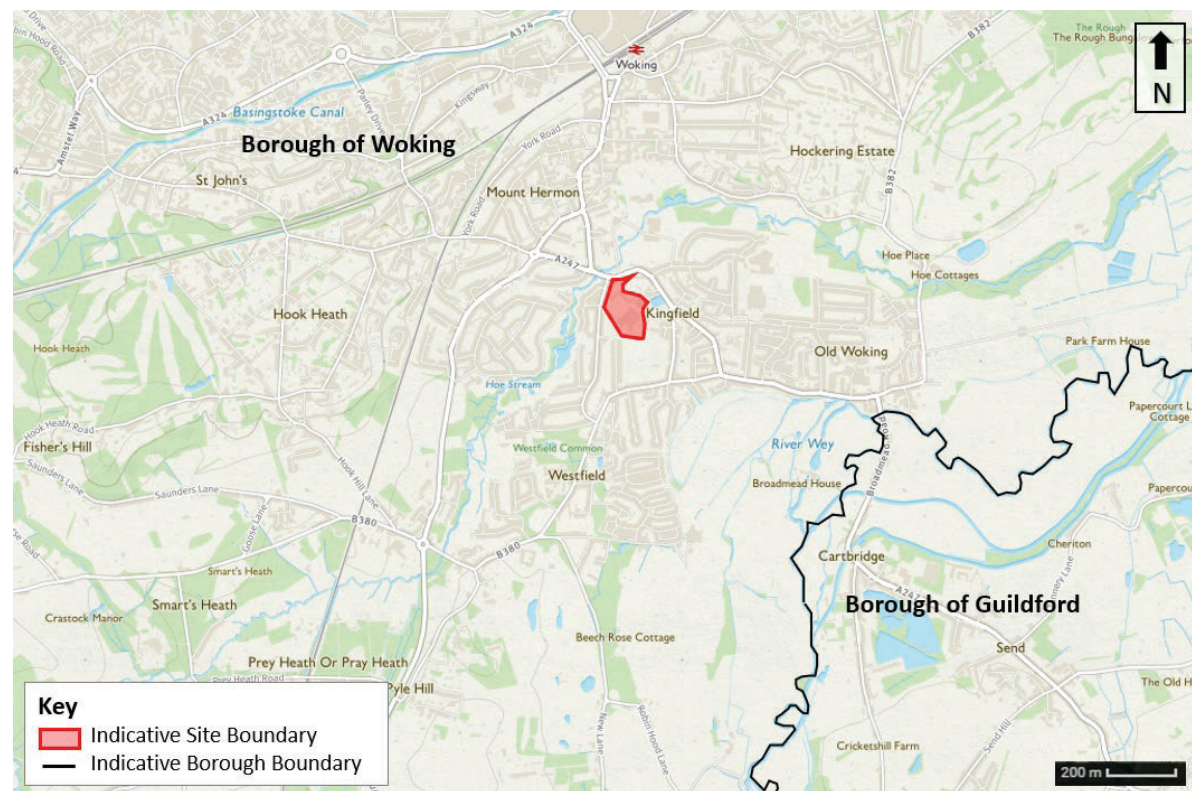


Figure 2 Indicative Redline Planning Application Boundary



6. The scheme proposals for the site (hereafter referred to as the 'Proposed Development') include the demolition of the existing buildings and structures on-site, followed by the construction of a new football stadium and five building 'blocks' of up to ten storeys in height, providing residential dwellings. The Proposed Development will provide up to 1,250 residential units and approximately 2,500 square metres (m²) of retail space, with associated car parking and landscaping. Three of the residential building blocks will be situated along the western side of the site, with the two remaining residential building blocks located along the southern side of the site; the football stadium will occupy the remainder

of the site. The associated landscaping will be situated throughout the site, at ground and roof levels. Car parking will be provided within a single level basement.

Defining the 'Environmental Impact Assessment' (EIA) Project

7. Taking into account the scale of the redevelopment and the nature of the site and surrounding area (primarily of residential use), it is considered that there is the potential for significant environmental effects to arise. The Proposed Development is therefore considered to constitute 'EIA development' under the EIA Regulations, and so an Environmental Statement (ES) will be prepared and submitted in support of the planning application. No EIA Screening Opinion has been sought from Woking Borough Council (WBC), as it has been concluded that an EIA is required, and an ES will be prepared and submitted.

Use of Competent Experts

8. Trium Environmental Consulting LLP (Trium) has been commissioned by the Applicant to prepare an EIA Scoping Opinion Request for the redevelopment of the site, in line with the requirements of the EIA Regulations and relevant EIA guidance. This includes submitting an EIA Scoping Opinion Request Report (hereafter referred to as the 'Scoping Report') to WBC that sets out the proposed scope of the EIA and the content, and approach, to preparing the ES that will be submitted to accompany the detailed planning application.
9. The EIA Regulations require that in order to ensure the completeness and quality of the ES '*(a) the developer must ensure that the environmental statement is prepared by competent experts;*' and '*(b) the environmental statement must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts.*' Trium considers that these requirements are equally important and relevant to the EIA scoping process, in addition to the preparation of the ES. As such, in accordance with this requirement, the following statement is provided:
- "Trium is an environmental consultancy specialising in urban regeneration and property development projects in the UK, with a specific focus in London. Trium's Partners and Employees have extensive experience in managing the environmental issues and impacts surrounding large scale, high profile urban regeneration development projects. The Partners and Employees of Trium have, over the course of their careers to date (including with former employers), project directed, managed or contributed to over 250 EIAs within the retail, residential, leisure, commercial, cultural, infrastructure and industrial sectors."
10. Information on Trium's lead partner, project manager, and each technical sub-consultant will be appended to the ES.

Structure of the EIA Scoping Report

11. This Scoping Report is structured as follows and provides:
- A summary of the EIA purpose and process, including EIA Scoping;
 - A description of the location of the site and the site's environmental context;
 - An overview of the Proposed Development;
 - A description of potential environmental sensitivities and receptors;
 - An outline of the planning policy context;
 - A description of the EIA process and methodology;
 - A summary of the terminology used for, and approach to, determining effect significance;
 - A summary of the proposed scope of the EIA;

- A description of the environmental topic areas that are considered to potentially result in significant effects on the environment, including a description of the potential environmental sensitivities and receptors, and an explanation of the proposed scope of assessment that will be undertaken;
- A description of the environmental topic areas that are considered unlikely to result in significant environmental effects, and are therefore scoped out of the EIA;
- Confirmation of the proposed structure of the ES; and
- The request for an EIA Scoping Opinion.

EIA AND THE SCOPING PROCESS

EIA Purpose and Process

12. EIA is a process carried out which examines available environmental information to ensure that the likely significant environmental effects of certain projects are identified and assessed before a decision is taken on whether a project is granted planning permission. This means environmental issues can be identified at an early stage and projects can then be designed to avoid or to minimise significant environmental effects, and appropriate mitigation and monitoring can be put in place.
13. Regulation 4 of the EIA Regulations sets out the EIA process. Specifically, Regulation 4(2) states that *“the EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors:*
 - (a) *population and human health;*
 - (b) *biodiversity;*
 - (c) *land, soil, water, air and climate;*
 - (d) *Material assets, cultural heritage and the landscape;*
 - (e) *The interaction between the factors referred to in sub-paragraphs (a) to (d).”*
14. The potential for likely significant effects on the aforementioned factors, during both the demolition and construction works associated with the Proposed Development, and once the Proposed Development is complete and operational, is considered within the following relevant environmental topics addressed within this Scoping Report:
 - Socio-Economics;
 - Health;
 - Highways and Transport;
 - Air Quality;
 - Noise and Vibration;
 - Wind Microclimate;
 - Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare;
 - Townscape and Visual;
 - Archaeology (Buried Heritage);
 - Built Heritage
 - Geo-environmental (Land Contamination, Ground Conditions and Groundwater);
 - Water Resources, Drainage and Flood Risk;
 - Ecology;
 - TV and Radio Interference;
 - Waste and Recycling; and
 - Climate Change.
15. The method behind the EIA process generally¹ takes into account the existing conditions of the area

¹ There may be exceptions to the general approach described. Where there are exceptions, this will be clearly described within

into which a development is being introduced (*the baseline*) and makes reasonable predictions of the likely change (*the impact* – in terms of magnitude) that may occur, during both its construction and when the development is completed and operating as proposed. The predicted impact is considered in terms of key environmental and social aspects (*receptor / resource*) found within the surrounding area, and based on their sensitivity to change, the resulting change experienced by the receptor / resource (*the effect*) is then determined. Any mitigation measures required in order to reduce or eliminate adverse effects are then considered and assessed, with the resulting effect being determined as significant or not (*residual effect*). The likely significant effects are then reported (within an *environmental statement*) for consideration by the relevant planning authority when considering whether to grant planning permission for a development.

The Scoping Process

16. EIA Scoping forms one of the first stages of the EIA process. Requesting an EIA Scoping Opinion from a local planning authority, under Regulation 15 of the EIA Regulations, involves the preparation of an EIA Scoping Report and its submission to the local planning authority, which is part of a formal request for the local planning authority’s opinion on the content or ‘scope’ and approach to the EIA.
17. The purpose of scoping is to identify:
 - The important environmental issues and topics for consideration in the EIA;
 - The baseline conditions and methodology to be used for assessment;
 - Any potentially sensitive receptors that may be affected by the development being proposed;
 - The appropriate space boundaries of the EIA: the site boundary and surrounding environmental context;
 - The information necessary for decision-making; and
 - The potential significant effects which are likely to result from the Proposed Development, during both its demolition and construction, and once its completed and operational.
18. The process of consultation is a key requirement of the EIA process and the views of statutory consultees and other stakeholders help to identify specific issues, as well as identifying additional information in their possession, or of which they have knowledge, which may be of assistance in progressing the EIA.
19. The ES will append this Scoping Report and the Scoping Opinion, and include a summary of any other consultation undertaken as part of the EIA process.

the relevant methodology section, outlining both the departure from the general EIA methodology and the description of the alternative approach. This is discussed further within the ‘EIA Process and Methodology’ section of this Scoping Report.

SITE CONTEXT AND PROPOSED DEVELOPMENT

Site Location and Description

20. The site covers a total area of approximately 5ha in size and is centred around National Grid Reference (NGR): TQ 00560 573330. The site is bounded to the:
 - North by a row of trees, followed by Kingsfield Road, residential properties and Hoe Stream;
 - East by a thick row of trees, followed by residential properties and Kingfield Green, which includes open green space and a small body of water;
 - South by a row of trees and footpath, followed by Loop Road Sports Field and Old Wokingians Football Club; and
 - West by Westfield Avenue, a substantial group of trees and residential properties.
21. As previously noted, the site is occupied by a football stadium (Woking Football Club, as shown in Figure 3); a collection of large-footprint low-rise buildings, including the Woking Snooker Centre, David Lloyd facilities (including tennis courts); car parking; and a small number of residential properties situated in the north of the site. The site has an approximate 50:50 split between the hardstanding and green surfaces (i.e. the football pitch, trees and soft landscaping) of the site.

Figure 3 View of the Existing Site from the North, looking South [image taken from Google Map (April 2018)]



22. The primary entrance points (for both vehicles and pedestrians) are from Westfield Avenue and Kingfield Road, from the west and north of the site respectively.
23. There are no statutory designations or listed buildings, conservation areas, scheduled ancient monuments of world heritage sites that fall within the site. The site is not located within a Conservation Area.
24. The site has good transport links and is well connected, being 1.2km south of Woking Station, which provides direct services to London Waterloo Station within 25 minutes. The site is also situated approximately 30 minutes away from London Heathrow Airport by car, and is easily accessible from the

M3 and M25 motorways. Several bus routes are located within an approximate 10-minute walk from the site, including (but not limited to) the No. 73, No. 134, No. 446, No. 462, No. 463, No. 690 and No. 856 bus routes.

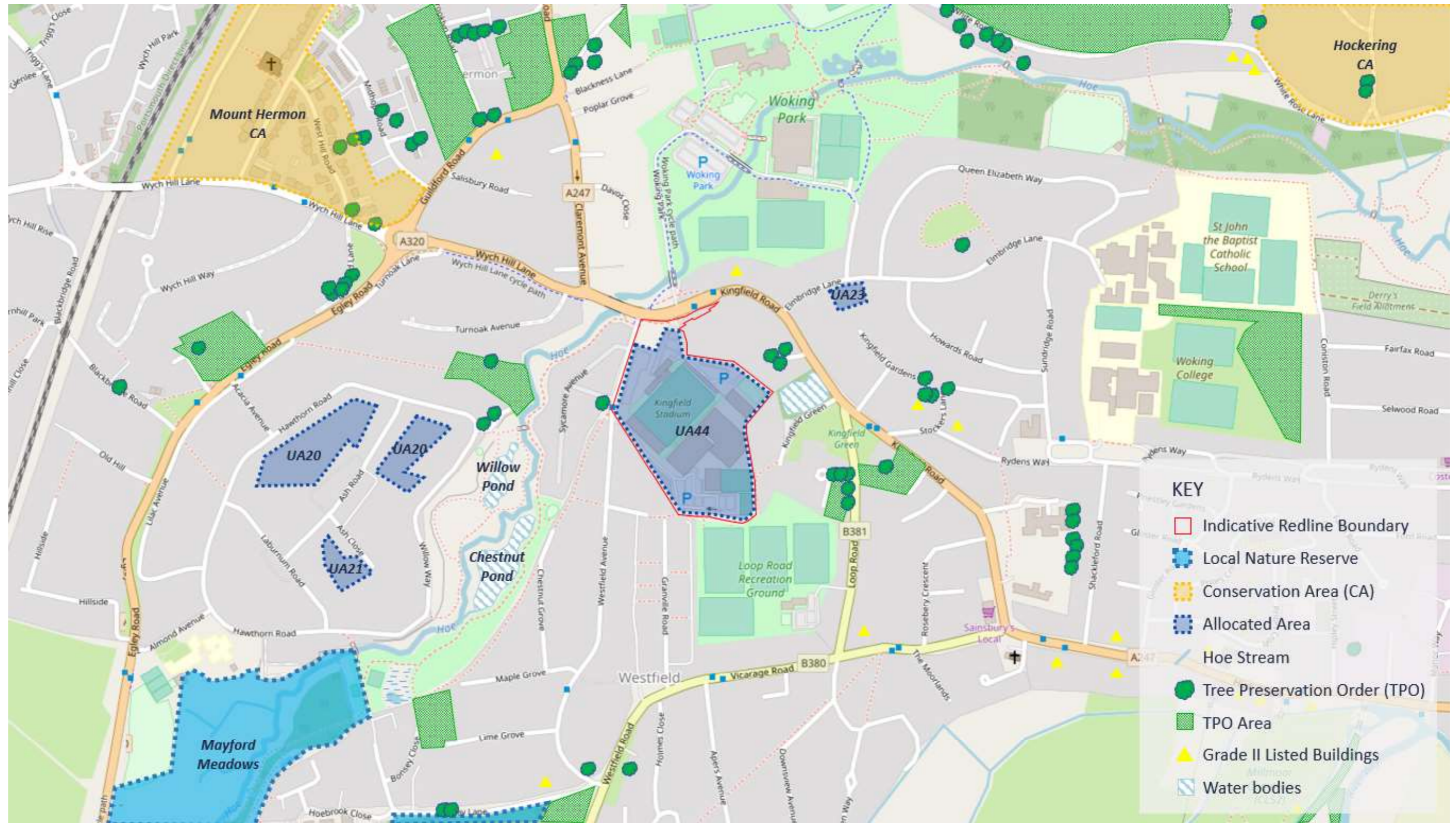
25. The site is not located within an Air Quality Management Area (AQMA).
26. The site is situated within an area with a low probability of flooding (Flood Zone 1), but is located to the south-east of the Hoe Stream which is located within Flood Zone 3. The site is situated approximately 16 metres (m) to the south-east of Flood Zone 3 and approximately 20m to the south-east of Flood Zone 2. The site is not located within a Nitrate Vulnerable Zone (NVZ), which is a designated area of land that drains into nitrate polluted waters or waters which could become polluted by nitrates.
27. The superficial deposits underlying the site include sand and gravel (Kempton Park Gravel Member) and bedrock comprising London Clay Formation (Clay, Silt and Sand). The site does not lie within a groundwater Source Protection Zone (SPZ), which is an area of land protected for its source of groundwater, such as wells, boreholes and springs used for public drinking water supply.

Surrounding Environmental Context

28. The local area is predominantly comprised of residential dwellings, open spaces and waterbodies (such as Chestnut Pond and Willow Pond). Commercial and retail uses becoming more prominent further to the north of the site, where Woking town centre and Woking Station are located (approximately 1.2km to the north of the site).
29. The immediate surrounding buildings of the site are predominantly of 2-3 storeys in height, with some 4-5 storeys buildings, whereas Woking town centre is characterised by a number of tall buildings up to 20 storeys high, including (but not limited to) Guildford Road Apartments, Station Approach Apartments, Guildford Road New Development and Bridgewater Place, Victoria Way.
30. WBC have designated two areas within the borough as Air Quality Management Areas (AQMA), the closest AQMA is located approximately 550m to the north of the site. The AQMA encompasses a section of Guildford Road and was declared in 2017 for exceedances of nitrogen dioxide (NO₂).
31. A number of listed buildings / structures are located within the surrounding environment of the site. These include:
 - Elmbridge Cottage (Grade II listed and situated approximately 120m to the north-east of the site);
 - Howard's Farm (Grade II listed and located approximately 240m to the east of the site); and
 - Old Oak Cottage (Grade II listed, located approximately 260m to the south-east of the site).
32. The closest Conservation Area to the site is the Mount Hermon Conservation Area, located approximately 430m to the west of the site.
33. Woking Common (a Site of Local Importance for Nature Conservation (SLINC)) is located approximately 600m to the south-west of the site. Additionally, there are areas of Urban Open Space located directly to the north and to the east of the site.
34. The draft Site Allocations Development Plan Document (DPD)² allocates the site for use as a football stadium and associated facilities, residential uses including affordable housing and commercial retail uses.

² WBC, (2018); Woking Local Development Documents – Site Allocations Development Plan Document (Regulation 19 Consultation)

Figure 4 Site Context Map



Overview of the Proposed Development

35. The Proposed Development would provide:
 - A redeveloped 10,001 capacity football stadium;
 - Approximately 2,500 m² of retail (A1-A5) space;
 - Up to 1,250 residential units including affordable housing (C3); and
 - A semi-submersed area below each residential building, to accommodate car parking, cycle stores, refuse stores and plant. This will provide up to 650 car parking spaces, along with approximately 1,250 cycle spaces.
36. The football stadium would comprise four stands providing the abovementioned 10,001 seats and reach a height of approximately 17m AOD. Additional space associated with the stadium would also be provided, including storage, retail and commercial floorspace.
37. The residential element of the Proposed Development would be arranged as a series of 5 buildings: Blocks 1 to 5. The heights of each building would vary, ranging from 2 storeys in height (9m AOD) to 10 storeys in height (34.5m AOD), with the tallest components of the scheme located towards the centre of the site and the new main street).
38. High quality public realm, along with hard and soft landscaping, will be incorporated throughout the ground floor and on roof terraces (where possible and practicable), and the ground floor space between buildings would accommodate a mix of public and private areas, ensuring that each 'block' has its own private amenity space. New streets would also be created, including a new major north-south link that will begin from Kingfield Road (located along the northern boundary of the site) and lead to the south of the site, terminated by a focal building.
39. It is anticipated that the demolition and construction of the Proposed Development would be undertaken in phases, and could result in some blocks being occupied during the construction of others. It is expected that the redeveloped stadium would not be operational until after the completion of residential elements. The phasing of the construction of the Proposed Development and any newly introduced sensitive receptors will be considered as part of the ES.

Potential Sensitive Receptors

40. When undertaking an EIA, it is important to identify potential receptors which may be impacted by the Proposed Development and may need to be considered as part of the assessment.
41. Potentially sensitive receptors are discussed within the scope of each technical topic in this Scoping Report and have been identified from a review of information available at the time of writing, the description of the Proposed Development, and resultant effects which may occur as a result of the site's redevelopment.
42. The sensitive receptors outlined within the technical scopes of this Scoping Report have been identified at the time of writing as part of the EIA scoping process; however, these will be reviewed during preparation of the ES and may be subject to change.

PLANNING POLICY CONTEXT

43. The ES (within *ES Volume 1, Chapter 1: Introduction* and *ES Volume 1, Chapter 2: EIA Methodology*), will define the relevant national, regional and local policy context. Specifically, the ES will list out the key relevant policy documents but will not discuss the policies within these in any detail.
44. Although relevant policies out of the key planning policy documents will, in some instances, inform the scope and the methodology of the technical assessments within the EIA, the Proposed Development's compliance with and performance against the relevant planning policies will be appraised within the Planning Statement which will be a standalone document that is submitted in support of the planning application. It is not the purpose of the ES to appraise the Proposed Development against relevant national, regional and local planning policy standards / targets.
45. Where planning policy informs the scope and the methodology of the technical assessments of the EIA, the policies will be presented in the ES (in the relevant technical topic chapters) and discussed as necessary. Any policy detail required to support the relevant impact assessment scope, methodology or assessment of effects, will either be provided within the technical topic chapter itself or within an appendix to the ES.

National Planning Policy and Guidance

46. The EIA will be undertaken having regard to the National Planning Policy Framework (NPPF)³. The NPPF sets out the Government's economic, environmental and social planning policies for England. The policies contained within the NPPF articulate the Government's vision of sustainable development, which are intended to be interpreted at a local level, to meet the requirements of local aspirations.
47. As relevant to the EIA, specifically to the scope, methodology and assessment of effects for the EIA technical topics, the NPPF shall be considered throughout undertaking of the EIA and preparation of the ES.
48. The EIA will also refer to, as relevant to the EIA technical topics, the Planning Practice Guidance (PPG)⁴, which is an online resource. The PPG aims to make planning guidance more accessible, and to ensure that the guidance is kept up to date.

Strategic and Local Planning Policy and Guidance

49. At a strategic level, Surrey County Council (SCC) refer to the relevant Local Plans and Development Plan Documents produced by each borough; therefore, as relevant to the EIA technical topic scope, methodology or assessment of effects, the ES will have regard to key local planning policy and guidance documents.
50. The current local planning framework for WBC comprises:
 - Woking Core Strategy (2012)⁵;
 - Development Management Policies Development Plan Document (DPD) (2016)⁶;
 - Draft Site Allocations DPD (2018)⁷; and

³ Ministry of Housing, Communities & Local Government, (2019); National Planning Policy Framework.

⁴ <https://www.gov.uk/government/collections/planning-practice-guidance>

⁵ WBC, (2012); Woking Local Development Documents – Woking Core Strategy.

⁶ WBC, (2016); Woking Local Development Documents – Development Management Policies Development Plan Document.

⁷ WBC, (2018); Woking Local Development Documents – Site Allocations Development Plan Document (Regulation 19 Consultation).

- Proposals Map (2016)⁸.

51. The Woking Core Strategy sets out WBC's overall approach to managing development and change within the borough, including the policies that will be used to direct development and determine applications for planning permission. The local planning policy framework also comprises relevant Supplementary Planning Documents (SPDs) and Supplementary Planning Guidance (SPGs) which provide further guidance to the policies within the Woking Core Strategy.

Other Guidance

52. In addition to any relevant planning policies that inform the scope, methodology or assessment of effects, as relevant, the technical topic chapters of the ES and relevant appendices will present a summary of any pertinent recognised industry guidance documents.

⁸ WBC, (2016); Woking Local Development Document – Proposals Map.

EIA METHODOLOGY

EIA Methodology and Approach to Assessment of the Proposed Development

53. The EIA will be undertaken with regard relevant best practice guidance, including (but not limited to):
- England and Wales: Online Planning Practice Guidance⁹;
 - IEMA: Guidelines for Environmental Impact Assessment (2004)¹⁰;
 - IEMA: Delivering Proportionate EIA (2017); and
 - Any applicable case law.
54. In accordance with the EIA Regulations and best practice guidance documents, the EIA will comprise an assessment for each of the relevant technical topics against an appropriate baseline condition of the site and surrounding area, using methods of prediction including established standards and industry guidelines and techniques confirmed as part of the EIA Scoping process. In all cases, the source data and guidance used to establish the baseline conditions and assessment methodology will be clearly set out within the ES.

Baseline Conditions

55. Baseline assessments will utilise any existing and available information, as well as new information either collected through baseline surveys undertaken during the course of the EIA process or additional information provided as part of the EIA Scoping Opinion and consultation process. This information will be used to present, within each individual technical chapter of the ES, an up to date description of the current baseline conditions of the site and surrounding area.
56. In most cases, the baseline represents the existing baseline conditions i.e. the environmental conditions of the site and surrounding area at the time of the assessment (i.e. in the assessment year of 2019). However, certain topics may require the use of annualised data (e.g. air quality, where a data set is from the preceding year) or model assumptions to define the baseline conditions. This is particularly relevant to the assessment of effects relating to road traffic, specifically highways, air quality and noise effects. In all cases, the source of the baseline data and the justification for its use will be clearly described within the ES.
57. For the purposes of highways and transport, air quality, and noise & vibration, a future baseline (e.g. future road traffic flows, which in turn affect the future air quality or future noise levels) will also be considered to determine the effect of the Proposed Development once completed and operational.

Likely Evolution of the Baseline Conditions

58. As per the requirements of the EIA Regulations, consideration as to how the existing baseline conditions may evolve in the future in the absence of the Proposed Development will be presented in the ES (within the individual technical chapters as relevant). An outline of the proposed approach adopted in the ES will be described within **ES Volume 1, Chapter 2: EIA Methodology**. The likely evolution of the baseline conditions in the absence of the Proposed Development will be quantified where possible, and where it is not possible, a qualitative review will be presented.

Demolition and Construction

59. The ES (within **ES Volume 1, Chapter 5: Demolition and Construction**) will provide an outline of the anticipated demolition and construction programme and related activities and aspects. This will include

⁹ Planning practice guidance available at: <https://www.gov.uk/government/collections/planning-practice-guidance>

¹⁰ The Institute of Environmental Management and Assessment publishes guidance on environmental impact assessment, available at: <https://www.iema.net/>

demolition and enabling works, substructure works, superstructure works, demolition waste volumes and construction material quantities, heavy goods vehicle (HGV) movements and HGV routing. In addition, key environmental controls and management measures relevant to the Proposed Development (including relevant codes of construction practice) will be presented.

60. This information will inform the demolition and construction impact assessments. Throughout the demolition and construction impact assessments, the assumption will be made that the standard environmental controls required under legislation and best practice guidance are met as a matter of course.
61. The assessment of the potential for likely significant effects arising during the demolition and construction works will be addressed within each of the individual technical assessment chapters of the ES and will assess against the defined baseline condition (as described earlier). The demolition and construction assessments presented within the technical chapters of the ES will identify the need for any additional or bespoke environmental management or mitigation measures in order to avoid, prevent, reduce or off-set any significant adverse effects identified.
62. Where required, a description of any proposed monitoring arrangements will also be presented and would define (where appropriate) the procedures regarding the monitoring of the relevant significant adverse effects, the types of parameters to be monitored and the monitoring duration.
63. All the measures proposed within the technical chapters will be compiled and presented in a mitigation and monitoring schedule which will be presented as a separate chapter within the ES.
64. It is anticipated that any required demolition and construction related environmental management / mitigation and monitoring measures would be secured and controlled through an appropriate Construction Environmental Management Plan (CEMP) (or equivalent) and it is proposed that the requirement for these documents be secured by means of suitably worded planning conditions to be attached to the permissions (if granted). Key mitigation and management controls that would later form part of a CEMP will be presented in the ES to help define the policies, procedures and management framework for the implementation of any identified specific environmental management and mitigation controls and monitoring.

Completed and Operational Development

65. The ES will present a description of the Proposed Development in order to provide suitable context to enable the assessment of potential and likely significant environmental effects. Sufficient information on the Proposed Development, in terms of the key aspects, will be presented to allow an understanding of the development being proposed, in order to enable the assessment of potential and likely significant environmental effects of the completed and operational development.
66. Any assumptions made will be clearly presented within the ES.

Climate Change

67. A requirement of the EIA Regulations is to consider climate as part of the EIA process. The EIA Regulations seek to account for climate by requiring a description of 'the vulnerability of the project to climate change' (Schedule 4, paragraph 5(f)).

The Potential Impact of the Proposed Development on Climate Change

68. The approach to assessing the potential impact of the Proposed Development on climate will be undertaken in accordance with the IEMA guidance 'Assessing Greenhouse Gas Emissions and Evaluating Their Significance' (2017). This guidance sets out a 'good practice' approach to achieving a proportionate assessment of a development's potential impact on climate and communicating the results in terms of a notional percentage contribution relative to a carbon budget, together with

appropriate mitigation.

69. The guidance presents a series of principles developed by IEMA, which highlight that all greenhouse gas (GHG) emissions contribute to climate change, and that the combined effect of all emissions draws us closer to the scientifically defined environmental limit for climate change. The guidance therefore suggests that, in the absence of any defined threshold or significance criteria, any GHG emissions or reductions from a development be considered as significant. The guidance also reinforces a key principle of EIA which is to reduce the impact of a development's emissions through mitigation.
70. Consistent with the guidance, the approach taken in the EIA will be to adopt the conclusion that the GHG emissions of the Proposed Development are significant. On this basis, it is considered unnecessary to incorporate a Climate Change chapter assessing significance of impacts within the ES and, instead, it is proposed to append a standalone technical report on this issue. The purpose of this report will be to quantify the net GHG emissions from the Proposed Development and compare against an existing carbon budget (defined either at a global, national, regional, local or sectoral level), in order to contextualise the Proposed Development's carbon contribution by developing a sense of the scale of the emissions anticipated.
71. The report and the ES itself will present the carbon mitigation being proposed, which will follow the principles of the carbon management hierarchy (i.e. avoid, reduce, off-set), in order to reduce as far as reasonably practicable, the anticipated GHG emissions of the Proposed Development.
72. The assessment of GHG emissions (essentially a carbon footprint or 'inventory' of the Proposed Development) and an outline of the carbon mitigation measures proposed will be included within ES Volume 3. Relevant information out of this report (specifically relating to carbon mitigation measures) will be presented within the ES (**ES Volume 1, Chapter 4: The Proposed Development** and **ES Volume 1, Chapter 5: Demolition and Construction**).
- The Potential Impact of Climate Change on the Proposed Development*
73. The approach to assessing the potential impact will be undertaken in accordance with the IEMA guidance 'Climate Change Resilience and Adaption' (2015)', which presents a framework for the consideration of climate change resilience and adaption in the EIA process. It recognises a need for a proportionate approach to the assessment, due to the uncertainties associated with predicting how the environment will respond to climate change.
74. The guidance advises defining the future climate scenario, the integration of climate change adaptation into the design, and the process for EIA, amongst other things. The guidance also provides advice on the execution of the impact assessment across the technical topics, including the identification of the climate related parameters which are likely to influence the project in question, and the anticipated changes to those parameters under a future climate scenario.
75. Consistent with the guidance, the EIA will describe a future climate scenario which will be developed through the use of the future climate projections published by the Met Office (through the UK Climate Projections (UKCP18) website). The results include projections for variables including annual mean temperatures, and annual changes in summer and winter precipitation.
76. The future climate change scenario will be considered within the ES across each of the technical topics being presented, and the level of assessment and methodology will be proportional to the available evidence base. The aim of the assessment will be to consider whether the effect on receptors (under the current condition, without climate change) are likely to be different under an alternative future climate regime, in particular, to identify whether the potential impacts of the Proposed Development will be worse or improve under the future baseline and, therefore, if these changes alter the significance of effects identified for the Proposed Development under the current condition (without climate change).

A key aspect of the assessment (within each of the technical topics presented) will be to identify the likely effect of those receptors considered more vulnerable to changes in climate, having taken into account the resilience and adaptive measures (being either design or management) which are recommended for the Proposed Development, in order to mitigate the risk presented by climate change.

77. Due to the level of uncertainty in both the future climate projections and how the future climate conditions may affect sensitive receptors, the assessment will be qualitative, based on objective professional judgement, unless where there is published, accepted quantifiable methods available (i.e. in relation to the assessment of flood risk).
78. The ES will present the adaption and resilience measures proposed as part of the description of the Proposed Development (**ES Volume 1, Chapter 4: The Proposed Development**).

Cumulative Effects and Effect Interactions

79. The EIA will identify the potential for (a) Cumulative Effects and (b) Effect Interactions which are described below.

Cumulative Effects

80. The EIA Regulations require that, in assessing the effects of a particular development proposal, consideration should also be given to the likely significant effects arising from the "cumulation with other existing and/or approved projects" (Schedule 4, 5(e)).
81. Cumulative effects can occur as interactions between the effects associated with several projects in an area (i.e. Committed Developments) which may, on an individual basis be insignificant, but together (i.e. cumulatively), result in a significant effect. Cumulative effects arising from the Proposed Development in combination with identified Committed Developments will be considered throughout the ES. The potential for cumulative effects arising during the demolition and construction works and once the Proposed Development is completed and operational will be considered. Each individual technical chapter of the ES will present an assessment of the cumulative effects of the Proposed Development coming forward alongside the Committed Developments.
82. The Committed Developments that will be considered within the ES will typically be located within a 1km radius from the site, as this spatial extent is considered appropriate for determining cumulative effects in this context.
83. It is acknowledged that for certain topics of the EIA (specifically townscape and visual), there is a need to consider more distant schemes within the cumulative effects assessment. This is entirely appropriate, given the view locations associated with the townscape and visual effects assessment.
84. With regards to traffic and transport considerations, major schemes beyond the 1km radius may also be included within the future baseline to acknowledge the spatial connection with the Proposed Development via the local road network. It should be noted that the approach to the assessment of cumulative effects is synonymous with the impact assessment methodology by virtue of the fact that deriving a future road traffic baseline would account for road traffic movements associated with the Committed Developments as background road traffic growth, many of which are likely to be more than 1km distant on the road network from the site. This approach is entirely appropriate, given the potential for wider reaching traffic and transport impacts through the highway network.
85. Generally, the schemes to be included within the cumulative effects assessment will either have:
- Full planning consent or a resolution to grant consent; and
 - Produce an **uplift of more than 10,000 m²** (Gross External Area (GEA)) of mixed-use floorspace, or

- Provide **over 150 residential units**.
86. These parameters have been set to allow all the schemes coming forward (i.e. within the planning system) within the area of the site to be subject to an initial screening exercise to determine the schemes that, based on the scale of redevelopment (amount and mix of uses), could potentially have a cumulative effect with the Proposed Development and should be considered further within the cumulative effects assessment of the EIA.
 87. By applying these parameters to all the schemes coming forward, the cumulative effects assessment of the EIA becomes more focused on the larger schemes (i.e. those with the potential to interact in a cumulative manner), rather than trying to assess all, including the smaller, domestic applications such as loft and garage conversions and changes of use.
 88. A preliminary search of Committed Developments for consideration within the EIA has been undertaken by the project's Planning Consultants and it has been determined that there are no Committed Developments within a 1km radius of the site. Therefore, a cumulative effects assessment will not be undertaken as part of the EIA or presented within the ES, and Committed Developments and cumulative effects are not discussed further in this Scoping Report.
 89. It is acknowledged that for certain topics of the EIA (specifically townscape and visual), there is a need to consider more distant schemes within the cumulative effects assessment. This is entirely appropriate, given the view locations associated with the Townscape and Visual Impact Assessment (TVIA). However, in this case and with regards to major schemes beyond the 1km radius, a cumulative effects assessment will not be undertaken in relation to the townscape and visual impact assessment, as the guidelines¹¹ for assessing cumulative townscape and visual effects state that such assessments should be *"reasonable and in proportion to the nature of the project under consideration"*.
 90. Whilst there are a number of Committed Developments within Woking town centre (located just beyond the 1km radius of the TVIA's study area and spatial requirement for assessing cumulative effects) which include buildings of up to 34 storeys in height, it is considered that the effects of the Proposed Development would not be increased or extended when considered in cumulation with the Committed Developments in Woking town centre. This is due to the Proposed Development and Committed Developments falling within different townscape character areas and being of different urban typologies. Additionally, when considered visually, the Committed Developments will not visually interact with the Proposed Development as, when visible, the Committed Developments are viewed as part of the backdrop of the proposed representative views of the Proposed Development. Therefore, a cumulative effects assessment specifically relating to townscape and views will not be undertaken as part of the EIA or presented within the ES.
 91. It is acknowledged that there may be other Committed Developments that are at the pre-application stage or have been recently submitted for planning, but not yet determined by WBC, that may be significant enough to warrant consideration within the cumulative effects assessment. The requirement to include any specific Committed Developments that fall within this category should be identified by the WBC through the EIA Scoping Opinion. Should Committed Developments that are at the pre-application stage or that have been submitted for planning, but not yet determined be identified by the WBC for inclusion in a cumulative effects assessment, it should be acknowledged by the WBC that the ES will address these as far as is reasonably practicable and that the assessments will be based on the information available on these schemes that is within the public domain.

¹¹ The Landscape Institute and the Institute for Environmental Management and Assessment, (2013); Guidelines for Landscape and Visual Impact Assessment, 3rd Edition.

Effect Interactions

92. Effect interactions occur as interactions between effects associated with just one project, i.e. the combination of individual effects arising as a result of the Proposed Development. For example, effects relating to noise, airborne dust or traffic on a single receptor.
93. Effect interactions from the Proposed Development itself on particular receptors at the site and within the surrounds will be considered during the demolition and construction works and also once the Proposed Development is completed and operational. Dependent on the relevant sensitive receptors, the assessment will focus either on key individual receptors or on groups considered to be most sensitive to potential effect interactions. The potential interaction of residual effects that are of minor, moderate or major scale, will be considered within this assessment. Residual effects which are negligible, or neutral will be excluded from this assessment as by virtue of their definition, they are considered to be imperceptible.
94. Consideration of effect interactions will be presented within the ES in a separate chapter (i.e. **ES Volume 1, Chapter 12: Effect Interactions**).

Land Take and Soils

95. In relation to Regulation 4(2) of the EIA Regulations, consideration has been given to the potential for any effects arising, due to the Proposed Development, on 'Land Take' and 'Soils'.
96. With regards to 'Land Take', regeneration of the site will lead to a range of regional and localised economic benefits, specifically relating to investment and employment. In addition, the development of the site will provide significantly increased connectivity and aesthetic (visual) enhancements over the existing situation. The site is not a 'greenfield site' and it is not natural or semi-natural land that is being 'taken up' by urban development. In addition, the site does not represent open accessible space used as a recreational resource within an already built-up environment; the site is currently highly accessible, but there is an opportunity to enhance the existing football stadium and contribute to the delivery of housing. As a result, no likely significant adverse effects associated with 'Land Take' are anticipated as a result of the Proposed Development.
97. With regards to 'Soil', the Preliminary Risk Assessment (presented in Appendix A of this report) confirms that the potential contamination risks anticipated to arise as a result of the Proposed Development (during demolition and construction, and once completed and operational) are all considered to range from 'moderate risk' to 'low risk'.
98. In relation to potential contamination considered to be of 'moderate risk' or 'low risk' during demolition and construction works, it is anticipated that good practices (such as the implementation of a CEMP) will be implemented to ensure that the identified sensitive receptors are not affected. In terms of potential contamination considered to be of 'moderate risk' or 'low risk' once the Proposed Development is completed and operational, it is considered that mitigation measures will be incorporated by design (e.g. appropriately designed materials) to ensure that the identified sensitive receptors are not affected.
99. Following the implementation of appropriate mitigation measures (which would be secured by appropriate planning conditions in accordance with standard practice), no likely significant adverse effects associated with 'Soil' are anticipated to arise as a result of the Proposed Development.
100. Based on the above, land take and soil shall not be considered within the ES.

Project Vulnerability

101. With reference to Regulation 4(4) and Schedule 4 of the EIA Regulations, this Scoping Report also considers whether there are likely to be any significant effects on the environment or the project arising from the vulnerability of the Proposed Development to major accidents or disasters.

102. Available guidance (Institute of Environmental Management and Assessment (IEMA) Quality Mark Article 'Assessing the Risks of Major Accident and Disasters in EIA (WSP, 2016)¹²) defines major accidents and disasters as follows:

“man-made and natural events which are considered to be likely and are anticipated to result in substantial harm that the normal functioning of the project is unable to cope with/rectify”.

103. Based on the above definition, it is considered that the majority of large scale accidents and disasters (such as earthquakes, tsunamis, wars etc.) are not applicable to (i.e. likely for or relevant to) the Proposed Development. However, flood risk and fire risk are relevant to the Proposed Development and will be addressed within the planning application documents.
104. In terms of flood risk, the planning application will be accompanied by a Flood Risk Assessment (FRA). The FRA will review the potential sources of flooding that could affect the site, and how the identified sources of flooding can be minimised, mitigated or eliminated to reduce project vulnerability.
105. An assessment will be made of the impact of climate change on the flood risk categorisation of the site and how the Proposed Development has included measures to account for the potential impact of flood risk in the future.
106. Consideration has also been given to fire risk and whether this could constitute a major accident or disaster that could be considered likely and relevant to the Proposed Development. It has been concluded, however, that fire risk is managed outside of the EIA process through a combination of legislative and industry guidance which mitigate the risk of fire causing a major accident or disaster to new developments within the urban environment. Legislative requirements include the 'The Construction (Design Management) Regulations 2015'¹³, which provide guidance on fire safety requirements for new buildings, while requirements under the Building Regulations and associated guidance relate to the health and safety of people in and around buildings. Alternatively, compliance can also be achieved by adopting a fire engineered solution where the size and scale of the development necessitates bespoke measures to address the fire risks.
107. The effective implementation of the legislative tools and guidance is considered to reduce the risk of fire to an acceptable level whereby the occurrence is unlikely or, in the event of a fire, appropriate design and management measures are incorporated into a development to avoid the occurrence of a major accident or disaster.
108. Given the above, the consideration of fire risk in terms of causing a major accident or disaster will not be addressed further within the EIA, as the risk of occurrence will be managed during the post-consent technical design and construction phases, through a mix of legislative requirements and industry guidance which fall outside of the EIA process.

Alternatives Considered

109. Schedule 4 of the EIA Regulations require that the ES provides *“a description of the reasonable alternatives... relevant to the proposed project and its specific characteristics , and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects”.*
110. The ES will summarise the evolution of the Proposed Development, the alternatives considered, and key modifications made during the design process. Key environmental considerations which have influenced this process will be discussed, and where possible a qualitative comparison will be undertaken of the different design options and their relevant environmental effects. Matters that will be

¹² Institute of Environmental Management and Assessment (IEMA), (2016); Assessing the Risks of Major Accident and Disasters in EIA.

¹³ The Construction (Design Management) Regulations 2015.

considered in terms of design evolution include land uses, layout, building heights and massing.

DETERMINING EFFECT SIGNIFICANCE – TERMINOLOGY AND APPROACH

111. The process of an EIA is to identify, assess and report on the environmental or socio-economic effects of a development on the surrounding environment and whether they are significant or not. This assessment is a requirement identified by Schedule 4 of the EIA Regulations and is dependent on the assignment of a nature and scale to each effect.
112. The assignment of a scale to an effect is calculated by two things:
- The sensitivity of the receptor, and
 - The magnitude of the impact.
113. The following terminology is used to describe the sensitivity of receptors and magnitude of impact or change from the baseline conditions:
- High;
 - Medium;
 - Low; or
 - Negligible.
114. Where there is no impact / change, no assessment will be required due to there being no potential for an effect to occur.

Scale of Effect

115. The consideration of the sensitivity of a receptor and the magnitude of an impact will enable the scale of a potential effect to be determined. The scale of effects are described using the following terminology:
- Major – considerable effect (by extent, duration or magnitude) of more than local significance or in breach of recognised acceptability, legislation, policy or standards;
 - Moderate – limited effect (by extent, duration or magnitude), which may be important at a local scale;
 - Minor – slight, very short or highly localised effect; or
 - Negligible - imperceptible effects to an environmental resource or receptor.
116. Where there is not impact to a receptor and, therefore, no effect, this will be stated.

Nature of Effect

117. The following terminology is used to define the nature of the resultant effects from the above (see Appendix B for resultant effects matrix):
- Adverse – detrimental or negative effects to an environmental resource or receptor;
 - Neutral – quality of the environment is preserved/sustained (either where the effect is neither beneficial or adverse, or where there is an equal balance of adverse and beneficial effects); or
 - Beneficial – advantageous or positive effects to an environmental resource or receptor.
118. Where there is no impact to a receptor and therefore no effect, this will be stated.

Duration of Effect

119. For the purposes of the ES, effects that are generated as a result of the demolition and construction

works (i.e. those that last for this set period of time) will be classed as 'temporary'; these may be further classified as either 'short term' or 'medium-term' effects depending on the duration of the demolition and construction works that result in the effect in question. Effects that result from the completed and operational Proposed Development will be classed as 'permanent' or 'long-term' effects.

Geographic Extent of Effect

120. The geographic extent of environmental effects will be described as follows:

- Local level – on-site and within close proximity of the site;
- District level – within Woking;
- Regional level – Surrey; or
- National level – UK.

Direct and Indirect Effects

121. The ES will identify whether the effect is 'direct' (i.e. resulting without any intervening factors) or 'indirect' or 'secondary' (i.e. not directly caused or resulting from something else).

Establishing Effect Significance

122. In addition to establishing the scale and nature, duration and geographic extent of effects, the significance of effects will also be defined (i.e. significant or not significant).
123. The general rule to establishing effect significance is applied via the following:
- 'Moderate' or 'major' effects are deemed to be 'significant'.
 - 'Minor' effects are deemed to be 'not significant', although they may be a matter of local concern; and
 - 'Negligible' effects are considered to be 'not significant' and not a matter of local concern.
124. Where technical assessments differ to this approach, this will be stated.
125. Where mitigation measures are identified to either eliminate or reduce likely significant adverse effects, these will be incorporated into the ES, either through the design, or will be translated into demolition and construction commitments, or operational or managerial standards / procedures.
126. The ES will then highlight the 'residual' likely significant effects (those effects that remain after mitigation) and classifies these in accordance with the terminology defined above.
127. More information on assessing significance and terminology is presented in Appendix B of this scoping report and will be included within each technical chapter of the ES.

SCOPE SUMMARY

128. To assist the reader in an early understanding of what is proposed to be ‘scoped in’ and ‘scoped out’ of the EIA, Table 1 sets out the proposed scope of the ES.
129. Further detail on each topic is provided in the following technical sections of this request for an EIA Scoping Opinion.

Table 1 Proposed Scope of the ES

Environmental Topics	Demolition and Construction	Completed and Operational
Socio Economics	✓	✓
Health	✓	✓
Highways and Transport	✓	✓
Air Quality	✓ (although dependent on the number of traffic movements generated at this stage)	✓ (although dependent on the number of traffic movements generated / energy centre included)
Noise and Vibration	✓	✓ (apart from vibration, which has been scoped out, due to the site being located away from potential vibration sources)
Wind Microclimate	✓ (qualitatively)	✓
Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare	✓ (qualitatively)	✓
Townscape and Visual	✓	✓
Archaeology (Buried Heritage)	✗	✗
Built Heritage	✗	✗
Geo-environmental (Land Contamination, Ground Conditions and Groundwater)	✗	✗
Water Resources, Drainage and Flood Risk	✗	✗
Ecology	✗ (assuming the absence of bats from the site)	✗ (assuming the absence of bats from the site)
TV and Radio	✗	✗
Waste and Recycling	✗	✗
Climate Change	✓	✓

TOPICS WITH THE POTENTIAL FOR LIKELY SIGNIFICANT EFFECTS

Socio-Economics

130. A socio-economics assessment will be undertaken, to determine the potential effects of the Proposed Development on social and economic receptors. The socio-economics assessment will be completed by Volterra Partners.

Baseline Conditions

131. The baseline conditions for the site will be established with reference to a policy review and a desktop review. The policy review will provide an outline of the relevant local and regional, social and economic policies applicable to the site. Policies to be reviewed will include (but may not be limited to) the:

- The National Planning Policy Framework (NPPF, 2019);
- The South East Plan (May 2009);
- WBC’s Core Strategy (October 2012); and
- The WBC’s Development Management Policies Development Plan Document (DPD) (October 2016).

132. A desk top review will be undertaken of the existing social and economic conditions prevalent in the local area (including an assessment of existing employment within the site), in comparison with regional and local trends, utilising geographic information systems (GIS); available information relating to the site from current owners, occupiers, and from WBC; and published database records such as the Office for National Statistics (ONS) and NOMIS, to establish the existing baseline conditions.

133. The baseline policy review and desktop review will bring together the relevant information under three broad headings:

- Economic: employment, unemployment rates, industrial specialisation, occupational structure, and labour productivity;
- Demographic and social: population, age structure, household composition, residential qualifications, housing tenures, housing need, house prices, and deprivation; and
- Social infrastructure: education provision (early years, primary, secondary, tertiary), primary and secondary healthcare provision (including performance of St Peter’s Hospital – the nearest A&E), open and play space availability, leisure provision, and crime.

134. The assessment of the potential effects will be carried out against a baseline of existing socio-economic conditions prevailing in the area surrounding the site; however, as with any dataset, baseline conditions change over time. Therefore, the most recent published sources will be used in the socio-economics assessment: 2019 data will be used where possible but if this is unavailable, the next best alternative (e.g. the most up to date) will be used as a proxy. This will be clearly set out in the ES.

Sensitive Receptors

135. The sensitivity of receptors is dependent upon the evolved baseline conditions (i.e. the extent to which unemployment, skills deficit or social infrastructure issues etc. are present in an area and thus how many jobs, how much spending or how much infrastructure is needed in that area). It is not possible to ascribe specific ‘values’ or a quantifiable scale of ‘sensitivity’ to all socio-economic receptors, due to their diversity in nature and scale.

136. The socio-economic assessment will, therefore, focus on the qualitative “sensitivity” of each receptor and their ability to respond to change, based on recent rates of change and turnover. For example, very

high house prices and persistent under-delivery of housing or low skills would be deemed very sensitive receptors, as they represent very significant and persistent socio-economic problems in the context of the local environment. Whilst the sensitivity of each receptor may be defined qualitatively, wherever possible, this will be based upon quantitative evidence and the effects will be assessed quantitatively wherever possible (see next section for more detail).

137. Receptors are likely to include, but may not be limited to:

- Demolition and construction employment;
- Unemployment and employment;
- Local expenditure;
- Housing provision;
- Leisure provision;
- Food and beverage provision;
- Crime and deprivation;
- Education provision and skill levels;
- GP and A&E provision; and
- Open and play space provision.

Potential Effects

138. The socio-economic assessment will identify the effects which contribute toward meeting policy objectives as well as those that require mitigation. It will examine the following potential effects at the relevant geographic scale:

- Demolition and Construction:
 - Demolition and construction employment;
 - Local spend by the demolition and construction workforce;
- Completed and Operational Proposed Development:
 - Operational employment opportunities, and resulting indirect and induced employment;
 - Expenditure and revenue generated by employees and visitors;
 - Contribution towards leisure provision;
 - Impacts upon housing targets, along with associated population accommodated by the proposed residential development;
 - Residential spending and associated indirect employment;
 - Impacts upon health provision (GP and A&E);
 - Impacts upon crime and deprivation;
 - Impacts upon the demand for school places; and
 - Impacts upon open and play space.

Scope of Assessment

139. The socio-economics assessment will address:

- **Demolition and Construction Effects:** The purpose of this assessment is to define the likely effects on receptors because of the demolition and construction works associated with the Proposed Development. As relevant, the assessment will consider existing sensitive receptors (i.e. those prevalent within the 2019 present day baseline conditions) and any additional sensitive receptors that could be prevalent within the surrounding area between 2019 and the proposed opening year; and
- **Completed and Operational Effects:** Assessment of the socio-economic effects of the completed and operational Proposed Development against a future baseline (i.e. the proposed opening year).

140. Where relevant, the socio-economic effects identified will be quantitatively and qualitatively appraised against relevant national standards and policy requirements. Where no standards exist, professional experience and judgement will be applied and justified within the ES.

141. In accordance with the HCA's Additionality Guide, the likely effects of the Proposed Development will be considered at various geographic scales (i.e. local, borough, regional and national), which will be clearly described in the ES chapter.

142. Mapping techniques, as well as flow diagrams and matrices (all identified by 'EC Guidelines on Indirect and Cumulative Impacts'¹⁴ as useful assessment methods) will be used wherever possible, to ensure that assumptions and interdependencies between impacts and effects are clearly presented within the assessment.

143. Modelling and accepted metrics, such as employment densities, average worker expenditure and indirect multipliers, will be used wherever possible to calculate primary, secondary and indirect effects.

144. Where standard or accepted methods do not exist, benchmarking exercises will be undertaken and presented clearly and transparently, along with any assumptions made.

Health

145. The potential effects of a new development on the health of local residents and workers of the site would be largely determined by the way the newly proposed buildings and spaces are used, as well as lifestyle factors which cannot be accurately quantified at the planning stage. However, appropriate design and planning can play a role within the wider determinants of health and well-being, including the provision of good quality work space and housing, employment, amenity and leisure infrastructure, ease of access to different forms of transport, etc.

146. The EIA Regulations requires that the EIA must "...identify, describe and assess in an appropriate manner... the significant effects of the proposed development [in terms of] - human health..." (Regulation 4(2) and Schedule 4(4)).

147. It is anticipated that potential significant effects of the Proposed Development, in terms of human health, will be comprehensively considered throughout the ES as a whole (within individual technical assessments) and that a separate health assessment would not be required as part of the preparation of the ES. The following technical assessments are identified where potential impacts and effects on human health will be taken into account:

- Demolition and Construction -
 - It is proposed that for the period of demolition and construction works, a Construction Environmental Management Plan (CEMP) would be prepared in advance of works

¹⁴ European Commission (EC), (1999); Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.

commencing on-site to manage the potential effects from the demolition and construction of the Proposed Development. The demolition and construction chapter as well as the CEMP when prepared would include key matters relating to health including public safety, amenity and site security.

- Socio-Economic -
 - The assessment would consider the effect of the Proposed Development on the local social infrastructure arising from the new residential population, such as doctors (GPs), education, amenity and plays pace areas, etc. Consideration would also be given to the local economy in terms of employment opportunities and local spending, which in turn has direct and indirect benefits on the population at the local and borough levels, as well as the new provision of amenity space to benefit both future occupants and visitors to the site, as well as the wider community.
- Highways and Transport –
 - The assessment would consider the effect of the Proposed Development on existing and future road users, in terms of driver delay, and delays to cyclists and their amenity. The assessment would also take account of pedestrians along the surrounding road network, in terms of delays, amenity, fear and intimidation; their potential for severance from places and other people; and with regard to the risk for accidents and their safety.
- Air Quality –
 - The assessment would consider the potential effect of the Proposed Development on human health (both receptors external to the site, and for future occupants and visitors at ground floor level) in terms of air quality, in the form of dust generated during the demolition and construction works, and from introduced pollutant sources associated with the Proposed Development, including the energy centre and transport emissions (i.e. residential and servicing) when operational.
- Noise and Vibration –
 - The assessment would consider the effect of the Proposed Development on human health from noise and vibration - particularly the effect of change in noise and vibration levels at high sensitive receptor locations (i.e. residential) on- site and surrounding local area).
- Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare –
 - The assessment would consider the change in the daylight and sunlight amenity condition to surrounding external receptors (particularly residential properties) as a result of the massing introduced by the completed and operational Proposed Development, as well as the likelihood for overshadowing to surrounding open spaces, affecting the amenity of future users. The consideration of the potential effect of light pollution on neighbouring residential properties would also be considered, as well as an assessment of solar glare, from a safety aspect, with respect to road users (i.e. vehicle drivers, cyclists) and pedestrians at road junctions.
- Wind Microclimate –
 - The assessment would consider the change in the wind microclimate experienced by both future occupants and visitors to the site, in terms of across the public realm areas and entrances to the buildings, as well as to pedestrians and road users (i.e. vehicle drivers, cyclists) external to the site, who travel along thoroughfares and surrounding roads. The assessment would also consider any wind safety exceedances which could impact human health.

- Geo-environmental (refer to the Preliminary Risk Assessment presented within Appendix A of this Scoping Report) -
 - The assessment was prepared to identify potential land quality risks and constraints associated with the Proposed Development. In particular, the report assesses the potential risk of contaminated land on human health based on a 'source-pathway-receptor' analysis - for a risk to be present, there must be a viable contaminant linkage; i.e. a mechanism whereby a source impacts on a sensitive receptor via a pathway. Receptors considered include – human health (future site users); site neighbours; and construction workers.
- Flood Risk Assessment –
 - The assessment would be prepared to identify the susceptibility of the land being redeveloped to flooding and the risk to future occupants of the site, ensuring the safe development and secure future occupancy of the site – in particular, 'more vulnerable' uses such as residential space. It is a requirement for new developments to address and manage the threat of flooding accordingly to ensure that the development is and remains safe throughout its lifetime (i.e. it has an appropriate degree of protection) and does not increase flood risk elsewhere (i.e. to other vulnerable uses).

Highways & Transport

148. A highways and transport assessment will be undertaken by Vectos, to determine the potential effects of the Proposed Development. The assessment will consider the potential effects associated with the demolition and construction of the Proposed Development, and once the Proposed Development is completed and operational, and will be presented in a Highways and Transport ES Chapter.

Baseline Conditions

149. A full review of the baseline conditions observed on the surrounding highway and transport networks will be set out within the Highways and Transport ES Chapter. In addition to a review of policy and guidance, the following will be used to inform the baseline conditions on the highways and transport networks (which will reflect the existing 2019 environment):
- Site visits;
 - Desktop research into relevant published information, such as timetables, planning application documents and public consultations;
 - Discussions with WBC and SCC; and
 - Traffic survey and accident data.
150. The site is located in close proximity to Woking town centre and other smaller local villages. Guildford, which provides a range of key facilities, is also accessible from the site. Vehicular and pedestrian access to the site is currently located to the north, off the A427 Kingfield Road. Access to the existing David Lloyd gym is via a pedestrian and vehicular site access located to the west of the site, off Westfield Avenue.
151. There is a wide selection of existing walking and cycling facilities within the vicinity of the site, with it being an approximate 20-minute walk and a 6-minute cycle to reach Woking town centre. National Cycle Network (NCN) Route 223 runs directly past the site and can be used for active travel to Woking and Guildford, and further afield. The site also has an abundance of footpaths with a variety of destinations. All the roads in the vicinity of the site have pedestrian footpaths on either side.
152. There is a bus stop located approximately 50m from the northern boundary of the site, which provides access to eight services (an average frequency of 3 buses per hour), which connect to key destinations

such as Guildford, Woking town centre / railway station and Addlestone. Rail services are provided very frequently (seven days a week) from Woking Station, which is located approximately 1.2km north of the site. These services link to London Waterloo, Portsmouth and Basingstoke.

153. All existing servicing deliveries and refuse collection movements associated with the football club take place on-site, via the access road off A427 Kingfield Road.

Sensitive Receptors

154. It is anticipated that the potential sensitive receptors that will be considered as part of the assessment include the users / visitors of:

- Woking Park;
- Woking Leisure Centre;
- Pedestrian routes surrounding the site;
- Cycle routes surrounding the site;
- Kingfield School;
- Woking College;
- Houses surrounding the site; and
- St Mark's Church.

Potential Effects

155. The IEMA Guidelines also set out a number of potential highways and transport related effects which may require assessment as follows:
- *Severance* - Defined as the perceived division that can occur within a community when it becomes separated by a major traffic artery and describes a series of factors that separate people from places and other people. Such division may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself.
 - *Pedestrian Delay* - Defined in the IEMA guidelines as an issue that is affected by changes in the volume, composition and / or speed of traffic and may affect the ability of people to cross roads. Typically, increases in traffic levels result in increased pedestrian delay, although increased pedestrian activity itself also contributes.
 - *Pedestrian Amenity* - Defined in the IEMA guidelines as the relative pleasantness of a journey and can include fear and intimidation if they are relevant. As with pedestrian delay, amenity is affected by traffic volumes and composition along with pavement width and pedestrian activity.
 - *Driver Delay* - Identified in the IEMA guidelines as an issue that can occur at several points on the network, although the effects are only likely to be significant when the traffic on the highway network is predicted to be at or close to the capacity of the system.
 - *Fear and Intimidation* - Identified in the IEMA guidelines as a further traffic effect on pedestrians. The effect is dependent on the volume of traffic, its HGV composition, its proximity to people, or the lack of protection caused by such factors as narrow pavement widths.
 - *Accidents and Safety* – This is not defined in the IEMA guidelines, suggesting that professional judgement will be needed to assess the implications of local circumstance or factors that may increase or decrease the risk of accidents. The full results of the accident analysis will be reported in the Highways and Transport ES Chapter.

- *Hazardous Loads* - The Proposed Development is not expected to generate or require the delivery of hazardous loads once it is completed and operational; on this basis, no likely significant effects are anticipated

156. The transport related effects of the Proposed Development will be due to changes in traffic and other transport modes such as walking, cycling and public transport. However, increased use of these modes will lead to a reduction in the traffic effects. A full assessment of the non-car transport effects of the Proposed Development will be undertaken in both the Transport Assessment and ES chapter along with the effects of the changes in traffic.

Walking, cycling and public transport journeys will be assessed on a first principles basis, with trips distributed on the network, and an assessment made on the impact of these additional trips on each part of the network / route based on the existing level of provision and existing level of demand.

Scope of Assessment

Proposed Surveys

157. A series of traffic and pedestrian surveys will inform the baseline conditions for the assessment. The surveys will be undertaken on:

- A Neutral (i.e. non-match day for Woking football club (FC)) day between Tuesday and Thursday, between the hours 06:00-10:00 and 15:00-22:30;
- A Saturday (match day for Woking FC) between the hours 13:00-19:00; and
- A Saturday (non-match day for Woking FC) between the hours 13:00-19:00.

158. The locations of the following pedestrian and transport surveys will:

- Woking FC Site Crossroads: manual classified counts (MCC) and Pedestrian Survey;
- David Lloyd Junction: MCC;
- A427 Roundabout: MCC;
- Vicarage Road / Highfield Road Roundabout: MCC;
- Egley Road Site Access: MCC;
- Egley Road Roundabout: MCC;
- Kingfield Road / Clarence Road Junction: MCC and Pedestrian Survey;
- Guildford Road / York Road Junction: MCC and Pedestrian Survey;
- Automatic traffic counters (ATC) either side of Access Junction
- ATC east of Vicarage Road / Highfield Road Roundabout;
- ATC on Guildford Road, just south of Mount Hermon Road;
- Pedestrian Survey in Woking Park;
- Pedestrian Survey on southern access to Constitution Hill; and
- Pedestrian Survey Ockenden Road / White Rose Lane Junction.

Future Baseline (Opening Year)

159. Due to the nature of the transport network in Woking during peak hours, it has been assumed that background traffic flows on the local highway network would remain the same from the baseline to the

future baseline. On this basis, background growth has not been accounted for within the trip generation assessment. In addition, there are no Committed Developments within 1km of the Proposed Development and therefore no additional volume of traffic will be added to the Future Baseline position.

160. The number of development trips anticipated to be generated by the site for both traffic and non-traffic will be derived from the Trip Rate Information Computer System (TRICS), National Travel Survey (NTS) and Census data for each land use. They will include the details of the anticipated:

- Trips by Land Use and Journey Purpose;
- Level of Internalisation by Journey Purpose;
- Modal Splits of Journeys;
- Trip Distribution; and
- Total Person and Vehicle Trips.

161. For the increase in capacity at the football stadium, a proportional increase will be applied to the existing average attendance and anticipated future attendance to determine the future pedestrian and public transport baseline.

Assessment Scenarios

162. The assessment scenarios that will be considered include the following:

- Existing (2019) Baseline;
- Future Baseline without the Proposed Development; and
- Future Baseline with the Proposed Development.

Study Area

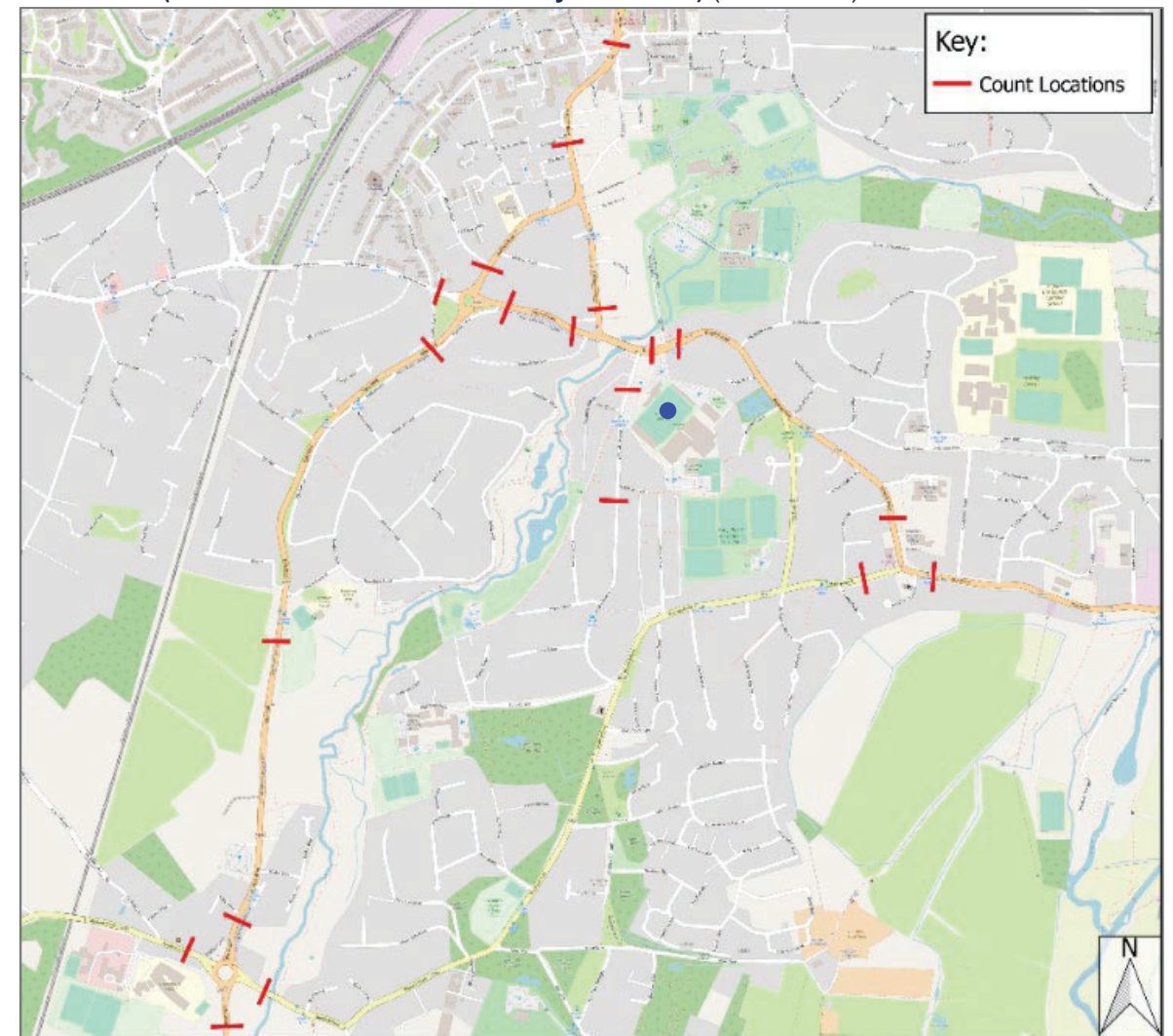
163. In accordance with the IEMA guidelines, the Study Area for the traffic flows has been defined by identifying any link or location where it is considered that potential effects may occur as a result of the Proposed Development. The geographical extent of the Study Area and highway links for the traffic flows area summarised in Table 2 and Figure 5.

Table 2 Highway Links considered within the Highways and Transport Assessment

Road Link Reference	Description of Link
1	Guildford Road (North of Constitution Hill Junction)
2	Guildford Road (South of Constitution Hill Junction)
3	Claremont Avenue
4	Guildford Road (North of A427 Roundabout)
5	Wych Hill Lane (West of A427 Roundabout)
6	Egley Road (South of A427 Roundabout)
7	Wych Hill Lane (East of A427 Roundabout)
8	Wych Hill Lane (West of Claremont Avenue Junction)
9	Kingfield Road (West of Site Access)
10	Kingfield Road (East of Site Access)
11	Westfield Avenue (North of David Lloyd Access)
12	Westfield Avenue (South of David Lloyd Access)
13	Kingfield Road (North of A427 Roundabout)

Road Link Reference	Description of Link
14	Vicarage Road
15	High Street (A427)
16	Egley Road (North of Egley Road Site Access)
17	Egley Road (South of Egley Road Site Access)
18	Mayford Green
19	Guilford Road (East of Egley Road Roundabout)
20	Egley Road (South of Egley Road Roundabout)

Figure 5 Highway Links considered within the Highways and Transport Assessment (indicative site location shown by a blue dot) (not to scale)



164. The assessment of the links will detail the base flows and future year flows (opening year of the Proposed Development); it will also detail the demolition and construction flows, and their percentage impact during the operation of the Proposed Development. It will then assess the Proposed Development's percentage impact that the flows will have on the opening year of the Proposed Development.

- 165. The assessment will consider the potential effects of the Proposed Development in the future, i.e. the opening year.
- 166. Due to the nature of the transport network in Woking during peak hours, it has been assumed that background traffic flows on the local highway network would remain the same from the baseline to the future baseline. On this basis, background growth has not been accounted for within the trip generation assessment with Committed Developments accounting for the future year traffic growth.
- 167. The IEMA guidelines recognise that distinguishing between significant and insignificant changes can be difficult. In order to assist the selection process, the IEMA guidelines provide two broad 'rules of thumb' that can be used to determine the need for a detailed assessment, set out as follows:

- Rule 1 suggests that highway links where traffic flows would increase by more than 30% or the number of heavy vehicles would increase by more than 30% should be assessed; and
- Rule 2 suggests that specifically sensitive areas (e.g. conservation areas, hospitals, links with high pedestrian flows, etcetera) should be assessed where traffic flows would increase by 10% or more.

- 168. Road links where the effect is greater than prescribed in IEMA's rules will be subject to a more detailed assessment of the effect on Severance, Pedestrian Delay, Pedestrian Amenity, Driver Delay and Accidents and Safety.

Mitigation

- 169. Where appropriate, transport mitigation measures will be proposed. These will potentially include junction improvements, walking and cycling improvements, and public transport enhancements. A Travel Plan will also be developed for the Proposed Development.
- 170. A Crowd Management Plan (CMP) (expected to be secured by way of a condition) will be prepared and implemented to control movements of supporters to and from the football matches, once the Proposed Development is completed and operational. The provision of Controlled Parking Zones will also be reviewed as part of the planning application and amended or extended as appropriate.
- 171. Additionally, Travel Plans and a Delivery & Servicing Plan (all of which are expected to be secured by way of conditions) will also be prepared and put in place to mitigate any potential effects.

Air Quality

- 172. The assessment will cover potential effects associated with the demolition and construction works, and once the Proposed Development is completed and operational. The assessment will be undertaken by Air Quality Consultants Ltd.

Baseline Conditions

- 173. WBC monitors concentrations of NO₂ using 36 passive diffusion tubes, including one located in close proximity to the site (on Rosebery Crescent), and six located within or in close proximity to an Air Quality Management Area (AQMA), which is located approximately 550m to the north of the site. Monitoring data for the year 2017 at these 36 locations indicate that annual mean concentrations of NO₂ are below the objective in the study area, with the exception of two locations within the AQMA, where exceedances of the annual mean nitrogen dioxide objective were recorded in 2017. WBC has declared two AQMAs for exceedances of the annual mean NO₂ objective; one to the north of the site, as mentioned above (named "AQMA 2"), and another at Anchor Hill (named "AQMA for Anchor Hill"), located 4km to the west of the site.

Sensitive Receptors

- 174. For on-site demolition and construction activities, the assessment will consider the potential for impacts

within 350m of the site boundary, and within 50m of the routes to be used by demolition and construction vehicles up to 500m from the site entrance(s). For the demolition and construction dust assessment, relevant receptors in the area include residential dwellings and educational facilities (high sensitivity receptors) as well as offices and shops (medium sensitivity receptors). Receptors will be identified based upon the distance bandings set out in IAQM guidance¹⁵. Figure 6 shows the extent of the 350m band around the site boundary, and thus provides an indication of receptors potentially affected by demolition and construction dust.

Figure 6 Area considered as part of the Demolition and Construction Assessment



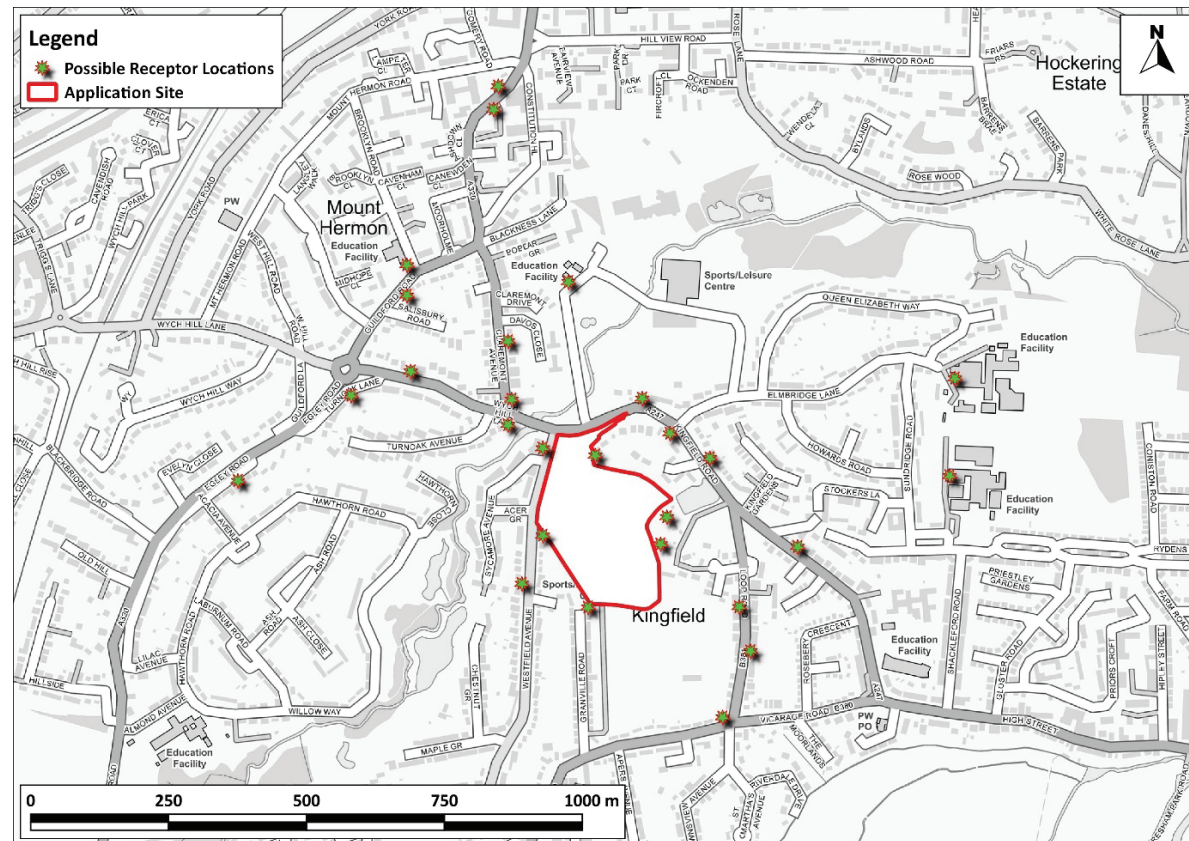
- 175. For the assessment of the completed and operational Proposed Development, suitable receptor locations will be identified based on detailed maps, satellite imagery, and plans of the Proposed Development. The locations selected will be dependent on the layout of the Proposed Development, the exact location of the exhaust(s) serving the centralised energy plant, and the volume and routing of traffic generated by the Proposed Development. Receptors will be identified to represent a range of exposure, including worst-case locations. Existing receptors will include residential dwellings in the study area, for example along Westfield Avenue, Kingfield Road (A247), Egley Road and Guildford Road (A320), alongside which AQMA 2 is located, as well as educational facilities located in the study area. No future receptors have currently been identified. The study area will be defined by comparing the predicted traffic generation of the Proposed Development to screening criteria published by the IAQM¹⁶. Each road, where changes in traffic flow exceed these screening criteria, will be included in the study area and sensitive receptors will be determined by proximity to each of these roads.

¹⁵ IAQM (2016) Guidance on the Assessment of Dust from Demolition and Construction v1.1.

¹⁶ Moorcroft and Barrowcliffe et al (2017) Land-Use Planning & Development Control: Planning For Air Quality v1.2.

176. All receptors where the air quality objectives apply will be considered to be ‘high’ sensitivity receptors and will be taken into account as part of the assessment; receptors considered to be of a lower sensitivity will not be addressed within the assessment. Figure 7 presents a map identifying potential sensitive receptors. These are indicative locations and final receptors will be determined when undertaking the assessment, based on roads affected by increases in traffic and areas with the greatest impacts from energy plant emissions.

Figure 7 Potential Air Quality Sensitive Receptors



Potential Effects

177. Potential air quality effects that have been considered in relation to the demolition and construction of the Proposed Development, and once the Proposed Development is completed and operational include:
- Effects of dust emissions during the demolition and construction of the Proposed Development;
 - Effects of emissions from heavy duty vehicles during the demolition and construction of the Proposed Development;
 - Effects of road traffic and energy centre emissions anticipated to be generated by the completed and operational Proposed Development; and
 - Effects of existing and proposed sources on future residents and users of the completed and operational Proposed Development itself.

Demolition and Construction

178. The air quality assessment will present a list of recommended mitigation measures to be applied during demolition and construction works, based on the level of risk identified in the demolition and construction

dust risk assessment. With recommended mitigation measures in place, it is expected that the residual demolition and construction dust and PM₁₀ effects would be ‘not significant’.

179. Relevant guidance from the IAQM states that “*experience from assessing the exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) [...] suggests that they are unlikely to make a significant impact on local air quality and in the vast majority of cases they will not need to be quantitatively assessed*”. Significant effects as a result of NRMM emissions can thus be discounted from the assessment. However, suitable mitigation measures for demolition and construction plant will be presented as part of the mitigation measures, based on advice included in the IAQM guidance document.

Completed and Operational Development

180. The overall air quality effects associated with the completed and operational Proposed Development will be determined based on predicted effects at sensitive receptors and professional judgment. Where possible and if likely significant effects are predicted, mitigation measures will be proposed so that residual effects are not significant.

Scope of Assessment

181. The scope of the air quality assessment will include:
- The determination of baseline air quality conditions through examination of local monitoring data and other publicly available data;
 - The identification of relevant sensitive receptor locations for the demolition and construction of the Proposed Development, and once the Proposed Development is completed and operational;
 - A qualitative assessment of effects of the Proposed Development on dust soiling and concentrations of PM₁₀ resulting from activities during the demolition and construction works;
 - Consideration of the potential effects of emissions from heavy duty vehicles during the demolition and construction period;
 - A quantitative assessment of the effects of the completed and operational Proposed Development on concentrations of NO₂, PM₁₀ and PM_{2.5} from development-generated road traffic emissions in the proposed year of opening;
 - A quantitative assessment of the effects of the completed and operational Proposed Development on concentrations of NO₂ (and PM₁₀ / PM_{2.5} if relevant) from the on-site energy centre in the proposed year of opening; and
 - A quantitative assessment of concentrations of NO₂, PM₁₀ and PM_{2.5} that future users of the completed and operational Proposed Development will be exposed to in the year of opening.

Demolition and Construction

182. The potential effects from dust generated during the demolition and construction of the Proposed Development will be considered using the approach presented in the IAQM Guidance for assessing effects from demolition and construction activities.
183. Demolition and construction plant emissions will not be explicitly modelled, in accordance with the IAQM guidance; however, suitable mitigation measures for demolition and construction plant will be presented, based on the advice included in the IAQM guidance.
184. The number of heavy duty vehicles (HDV) that will be in operation during the demolition and construction of the Proposed Development will be considered in the context of the guidance from IAQM

and Environmental Protection UK (EPUK & IAQM)¹⁷. Where the number of HDVs is greater than the relevant screening criterion (25 Annual Average Daily Traffic (AADT) in an AQMA, or 100 AADT outside an AQMA) on roads with relevant exposure, then detailed dispersion modelling will be undertaken to determine worst-case effects on concentrations of NO₂, PM₁₀ and PM_{2.5} at existing sensitive receptor locations. Whether this is required or not will be determined once construction traffic volumes are known.

Completed and Operational Development

185. The dispersion models ADMS-Roads and ADMS-5 will be used to quantify the effects that road traffic emissions associated with existing and development-generated road traffic, and energy centre emissions, will have on air quality at existing and proposed receptor locations.
186. The scenarios that will be considered as part the assessment will include, as a minimum:
 - Current baseline scenario;
 - Opening Year – without the Proposed Development; and
 - Opening Year – with the Proposed Development.
187. Background pollutant concentrations will be determined using data derived from the Background Maps published by Defra¹⁸.
188. The operational assessment will include a sensitivity test for the prediction of NO₂ road traffic effects to address elevated real-world nitrogen oxides emissions from certain diesel vehicles. This test will be carried out by applying adjustments to the 'official' emission factors and will represent a reasonable worst-case upper-bound to the assessment.
189. Meteorological data will be taken from a suitable nearby meteorological station. The year of meteorological data to be used in the dispersion model will be selected to match the latest year with available local monitoring data. For the assessment of energy centre emissions, a sensitivity test will be undertaken using 3 years of meteorological data.
190. The baseline road model output will be verified against appropriate monitoring data from the local authority, and an adjustment factor will be determined, in line with the methodology set out in the LAQM TG (16)¹⁹ guidance document.

Overall Significance and Mitigation

191. The predicted concentrations will be compared with the relevant air quality objectives and any exceedances will be highlighted. The overall effects significance will be evaluated using the approach recommended by the IAQM & EPUK. Where possible, mitigation measures will be proposed in order to ensure that residual effects are not significant.
192. Appropriate mitigation measures, as listed in the IAQM guidance document on demolition and construction dust¹⁶, will be proposed for the demolition and construction of the Proposed Development, based on the level of risk identified by the dust assessment.

Noise and Vibration

193. Sandy Brown will undertake a noise and vibration assessment to determine the potential effects of the Proposed Development. The assessment will consider the potential effects associated with the demolition and construction of the Proposed Development, and once the Proposed Development is

¹⁷ Moorcroft and Barrowcliffe et al (2017) Land-Use Planning & Development Control: Planning For Air Quality v1.2.
¹⁸ Defra (2019) Local Air Quality Management (LAQM) Support Website.
¹⁹ Defra (2016) Review & Assessment: Technical Guidance LAQM.TG16.

completed and operational.

Baseline Conditions

194. Noise monitoring surveys will be undertaken to obtain baseline information relevant to the site and the surrounding area. The expected survey measurement positions are shown in Figure 8 (L = long-term noise monitoring, S = sample noise monitoring).

Figure 8 Anticipated Noise Monitoring Positions (site location shown by a blue dot)



195. The measurements will comprise of long-term unattended monitoring (covering a period of at least 7 days) and attended sample measurements during the daytime and evening.
196. Measurements of crowd noise, entering and leaving the stadium, will be undertaken to establish typical noise levels associated with crowd movements. Measurements of event noise emanating from the stadium will also be completed during this visit.
197. The long-term and sample noise measurements will be completed using five-minute sample periods, completed in 1/3 octave bands, are A and Z-weighted, and include all typical sound pressure level parameters e.g., L_{eq}, L_{max}, L₉₀ etc.

Sensitive Receptors

198. The assessment will consider the following (but not be limited to) surrounding sensitive receptors:
 - Kingsfield Road residents to the north of the site;
 - Kingsfield Drive residents to the north-east of the site;
 - Westfield Avenue and Westfield Grove residents to the south and west of the site;
 - Kingfield Close residents to the east of the site;

- Granville Road residents to the south of the site; and
- The introduced receptors (of the Proposed Development, once completed and operational).

Potential Effects

199. Potential noise and vibration effects anticipated to arise during the demolition and construction works, and once the Proposed Development is completed and operational, include:

Demolition and Construction:

- Temporary noise and vibration nuisance associated with daytime and night time (if required) demolition and construction works; and
- Traffic related noise nuisance to existing surrounding sensitive receptors, during the demolition and construction works, and associated with daytime and night time (if required) works.

Completed and Operational Development:

- Noise effects on the residential occupants of the completed and operational Proposed Development;
- Noise associated with crowd dispersion during / following a football match;
- Break-out noise from the stadium during a football match;
- Traffic related noise effects (from residential traffic movements, spectator travel and general day-to-day servicing of the stadium) once the Proposed Development is completed and operational; and
- Noise from building services plant once the Proposed Development is completed and operational.

200. The following will be excluded from the assessment:

- Noise emissions associated with the testing or operation of emergency announcements or emergency building services plant (as these are temporary and cannot be readily assessed in the same manner as permanent potential effects); and
- Vibration effects on the residential occupants of the completed and operational Proposed Development, due to the site being located away from potential vibration sources i.e. trainlines.

Scope of Assessment

201. The noise and vibration assessment will be presented in the form of a technical ES chapter and will be supported by relevant technical information (survey data and calculations), which will be appended to the ES.
202. The identification of potentially sensitive receptors on and surrounding the site (as noted above) will be categorised based on their 'sensitivity' and in accordance with EIA terminology.
203. The magnitude of potential impacts will be defined in accordance with recognised noise and vibration guidance, and corresponding EIA terminology.
204. The scale of effects will refer to guidance within the Noise Policy Statement for England (NPSE)²⁰. The decision making includes identifying whether the overall effect of the noise exposure generated by a development is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level. The definitions for the different effect levels are outlined below:

²⁰ DEFRA, (2010); Noise Policy Statement for England.

- Significant Observed Adverse Effect Level (SOAEL): The level of noise exposure above which significant adverse effects on health and quality of life occur;
- Lowest Observed Adverse Effect Level (LOAEL): The level of noise exposure above which adverse effects on health and quality of life can be detected; and
- No Observed Effect Level (NOEL): The level of noise exposure below which no effect at all on health or quality of life can be detected.

205. Typically, effects (either before or after mitigation) that are major or moderate in scale shall be considered as 'significant effects' i.e. exceeds the LOAEL. The exception to this will be temporary non-permanent sources of noise, where a moderate effect would be considered acceptable, as it does not exceed the SOAEL.

Demolition and Construction

206. The assessment of demolition and construction noise and vibration effects are described as follows:

- Estimation of noise generated (impact magnitude) during each principal phase of the demolition and construction works, and an assessment of the likely effects on surrounding sensitive receptors (pre-mitigation). The assessment will be based on the "ABC" methodology set out in British Standard (BS) 5228:2009²¹;
- Road traffic associated with the demolition and construction works will be assessed using the same approach as described below for general increases in road traffic once the Proposed Development is completed and operational;
- The nature, scale and significance of noise and vibration effects will be classified;
- Appropriate Best Practicable Means mitigation / any other required mitigation and will be identified, and the nature, scale and significance of residual effects (post mitigation) will be re-classified; and
- Details of plant and equipment to be used throughout the demolition and construction works, including % on times and sound power levels, shall be presented within the ES.

Completed and Operational Development

207. The assessment of operational noise effects are described as follows:

- The operational noise affects will be assessed with respect to the 2019 baseline measurements and, where appropriate, the baseline for the scheduled opening year of the Proposed Development;
- For the assessment of noise associated with road traffic, reference will be made to the Calculation of Road Traffic Noise (CRTN). Further advice is also given in the Design Manual for Roads and Bridges (DMRB) for the road traffic noise assessment;
- Significance criteria for assessing all traffic, which is based on the Institute of Acoustics (IOA) / Institute of Environmental Management and Assessment (IEMA) 'Guidelines for Noise Impact Assessment'²²;

²¹ BSI, (2008); BS 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Noise.

²² Institute of Acoustics (IOA) and IEMA, (2014); Guidelines for Environmental Noise Impact Assessment.

- For the assessment of building services noise, reference will be made to the use of BS 4142:2014²³. Criteria for the assessment will be set in accordance with BS 4142 and the IOA / IEMA 'Guidelines for Noise Impact Assessment';
- For the assessment of site suitability for residential development, reference will be made to BS8233:2014²⁴ for noise;
- For the assessment of suitable external residential amenity, reference will be made to the use of BS8233:2014;
- The assessment of crowd dispersion noise levels and noise breakout from the stadium will be conducted on a proposed semantic scale. The semantic scale will assess the noise level produced by a crowd, relative to the short-term change in noise level in the area; and
- Baseline crowd noise measurements will be undertaken before and after a football match. If possible, the measured sound pressure levels will be converted to the equivalent sound power level, based on line source propagation. The crowd routes will be included within the site's noise model, with the equivalent sound power levels included. The sound pressure levels predicted using the model will be compared to the baseline crowd noise measurements.

Wind Microclimate

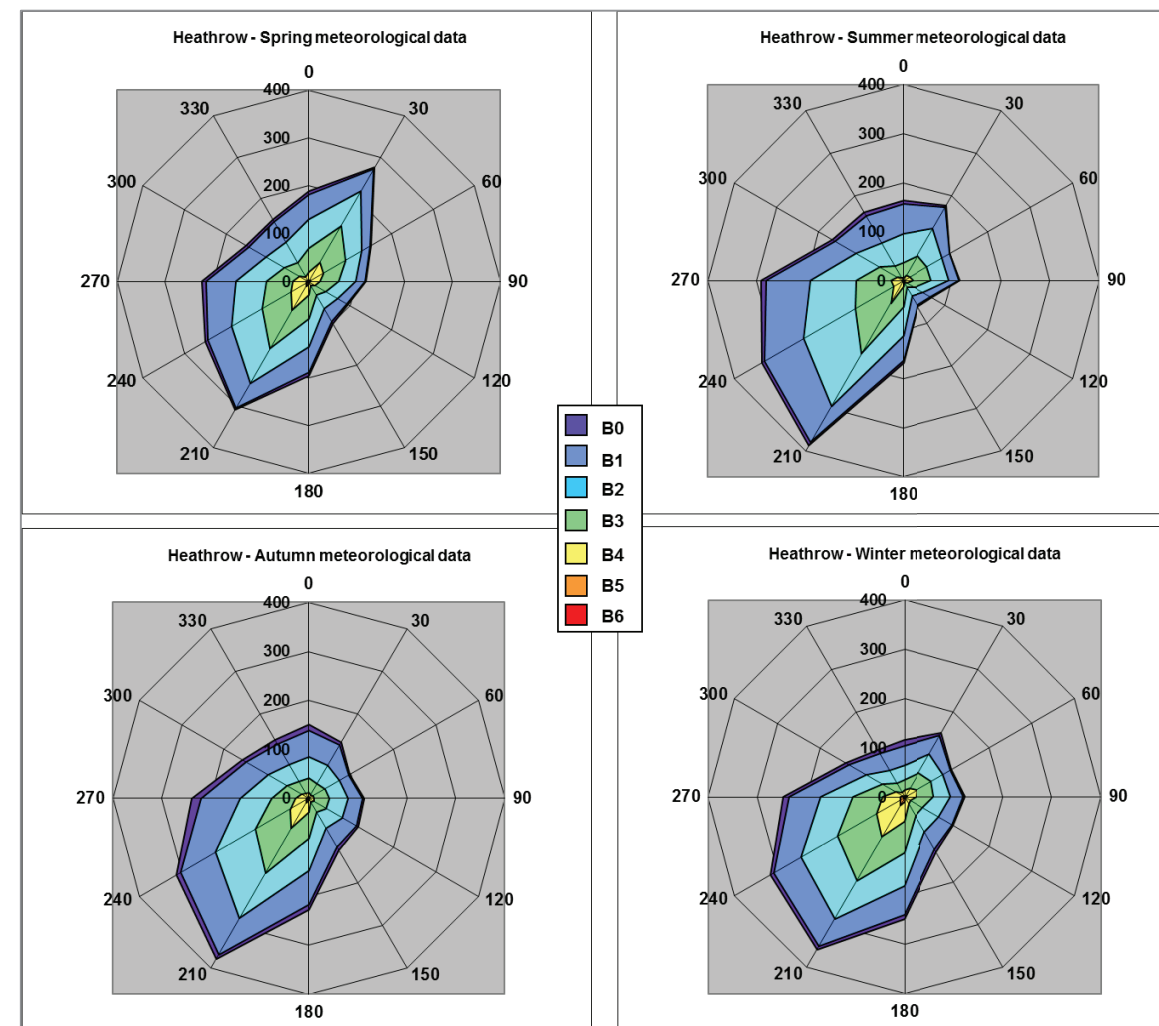
208. A wind microclimate assessment will be undertaken, based on the results of a wind tunnel test, to determine the potential effects of the Proposed Development on wind conditions on and surrounding the site. The assessment will be completed by RWDI.

Baseline Conditions

209. The baseline will be quantified in terms of pedestrian activity, in relation to its 'usability' for a range of pedestrian activities defined by the Lawson Comfort Criteria (typically sitting, standing, strolling, walking or uncomfortable). This will be done via wind tunnel testing of a scale model of the Proposed Development (in a boundary layer wind tunnel test facility), which will be constructed to reflect the existing built form at the site and the surrounding area. Additionally, the occurrence of any 'strong winds', defined as winds exceeding a 15m/s threshold for more than 2.2 hours per annum, shall be identified and quantified.
210. The wind tunnel test will allow the mean and peak wind speeds to be measured (for both the winter (worst case) and summer seasons) at locations across the existing site and at the entrance to and around other surrounding buildings, footpaths, roads, and areas of open space, within an appropriate proximity and for all wind directions.
211. The baseline results from the wind tunnel will be combined with long-term meteorological climate data for Heathrow, corrected to the site to understand the baseline conditions specific to the site having regard to its location within Woking. Testing in the wind tunnel will be conducted in the absence of any hard or soft landscaping, in order to provide a conservative result.
212. Winds for the Woking area are predominantly from the south-west, with a secondary peak from the north-east during the spring. Winds are typically stronger in the winter season, and lighter throughout the summer. Wind roses for Heathrow are shown in Figure 9 per season, over a period of 30 years, which is analysed through a statistical model, providing the frequency of occurrence and magnitude of winds from all directions from that period. Therefore, the wind roses inherently consider trends in the specific 30 year period.

²³ BSI, (2014); BS 4142:2014 Methods for Rating and Assessing Industrial and Commercial Sound.
²⁴ BSI, (2014); BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings.

Figure 9 Wind Roses for Heathrow (radial axis indicates number of hours per year of exceedance, of the relevant Beaufort Force)



Sensitive Receptors

213. The locations tested will include spaces that end users will populate, that are considered potentially sensitive to wind microclimate conditions, such as users of pedestrian footpaths or 'thoroughfares', possible entrance locations for new buildings, roads, and amenity areas (i.e. open space). This is both on and off-site, and in relation to their safety and comfort levels.

Potential Effects

214. The introduction of the proposed massing on-site will have the potential to influence the wind conditions on, and immediately adjacent to, the site and within the site's surrounds. The potential wind microclimate effects associated with the Proposed Development are considered to be:
- Undesirable wind speeds in accessible ground and elevated levels of the site, surrounding buildings and nearby areas of public realm during the demolition and construction of the Proposed Development; and
 - Undesirable wind speeds at ground and accessible elevated levels of the site, surrounding buildings and nearby areas of the public realm once the Proposed Development is completed and operational.

Scope of Assessment

Demolition and Construction

215. Generally, as demolition and construction works progress, the conditions on and around a redevelopment site would be expected to gradually transition between those of the baseline and the completed and operational scheme. As this will also apply to the demolition and construction of the Proposed Development, a qualitative approach will be taken to the assessment of the potential effects of the demolition of the existing buildings and construction of the Proposed Development on the wind microclimate. This will be based on professional judgement and the assumption that:
- Pedestrians will have limited or no access of the majority of the site (due to site hoarding) and the immediate vicinity; and
 - The demolition and construction activities on-site will be less sensitive to the local wind conditions than when the Proposed Development is completed and operational.)

Completed and Operational Development

216. Given the size and geometry of the Proposed Development, in addition to the site's location in relation to surrounding buildings and nearby areas of open space, it is important to avoid undesirable wind speeds being generated at ground and accessible elevated levels. Undesirable wind speeds could make some spaces within and around the Proposed Development uncomfortable or unsafe for pedestrian use.
217. Subsequent to the wind tunnel testing of the baseline conditions, the completed and operational Proposed Development massing and the existing surrounding buildings / area will be tested within the wind tunnel (for both the winter (worst case) and summer seasons).
218. A scale model of the Proposed Development will be manufactured and tested in a boundary layer wind tunnel test facility. Mean and peak wind speeds will be measured in sensitive receptor locations, for all wind directions. These results will be combined with long-term meteorological climate data for the Working area and then benchmarked against the Lawson Comfort Criteria (both in terms of comfort and safety), to determine the suitability of different areas within and surrounding the site.
219. The suitability of the conditions both within and surrounding the site both in terms of comfort, and strong winds will be presented and discussed within the ES, and a supporting technical appendix.

Mitigation

220. Should mitigation measures be required to ensure wind conditions within a particular area / space are suitable for their intended use, or mitigate against predicted strong winds, such mitigation will be developed in consultation with the Applicant and the Design Team. Where necessary, mitigation measures will be tested through additional rounds of wind tunnel studies. Following mitigation, the significance of any residual effects will be classified.

Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare

221. The daylight, sunlight, overshadowing, light pollution and solar glare assessment will be undertaken, and the ES Chapter will be prepared, by eb7.

Baseline Conditions

222. The baseline daylight and sunlight conditions within each of the relevant surrounding sensitive receptors will be defined under the existing site conditions, by reference to the Vertical Sky Component (VSC), No-Sky Line (NSL) and Annual Probable Sunlight Hours (APSH) methods.
223. In order to consider baseline overshadowing conditions, the relevant existing surrounding outdoor

amenity areas will be assessed using the Sun on Ground and Transient Overshadowing assessments. The Sun on Ground assessment will determine the proportion of the existing areas that currently see at least 2 hours of sunlight across their area on the 21st of March. The Transient Overshadowing assessment will provide a visual representation of the baseline shadow path at key times of the year.

224. With regards to solar glare, the existing buildings on-site are neither high-rise nor reflective; therefore, it can be said that there will be no adverse instances of reflected solar glare in the baseline condition. Where this is the case, the identification of the baseline conditions is generally not deemed necessary.
225. There is the potential for the existing external lighting (serving the car parks and the external tennis courts) to generate light pollution effects within the baseline conditions. To determine the baseline conditions, the existing light levels will be measured in the hours of darkness (pre-curfew), as close to the neighbouring receptors as access allows.

Sensitive Receptors

Daylight and Sunlight

226. Residential receptors identified on nearby roads / streets are considered sensitive in relation to daylight and sunlight and will therefore be included within the assessment. The following properties (sensitive receptors) will be included within the assessment:
- Relevant neighbouring properties on Westfield Avenue;
 - Relevant neighbouring properties on Westfield Grove;
 - Relevant neighbouring properties on Granville Road;
 - Relevant neighbouring properties on Kingfield Close;
 - Relevant neighbouring properties on Kingfield Drive; and
 - Relevant neighbouring properties on Kingfield Road.

Overshadowing

227. Areas of amenity space are considered most sensitive to overshadowing effects resulting from the Proposed Development. Owing to the southerly location of the sun path, only open spaces located from north-west through to north-east of the site require consideration in relation to overshadowing.
228. The following areas of amenity space have been identified as sensitive receptors in relation to the Proposed Development and will, therefore, be included within the assessment:

- Relevant gardens serving properties on Westfield Avenue;
- Relevant gardens serving properties on Westfield Grove;
- Relevant gardens serving properties on Kingfield Close;
- Relevant gardens serving properties on Kingfield Drive; and
- Relevant gardens serving properties on Kingfield Road.

Light Pollution

229. Existing residential properties in proximity to the stadium element of the Proposed Development will be relevant to the light pollution assessment. The assessment is likely to include the following sensitive receptors:
- Relevant neighbouring properties on Kingfield Road;
 - Relevant neighbouring properties on Kingfield Drive; and

- Relevant neighbouring properties on Kingfield Close.

Solar Glare

230. Signals or junctions on major roads or railways will be considered as part of the solar glare assessment. The assessment will consider drivers (sensitive receptors) on the following roads:

- Kingfield Road; and
- Westfield Avenue.

Potential Effects

Demolition and Construction

231. The potential daylight, sunlight, overshadowing, solar glare and light pollution effects associated with the Proposed Development, that are anticipated to occur during the demolition and construction of the Proposed Development, are considered to be as follows (and as relevant to the scope of the assessment in terms of receptors identified above):

- Temporary changes to the daylight and sunlight amenity within surrounding residential properties and other properties identified which have a reasonable expectation to natural light;
- Temporary changes to overshadowing of surrounding outdoor amenity spaces;
- Adverse reflected solar glare to drivers on surrounding roads; and
- Temporary changes to the level of light pollution to neighbouring residential properties.

Completed and Operational Development

232. The potential daylight, sunlight, overshadowing, solar glare and light pollution effects associated with the Proposed Development, that are anticipated to occur once the Proposed Development is completed and operational, are considered to be as follows (and as relevant to the scope of the assessment in terms of receptors identified above):

- Changes to the duration and quality of daylight and sunlight amenity to surrounding residential properties and other properties identified which have a reasonable expectation to natural light;
- Changes to the incidence and duration of overshadowing experienced by surrounding outdoor amenity spaces;
- Increased levels of light pollution, from internal and external lighting schemes of the Proposed Development (stadium and residential elements), to neighbouring residential properties; and
- Adverse solar glare to drivers on surrounding roads, as a result of reflections from façade treatments of the Proposed Development.

Scope of Assessment

233. The assessments will be carried out in accordance with the Building Research Establishment (BRE) Guidelines: Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice, Second Edition (2011), the British Standard (BS) 8206 Part 2 Lighting for buildings. Code of practice for daylighting (2008), Institute of Lighting Professionals (ILP) Guidance Notes for the Reduction of Intrusive Light (2011). The analysis will be undertaken from a 3D computer model constructed using specialist software.
234. The daylight, sunlight, overshadowing light pollution and solar glare effects of the Proposed Development will be assessed against the baseline condition.

Demolition and Construction

235. Owing to the evolving and changing nature of demolition and construction activities, the assessment of potential effects during the demolition and construction of the Proposed Development on daylight, sunlight, overshadowing, light pollution and solar glare to existing receptors will not be modelled, as the full effects would only be realised once the Proposed Development is completed and operational. Therefore, a qualitative assessment will be undertaken using professional judgement.

Completed and Operational Development

Daylight and Sunlight

236. In line with the BRE Guidelines, both the VSC and NSL assessments will be undertaken for the Proposed Development, for the relevant sensitive receptors identified above.
237. The sunlight amenity to the surrounding relevant receptors will be considered by reference to the Annual Probable Sunlight Hours (APSH) method of assessment. Due to the southerly rotation of the sun, this assessment will consider those windows which face the site and are located within 90 degrees of due south.
238. The nature (beneficial or adverse), scale (negligible, minor, moderate or major) and ultimately the significance of daylight and sunlight amenity effects will be determined using professional judgement and with reference to Appendix I of the BRE Guidelines.

Overshadowing

239. The overshadowing analysis on the surrounding areas of amenity space will be undertaken by reference to the TOS and Sun on Ground (SoG) methods of assessment.
240. For the TOS assessment, the path of shadow will be mapped for the Proposed Development on the following dates, as suggested by the BRE Guidelines:
- 21st March (Spring Equinox);
 - 21st June (Summer Solstice); and
 - 21st December (Winter Solstice).

241. The SoG assessment will consider the area of the amenity spaces that receive at least 2 hours of direct sunlight on 21st March (Spring Equinox).
242. The nature (beneficial or adverse), scale (negligible, minor, moderate or major) and ultimately the significance of overshadowing effects will be determined using professional judgement and in accordance with the BRE Guidelines.

Light Pollution

243. Obtrusive light and glare as a result of the stadium's pitch lighting to surrounding existing residential receptors will be considered. The thresholds within the ILP guidelines will be used to determine the nature (beneficial or adverse), scale (negligible, minor, moderate or major) and ultimately the significance of light pollution effects.

Solar Glare

244. The time, duration and date of solar glare effects to drivers on surrounding transport routes will be considered alongside the angle from the drivers' focal point. As there are no fixed thresholds for adverse solar glare, the nature (beneficial or adverse), scale (negligible, minor, moderate or major) and ultimately the significance of glare effects will be determined using professional judgement.

Townscape and Visual Impact Assessment

245. A Townscape and Visual Impact Assessment (TVIA) will be undertaken by Arc Landscape Design and Planning Ltd. The TVIA will provide an assessment of the effects of the Proposed Development on townscape and visual receptors.
246. The TVIA's study area will include both the site and its wider surrounding context at a 1km radius; this has been determined through establishing a zone of theoretical visibility (ZTV) around the site, and further long distant visual receptors and representative views will be considered where identified and relevant.
- Baseline Conditions*
247. In determining the site's baseline conditions and potential sensitive receptors to the Proposed Development, a desk-based review of relevant planning legislation, policy and guidance; characterisation studies; OS maps; and aerial mapping has been undertaken, along with a field study carried out in February 2019.
248. The site is formed of four parcels: the residential properties to the north; the Woking Football Club in the centre and west, including a tall south stand and flood lighting; the David Lloyd Centre to the south-east, which includes associated buildings of up to two storeys in height, surface car parking and tennis courts; and, two buildings that house the Woking Snooker Centre (one storey) and the Woking Gymnastics Club (two storeys) to the north-east. Vegetation is limited to the site's north, east and south boundaries, with an area of trees dividing the Woking Gymnastics Club and the David Lloyd Centre.
249. The site falls within the Woking Character Study's local character area '13: Westfield', with a number of townscape character areas located within the surroundings of the site and its study area, set out as follows and as shown in Figure 10:
- Character Area 11: Woking Town Centre South and Mount Hermon;
 - Character Area 12: Hook Heath East;
 - Character Area 15: Old Woking;
 - Character Area 16: Old Woking Village; and
 - Character Area 17: Hockering.
250. The assessment will consider the existing Woking Character Study's local character areas and build on this study to establish any further townscape/landscape character areas within the study area at the baseline stage, if required.
251. Due to the site and surrounding area's landform, vegetation and built form, the site's ZTV is limited to the north, north-east and west by approximately 500m to 750m, up to the properties associated with the raised areas of the Hockering Estate, Mount Hermon and Hook Heath, where they face the site along with areas of open space. To the east (known as Old Woking) and south (known as Westfield) of the site, the ZTV extends due to the flat topography associated with the River Way valley floor. It is considered that views of the site are likely to be available from areas of open space, roads that are orientated towards the site, and properties that face the site from within a 1km radius of it. Further long distance views of the site are likely to be available from the south-east, from the open land between the Westfield suburb of Woking and Send, and from limited sections of the Surrey Hills Area of Outstanding Natural Beauty (located approximately 5km to the south, close to East Clandon).
252. There are no listed buildings located on-site and the site does not fall within or adjacent to a conservation area; however, the study area contains a number of listed buildings and three conservation areas (Mount Hermon Conservation Area, Ashwood Road / Heathside Park Road Conservation Area

and The Hockering Conservation Area). These heritage assets will assist in determining the value of the townscape character areas and representative views to be assessed.

Sensitive Receptors

253. The sensitive receptors that will be considered in the TVIA include (but are not limited to) the following:
- Townscape Character Areas:
 - Character Area 11: Woking Town Centre South and Mount Hermon;
 - Character Area 12: Hook Heath East;
 - Character Area 13: Westfield;
 - Character Area 15: Old Woking;
 - Character Area 16: Old Woking Village; and
 - Character Area 17: Hockering.
 - Visual Receptor's Representative Views: Visual amenity viewpoints that have been agreed in consultation with WBC (as shown in Figure 11).
 - 1. Junction of Wych Hill Lane and Claremont Avenue;
 - 2. Entrance to Woking Leisure Centre;
 - 3. Public right of way along Elmbridge Lane;
 - 4. Kingfield Road, overlooking Kingfield Green;
 - 5. Loop Road Sports Field;
 - 6. Westfield Road, overlooking Granville Road;
 - 7. Westfield Avenue;
 - 8. Hoe Valley Linear Park;
 - 9. Hawthorn Road;
 - 10. Wych Hill Lane;
 - 11. Brooklyn Road;
 - 12. Public right of way that crosses through St Peters Recreation Ground;
 - 13. River Wey footbridge, FP52 on SCC's definitive map;
 - 14. Surrey Hills AONB, Staple Lane at the entrance to public right of way, FP84 on SCC's definitive map;
 - 15. Claremont Avenue;
 - 16. Moorlands (off Vicarage Road); and
 - 17. Rydens Way (outside Woking College).

Potential Effects

254. The Proposed Development will give rise to a new built form and appearance to the site, which would likely affect views and the townscape quality and context within, and surrounding, the site. Therefore, the EIA will address the following potential townscape and visual impacts, and subsequent likely effects:
- Temporary visual intrusion during the demolition and construction of the Proposed Development;

- Permanent effect of the completed and operational Proposed Development in relation to the removal of a number of the site's trees, structures and buildings; and
 - Permanent effects of the completed and operational Proposed Development on the quality and character of townscape around the site, and on representative views.
255. Mitigation measures to reduce the potential for likely significant effects during the demolition and construction of the Proposed Development will be implemented, via a Construction and Environmental Management Plan, prior to the commencement of any demolition and construction works.
256. To reduce the potential for likely significant effects once the Proposed Development is completed and operational, mitigation measures will be embedded into the design of the Proposed Development. These measures will likely relate to the layout and scale of the Proposed Development.

Scope of Assessment

257. The Guidelines for Landscape and Visual Impact Assessment²⁵, subsequently referred to as 'GLVIA3', states that a Landscape and Visual Impact Assessment (LVIA) provides a tool for identifying and assessing the "significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity". The guidance goes on to emphasise that a LVIA has two interlinked elements that include landscape, as a resource, and visual amenity. The effects of both landscape and visual amenity will be addressed as part of the TVIA, as the European Landscape Convention²⁶ defines landscape as including villages, towns and cities and the GLVIA3 states that 'townscape' refers to areas where the built environment is dominant.
258. The TVIA will be undertaken with reference to GLVIA3 and other relevant guidance including Natural England's An Approach to Landscape Character Assessment²⁷. Structured, informed and reasoned professional judgement will be used to take account of quantitative and qualitative factors. This is widely accepted as best practice and will be based on analysis of desk-based research and field assessment.
259. The baseline section of the townscape assessment will consider the site and surrounding townscape character area receptors in their existing states. The impact of the Proposed Development on these townscape character area receptors will be informed by the conclusions drawn from the visual assessment.
260. The visual assessment of the TVIA will be informed by a series of representative views from visual receptors, in which independent visualisers will produce 'Accurate Visual Representations' ('AVRs') of the Proposed Development. These will be identified based on the sensitivity of the locations of the visual amenity viewpoint receptors and the likelihood of visibility from them. This will enable a 360-degree assessment of the scale of the Proposed Development.
261. The sensitivity of the identified townscape character areas receptors and visual receptor's representative views, anticipated to be affected by the Proposed Development, will be determined by considering its value and susceptibility to change. Susceptibility is the ability of the receptor to accommodate change without undue consequences for the maintenance of the baseline situation and / or the achievement of planning policies and strategies.
262. The magnitude of the change to the existing townscape character area(s) and representative views as a result of the Proposed Development will take account of factors including the proximity, scale and

²⁵ The Landscape Institute and the Institute for Environmental Management and Assessment, (2013); Guidelines for landscape and Visual Impact Assessment, 3rd Edition.

²⁶ Council of Europe, (2007); The European Landscape Convention.

²⁷ Natural England, (2014); An Approach to Landscape Character Assessment Guidance.

contribution to these receptors. For effects which are considered to be minor, moderate or major, the effect will be further categorised as beneficial, neutral or adverse. Adverse effects will be those that undermine the value of the townscape character or representative views, whereas beneficial effects will be those that contribute to the identified value. Neutral effects will be those where the effect would be neither beneficial nor adverse, or a balance of adverse and beneficial influences. The assessment will also take into consideration any potential mitigation measures included to determine the significance of any residual effects.

263. Within the visual assessment there will be images for each of the identified visual receptor's representative views, 'as existing' and 'as proposed'. 'As proposed' images will be provided AVRs, either as rendered (photorealistic) images or as 'wirelines' (diagrammatic representations showing the outline of a development). Rendered and wireline images will accurately illustrate the degree to which the Proposed Development will be visible, and its form in outline. Rendered images also show the detailed form and the proposed materials of the Proposed Development.
264. For each of the identified representative views, a description as existing will be given, identifying its baseline value, its susceptibility to change and its sensitivity. A description of the representative view as proposed will then be provided, based on the method set out above, and include consideration of the significance of the effect that the Proposed Development will have on the representative view.

Figure 10 Woking Character Study's Townscape Character Areas

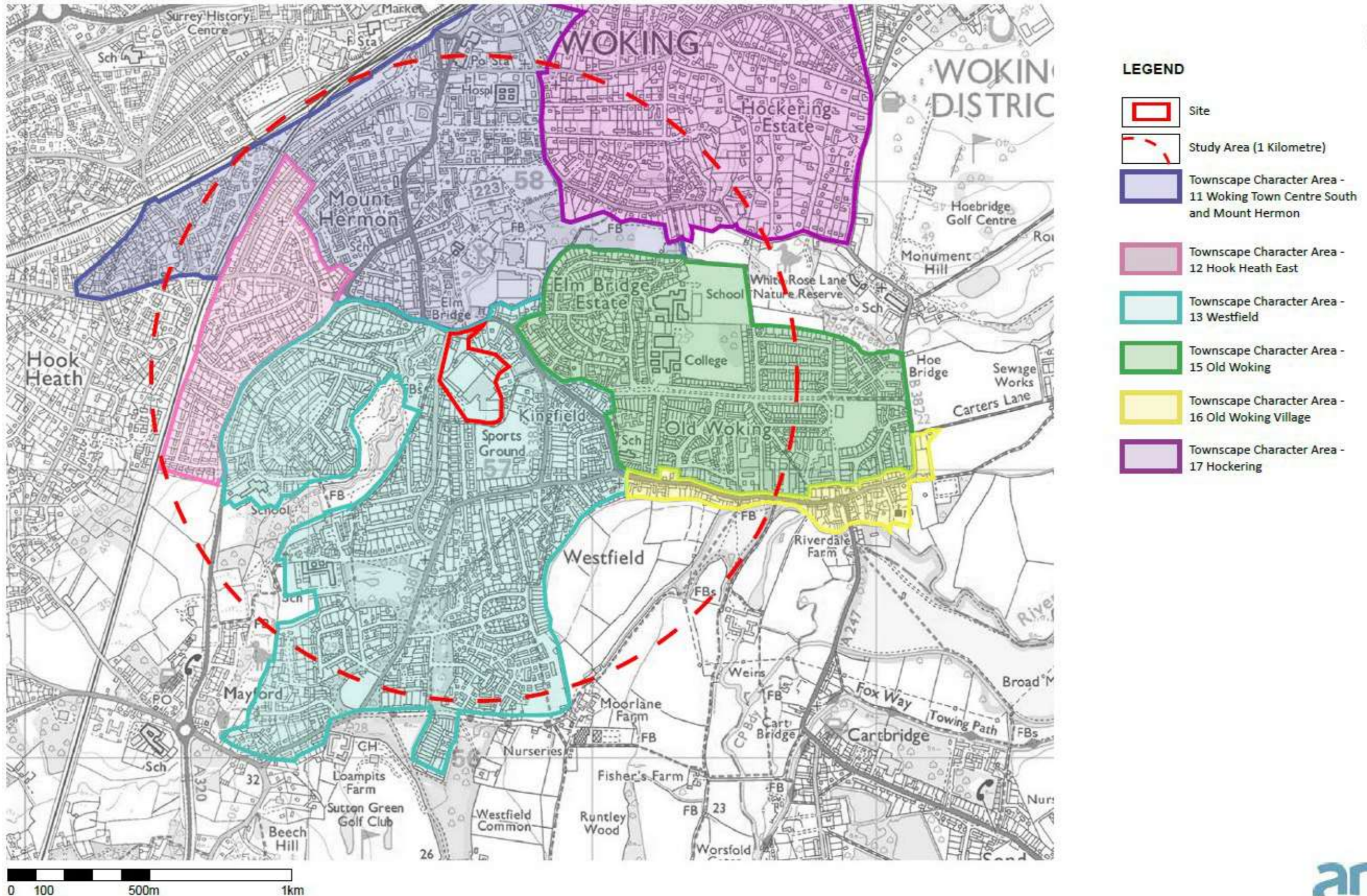
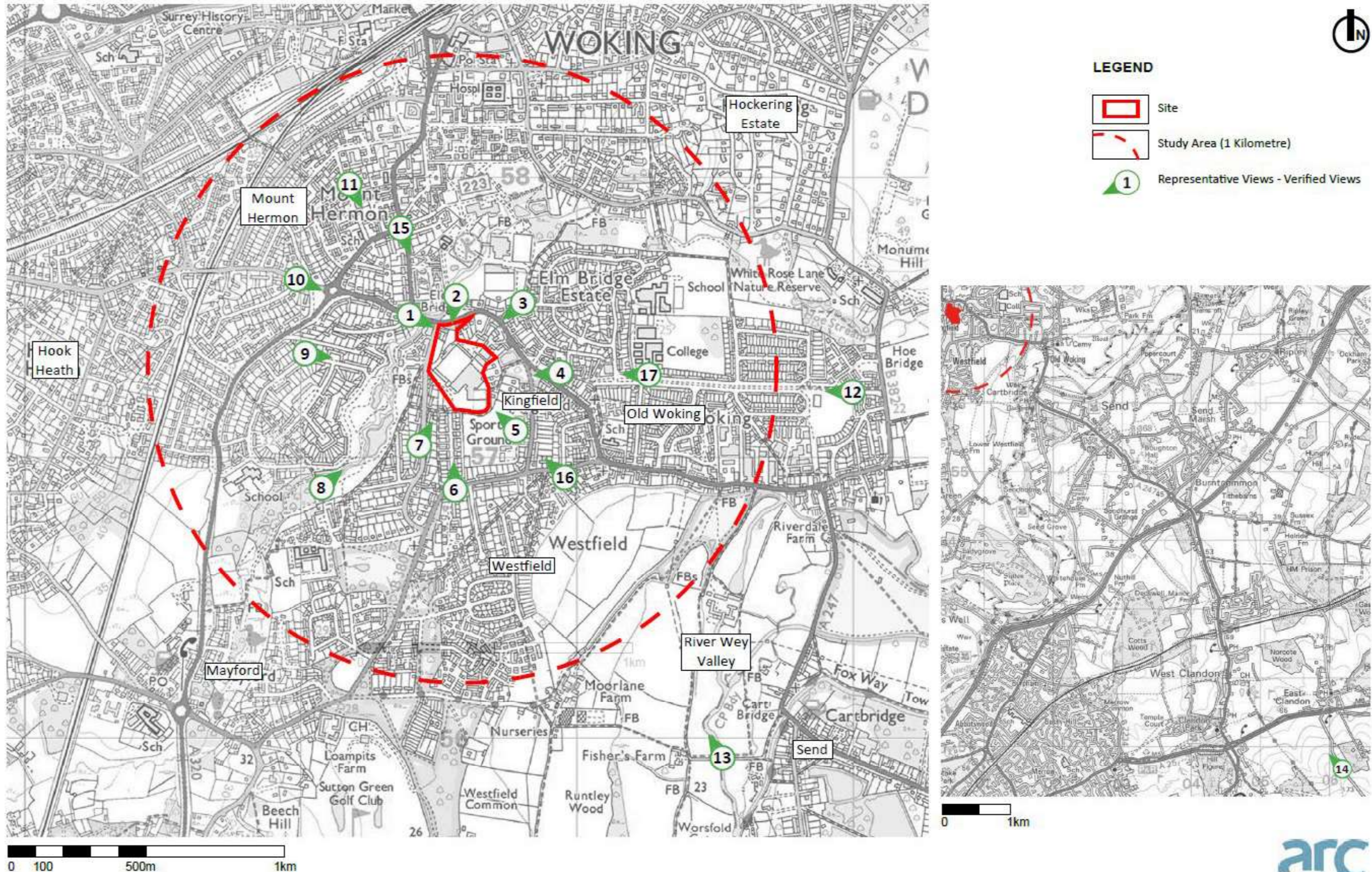


Figure 11 Visual Receptors Representative Views



TOPICS WHERE NO LIKELY SIGNIFICANT EFFECTS ARE ANTICIPATED

Archaeology

265. An Historic Environment Assessment (HEA) of the Proposed Development has been undertaken by the Museum of London Archaeology (MOLA) and is presented within Appendix C of this Scoping Report. The HEA assesses the impact of the Proposed Development on buried heritage assets (archaeological remains).
266. The HEA sets the site into its archaeological and historical context, based on the known historic environment within a 1km radius study area around the site, as held by the primary repositories of such information, including Surrey County Council's (SCC's) Historic Environment Record (HER), the Museum of London Archaeological Archive (MoL Archaeological Archive), and Historic England. Specialist reports prepared by Jomas Associates Limited, including the Desk Study / Preliminary Risk Assessment Report²⁸ and Preliminary Exploratory Hole Logs (BH1 – BH2)²⁹, were consulted. Through professional judgement, the study area was considered to be appropriate for characterising the historic environment of the site.
267. From reviewing the Historic Environment Record provided by SCC³⁰, Ordnance Survey historic mapping from the 19th and 20th centuries (available on the Old Maps website³¹) and Woking Borough Council's website³², it has been determined that there are no sensitive archaeological receptors (designated heritage assets) within the study area. Additionally, the site is not located within an Archaeological Priority Area as designated by SCC or a Conservation Area as designated by WBC.
268. The HEA identified that:
- The site is approximately 900m from the historic centre of Old Woking and there are no archaeological findspots or monuments recorded within the study area;
 - The site remained undeveloped until the current football stadium was built in the early 20th century; and
 - The site rises gradually from the north to the south-west with a low point of 24.0m AOD in the north to a high point of 25.5m AOD in the south-west.
269. The HEA has established that there is a low potential for archaeological remains of all periods within the study area, as the foundations of the existing football stadium are likely to have removed all buried heritage assets within their footprint. The single storey buildings currently located on-site are likely to have shallower foundations than the football stadium; there is, therefore, a greater chance of potential buried heritage assets from all periods having survived in these areas of the site.
270. In view of the findings presented in the HEA, it is considered likely that a watching brief would be required in the area outside of the existing football stadium's footprint, to ensure that any potential archaeological remains within such an area are not removed without record. Such work would be carried out under an approved (by WBC) Written Scheme of Investigation.
271. Provided that the recommendations for further works within the HEA are secured by appropriately worded planning conditions, significant residual adverse environmental effects are not considered likely

²⁸ Jomas Associates Limited, (2018); Desk Study/Preliminary Risk Assessment Report for Woking Football Club.

²⁹ Jomas Associates Limited, (2019b); Preliminary Exploratory Hole Logs (BH1 – BH2) for Woking Football Club.

³⁰ Surrey County Council HER search no. 046/19, 08/03/2019.

³¹ Old Maps Online <https://www.oldmapsonline.org/>, accessed 11/03/2019.

³² Woking Borough Council www.woking.gov.uk, first accessed 11/03/2019.

to arise in relation to below ground archaeology. Archaeology is, therefore, proposed to be scoped out of the EIA. The HEA will, however, be updated to reflect the final Proposed Development submitted for planning and will be submitted as an appendix to the ES.

Heritage

272. As previously noted, an HEA of the Proposed Development has been undertaken (as shown in Appendix C of this Scoping Report), which set the site into its archaeological, built heritage and historical context.
273. Following the HEA, a separate initial review of the built heritage assets on or located in proximity of the site has been undertaken. This review determined that there are no designated or non-designated built heritage assets located on-site; however, from reviewing the Historic Environment Record provided by SCC³³, Ordnance Survey historic mapping from the 19th and 20th centuries (available on the Old Maps website³⁴), WBC's website³⁵ and Historic England's National Heritage List for England (NHLE)³⁶, there are 15 designated built heritage assets located within a 1km radius study area of the site (as presented in Table 3).
274. The site is not located within a Conservation Area as designated by WBC, though the Mount Hermon Conservation Area is located 1km to the north-west of the site.

Table 3 Designated Built Heritage Assets located within 1km of the Site

Name and Address of Designated Asset	Grade	Listing	Approximate Distance from the Site (m)
Ashwood, Ashwood Road	Grade II	1259356	990
Howards Farm, Stockers Lane	Grade II	1236804	434
The Old Oak Cottage, 17, Vicarage Road	Grade II	1236811	547
The Old Cricketers And Cricketers Cottage, Westfield Common	Grade II	427914	804
Dormer Cottage And Garage, Bonsey Lane	Grade II	1442260	655
April Cottage, Guildford Road	Grade II	1044729	390
Church Of St Mary Of Bethany, York Road	Grade II	1236965	750
Elmbridge Cottage, Kingsfield Road	Grade II	1236576	208
Laurel Cottage, 6, Stockers Lane	Grade II	1264366	423
12, High Street	Grade II	1044732	826
34, High Street	Grade II	1044688	896
The Old Cottage, 29, High Street	Grade II	1044731	882
Hale Lodge	Grade II	1274853	992

275. The HEA identified that:
- The site is approximately 900m from the historic centre of Old Woking and there are no Scheduled Ancient Monuments recorded within the study area; and
 - The site remained undeveloped until the current football stadium was built in the early 20th century.
276. As part of the initial review, an assessment of the significance of the built heritage assets presented in

³³ Surrey County Council HER search no. 046/19, 08/03/2019.

³⁴ Old Maps Online <https://www.oldmapsonline.org/>, accessed 11/03/2019.

³⁵ Woking Borough Council www.woking.gov.uk, first accessed 11/03/2019.

³⁶ National Heritage List for England (NHLE), <https://historicengland.org.uk/listing/the-list/>, first accessed 11/04/2019.

Table 3 was also undertaken. In view of the findings set out above and the fact that all built heritage assets are located off-site (with the closest asset being over 200m from the site), it is considered that the implementation of mitigation measures will enable the potential effects of the Proposed Development on built heritage assets to be reduced as far as reasonably practicable. The details of such works required will be presented within a Heritage Statement, which will be prepared to accompany the planning application.

277. The Heritage Statement will:

- Present and describe all the heritage assets (along with their significance) that have the potential to be affected by the Proposed Development;
- Describe and assess the potential impact of the Proposed Development in terms of how the heritage asset and its setting will be altered or affected; and
- Determine and define in detail the mitigation measures which may be required to reduce the potential effect of the Proposed Development on the heritage assets.

278. Provided that the recommendations for further works (which will be set out in detail in the Heritage Statement) are secured by appropriately worded planning conditions, significant residual adverse environmental effects are not considered likely to arise in relation to built heritage assets or Conservation Areas. Heritage is, therefore, proposed to be scoped out of the EIA.

279. The Heritage Statement will reflect the Proposed Development and will be submitted as a standalone report alongside the planning application.

Geo-environmental (Land Contamination, Ground Conditions and Groundwater)

280. Jomas Associates have undertaken a Phase 1 Desk Study and a Qualitative Risk Assessment, in accordance with the relevant planning policy and guidance documents, including (but not limited to) the NPPF (2019), the EA's Contaminated Land Report 11 (CLR11): Model procedures for Management of Land Contamination (2004), and the EA's Guiding Principles for Land Contamination (GPLC1) (2010).

281. The Phase 1 Desk Study comprised a review of the site and the site vicinity. This included a site walkover, a review of third-party environmental database reports (Groundsure EnviroInsight and GeoInsight Reports), a review of the publicly available information, and information obtained from regulatory bodies. The Phase 1 Desk Study report is presented in Appendix A of this report.

Existing and Historical Uses On and Surrounding the Site

282. The site currently comprises a football stadium (Woking Football Club); a collection of large-footprint low-rise buildings, including (but not limited to) the Woking Snooker Centre and David Lloyd facilities (including tennis courts), car parking, and a small number of residential properties situated in the north of the site. The site is primarily covered by hardstanding and vegetation located within the soft landscape area (i.e. the football pitch, shrubs, weeds and trees) of the site.

283. A review of historical maps indicates that from 1871 to the early 1930s, the site was undeveloped and / or used as agricultural land. Change was first noted on-site in 1934, comprising the development of a sports ground, including some pavilions and a tennis ground towards the south of the site. On the plan dated 1966, residential style buildings were developed within the northern part of the site, located directly to the north of the sports ground and pavilions. From 1992 onwards, numerous larger buildings were developed on-site including a tennis centre, gymnasium and snooker hall. The current site is considered to represent its present-day configuration from the plan dated 1992, with no significant changes noted on historical maps dated 2002 to 2014. A review of satellite imagery confirms the site has remained the same with no significant changes noted from 2014.

284. The site vicinity (within approximately 500m) on the earliest available historical maps predominantly consisted of undeveloped and / or agricultural land from 1871 through to 1897. Waterbodies are noted on these plans as a large pond and river, located to the east and north-east of the site respectively. Development of minor buildings are noted to the north of the site. From the plan dated 1935, residential style building developments are noted within the immediate vicinity of the site; the surrounding residential setting shows no significant changes from this date to the historical maps dated 2002 to 2014. A review of satellite imagery confirms that the residential setting of the site vicinity has remained present from 2014.

Geology

285. The British Geological Survey (BGS) mapping indicates that the site is mainly underlain by superficial sand and gravel deposits of the Kempton Park Gravel Formation; this is described as having an average thickness of 6m (but is much thicker where infilled deep hollows). Superficial sand and gravel deposits of Alluvium are reported to encroach onto the site, along the northern boundary.

286. The superficial deposits noted above are underlain by solid sand deposits of the Bagshot Formation. Solid deposits of the London Clay Formation are noted to encroach onto the site, along the south-eastern boundary.

Unexploded Ordnance Risk Assessment

287. The Phase 1 Desk Study included some basic commentary on unexploded ordnance (UXO), based on publicly available data. This did not comprise a formal UXO assessment; however, a review of the initial data indicates a low risk from UXO. Low-risk regions are those that show a bomb density of up to 10 bombs per 1000 acres.

Hydrogeology and Hydrology

288. The closest watercourse to the site is the Hoe Stream, which is located approximately 50m to the north-west of the site and is classified by the EA as a 'main river'³⁷.

289. There are no source protection zones located within 500m of the site, and no groundwater, surface water or potable water abstraction licences reported within 1km of the site. The closest groundwater abstraction is located approximately 1.3km to the south of the site; the closest surface water abstraction is situated approximately 1.2km to the south-east of the site; and there are no potable water abstractions within 2km of the site.

Qualitative Risk Assessment

290. Based on the information reviewed as part of the Phase 1 Desk Study, a qualitative risk assessment based on professional experience has been undertaken, highlighting the potential sources, pathways and receptors for the site. A number of source, pathway and receptor linkages were identified with regards to the potential risk of ground contamination sources (both on-site and within its vicinity) and their effect on human health and / or controlled waters.

291. The following sources of potential ground contamination have been identified for the site, as detailed in the Phase 1 Desk Study report:

- Potential for Made Ground associated with previously development operations on-site (Source 1 (S1));
- Potential asbestos containing materials within existing buildings on-site (S2); and
- Potential ground gas generation from nearby landfill site off-site (S3).

³⁷ Main Rivers described by the EA as following "usually larger rivers and streams".

292. The following sensitive receptors have been identified for the site:

- Demolition and construction workers (Receptor 1 (R1));
- Future maintenance workers (R2);
- Neighbouring site users (R3);
- Future site users (R4);
- Building foundations and on site buried services (R5);
- Controlled waters – Secondary (A) aquifer (R6); and
- Surface water – Pond and Hoe Stream (R7).

293. The Qualitative Risk Assessment for the site indicates a moderate to low risk with regards to the potential sources of contamination and sensitive receptors detailed above.

Risk (Mitigation) Measures

294. Following the Phase 1 Desk Study and Qualitative Risk Assessment (presented in Appendix A of this Scoping Report), an intrusive site investigation was recommended to clarify the potential risks to the identified receptors. The investigation is currently being undertaken to confirm the potential risks to receptors. At this stage it is considered likely that the implementation of remediation measures (during demolition and construction or as part of the design of the completed and operational Proposed Development) will be required. These will need to be implemented to ensure that the Proposed Development is suitable for use. These measures are likely to comprise the encapsulation of any contaminated soils beneath hardstanding / building cover, the use of clean imported soils in soft landscaping, the implementation of ground gas mitigation (ventilation and barriers, etc.) within buildings, and the incorporation of suitable water supply pipe materials.

295. Any potential remedial measures for the Proposed Development will be outlined in the final ground investigation report that will be submitted alongside the planning application.

Summary

296. On the basis of the above (assuming the relevant mitigation measures are implemented), it is considered that the Proposed Development would unlikely generate any significant effects associated with land contamination, ground conditions and controlled waters. Therefore, it is proposed that Geo-environmental is scoped out of the ES and good practice measures (with respect to land contamination, ground conditions and controlled waters) will be cited within the ES (**ES Volume 1, Chapter 14: Mitigation and Monitoring**).

Water Resources

Flood Risk and Surface Water Drainage

Flood Risk

297. According to the EA's flood map for planning³⁸, the site is located entirely within Flood Zone 1 (which is classified as an area where the probability of fluvial and tidal flooding would be low in the absence of flood defences); however, Flood Zone 2 (an area where the probability of fluvial and tidal flooding would be medium in the absence of flood defences) and Flood Zone 3 (an area where the probability of fluvial and tidal flooding would be high in the absence of flood defences) are located approximately 16m north-west of the site.

³⁸ EA, (2019); Flood Map for Planning (<https://flood-map-for-planning.service.gov.uk/>).

298. EA mapping indicates that the majority of the site has a 'very low' surface water flood risk. There are currently some ponded areas with up to a 'medium' surface water flood risk in the south and north of the site, associated with areas of hardstanding. The risk of surface water flooding will be assessed within the FRA which will form part of the planning application.

299. From a review of WBC's Strategic Flood Risk Assessment (SFRA) (2015)³⁹, it is concluded that the site is located in an area with limited potential for groundwater flooding.

300. The SFRA also includes Thames Water sewer flooding records from the past 20 years, which identifies that the site is located in an area with 33 records of sewer flooding during this period. However, there are no details on the locations of sewer flooding incidents in relation to the site and therefore, the risk of sewer flooding cannot be ruled out. The risk of sewer flooding will be assessed within the FRA which will form part of the planning application.

301. Base on the EA flood maps, the site is not located within an area at risk of reservoir flooding.

302. In accordance with the NPPF's requirements (as the site is larger than 1 ha in size), due to the close proximity of flood zones and the flood risk to the site, and in accordance with Defra's requirements⁴⁰ to achieve greenfield runoff rates, a FRA will be required to:

- Assess flood risk associated with climate change predictions (to ensure that the Proposed Development is safe for its operational lifetime); and
- Assess the risk of flooding from all sources and ensure that no adverse effects relating to flood risk or drainage are generated by the Proposed Development

303. Therefore, a FRA will be prepared and submitted in support of the planning application, and mitigation measures will be proposed where necessary.

304. The FRA will investigate the potential sources of flooding at the site and for the Proposed Development; it will also demonstrate that any flood risk to the Proposed Development, or caused by the Proposed Development, will be mitigated through the use of appropriate design solutions and management procedures.

305. The FRA will be informed by consultation with key stakeholders including the EA, WBC, Affinity Water (the water provider) and Thames Water (the sewerage provider).

306. In summary, the FRA will include the following:

- Risk of flooding from all sources (e.g. tidal, surface water, groundwater and artificial water sources (e.g. reservoirs)) which could affect the site;
- Details of any historical flooding events;
- Acceptability of the proposed land use in relation to known flood zones;
- Impacts / benefits of flood defences;
- Climate change effects;
- Access and egress arrangements;
- Mitigation measures embedded into the Proposed Development to reduce the risks associated with flooding (e.g. raised ground floors);

³⁹ WBC, (2015); Strategic Flood Risk Assessment.

⁴⁰ DEFRA. (2013). Sustainable Drainage Systems. Non-statutory technical standards for sustainable drainage systems.

- Residual flood risk;
- Volume of surface water runoff likely to be generated by the development;
- Details of existing and proposed surface water drainage; and
- Appropriate strategies for surface water and foul drainage.

Designations, Abstractions and Pollution Incidents

307. The Preliminary Risk Assessment Report⁴¹ undertaken by Jomas Associates Ltd (presented in Appendix A) includes a Groundsure EnviroInsight Report for the site and this identifies that there are no records of any pollution incident within the site or up to a 250m radius of the site. There are no recorded discharge consents within the site, and no recorded groundwater, surface water and potable water abstractions within the site or within a 500m radius of the site.

Proximity to Watercourses

308. The closest watercourse to the site is the Hoe Stream which is located approximately 48m to the north-west of the site. This is classified by the EA as a 'Main River'⁴². From reviewing Ordnance Survey mapping, there are no other significant water features within the site or surrounding area.

Surface Water Drainage

309. From reviewing the SFRA, the site is not located within a Critical Drainage Area (CDA).
310. The SFRA states that “*All development must aim to achieve pre-development greenfield run-off rates. If this is not proposed evidence must be submitted demonstrating why it has not been possible to achieve the greenfield run-off rate and why it is only possible to achieve the proposed discharge rate.*” In addition to this, Defra’s Non-Statutory Technical Standards⁴³ require all new major developments to aim to achieve greenfield runoff rates.
311. The inclusion of sustainable drainage systems (SuDS) will ensure that run-off from the completed and operational Proposed Development will be controlled and stored on-site, prior to discharge.
312. It is important to also consider the control of surface water runoff during the demolition and construction of the Proposed Development. It is anticipated that this will be covered within a Construction Environmental Management Plan (CEMP), which will be prepared and submitted as part of the planning application, and will specify mitigation measures required to ensure that the demolition and construction of the Proposed Development will not increase surface water runoff within the site or elsewhere (i.e. off-site).
313. A detailed Surface Water Drainage Strategy will also be prepared to ensure that surface water runoff is discharged appropriately and is compliant with the target discharge rates. The design principles set out in the Surface Water Drainage Strategy and its conclusions will be presented in the ES (**ES Volume 1, Chapter 4: The Proposed Development**).
314. The surface water drainage strategy will allow for a reduction in surface water discharge rates compared to the existing situation, in line with local policy requirements.
315. Through a well informed and considered design process with regard to flood risk, and surface water considerations, coupled with appropriate measures to manage the residual flood risk at the site following redevelopment, no likely significant effects associated with flooding and surface water drainage are anticipated.

⁴¹ Jomas Associates Limited, (2018); Desk Study/Preliminary Risk Assessment Report for Woking Football Club.

⁴² Environment Agency. 2013. Water Stressed Areas – Final Classifications.

⁴³ DEFRA. (2013). Sustainable Drainage Systems. Non-statutory technical standards for sustainable drainage systems.

316. In recognition that a FRA and Surface Water Drainage Strategy will be prepared and submitted as standalone reports in support of the planning application, the results and conclusions of the FRA and Surface Water Drainage Strategy will be presented in the ES (**ES Volume 1, Chapter 4: The Proposed Development**).

Controlled Waters

317. There is the potential risk of contamination of controlled waters (surface water and groundwater) as a result of the Proposed Development during both the construction and operational phases of the development. This is discussed in the 'Geo-environmental' section of this Scoping Report.

Water Demand and Wastewater (Foul Drainage)

Water Demand

318. According to the EA’s Water Stressed Areas – Final Classification 2013⁴⁴ report, the site is located in an area which is classified to have a water stress classification of ‘serious’ for 2013 and its future scenarios. Whilst it is the remit of Affinity Water to ensure that sufficient water supply is provided for new developments in Woking, as there is potential for the Proposed Development to generate an increase in water demand, sustainable design measures would be adopted to minimise such an increase. Therefore, it is considered that no likely significant effects associated with water demand are expected.

319. Consultation will be undertaken with Affinity Water and, if necessary, infrastructure improvements may be required and requested to supply the Proposed Development. Such consultation and details of water efficiency measures, to reduce water usage, will be summarised within the ES (**ES Volume 1, Chapter 4: The Proposed Development**).

Wastewater (Foul Drainage)

320. It is likely that the Proposed Development will also result in an increase of wastewater flows; therefore, consultation with Thames Water (the sewerage provider) will be undertaken to understand any existing capacity constraints on the foul water drainage network.
321. The Proposed Development will, however, incorporate water efficiency measure to reduce (as far as possible) the volume of foul water discharged to the network. Therefore, in combination with the foul water drainage design, it is anticipated that the Proposed Development will reduce the overall magnitude of the impact of the Proposed Development on the foul drainage / sewer network.
322. A Foul Drainage Strategy (combined with the Surface Water Drainage Strategy) will be prepared, which will identify whether there is capacity within the local foul sewerage network to supply the Proposed Development and present strategic options for foul water management at the site.
323. It is anticipated that any required upgrades to the foul water drainage network would be discussed with Thames Water and ultimately be undertaken by Thames Water, to increase the capacity of the sewer network and enable it to accommodate additional flows from the Proposed Development and other redevelopment schemes across Woking.
324. In recognition that the Surface Water and Foul Drainage Strategy will define the principles of the design of the foul drainage network within the site (and the link up to the surrounding public sewer network) and identify strategic options for foul water management at the site, no likely significant effect associated with wastewater discharges are anticipated as a result of the Proposed Development (subject to discussions with Thames Water and the addressing of any strategic capacity issues across the public sewer network).

⁴⁴ Environment Agency. 2013. Water Stressed Areas – Final Classifications.

325. The design principles set out in the Surface Water and Foul Drainage Strategy, and its conclusions, will be presented in the ES (*ES Volume 1, Chapter 4: The Proposed Development*). As noted above, the Surface Water and Foul Drainage Strategy will be submitted as a standalone document to accompany the planning application.

Summary

326. Taking into account the above approach and the proposed mitigation / management measures, it is considered that the Proposed Development is unlikely to give rise to significant residual effects with respect to flood risk, drainage and water demand. Additionally, in recognition of the expected residual flood risk to the site, a FRA and a Surface Water & Foul Drainage Strategy will be prepared and submitted in support of the planning application. Therefore, it is proposed that water resources, drainage and flood risk is scoped out of the EIA.

Ecology

327. A Preliminary Ecological Appraisal (PEA) of the site has been undertaken by The Ecology Consultancy. This comprised an extended Phase 1 habitat survey, protected species assessment and ecological evaluation.

328. A data search was requested from Surrey Biodiversity Information Centre (SBIC), to obtain information on non-statutory designated sites and protected species within 2km of the site.

329. The appraisal was prepared with reference to best practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2018), and as detailed within British Standard 42020:2013⁴⁵.

330. The Phase 1 habitat survey was undertaken in February 2019, in mild, sunny and dry conditions. It covered the entire site within the red line boundary. The PEA is presented within Appendix D, a summary of which is provided below.

331. The main findings of the PEA are as follows:

- The site is predominantly comprised of hardstanding and existing buildings. There were areas of introduced shrub on the boundaries of the site, areas of amenity grassland, an area of continuous scrub, scattered trees and a length of native hedgerow present on-site;
- The site is not subject to any statutory nature conservation designations. There are two European statutory nature conservation designations within a 5km radius of the site⁴⁶, and three national statutory designated sites within a 2km radius of the site. The closest statutory designated site to the site is the White Rose Lane Local Nature Reserve (LNR), located approximately 815m to the north-east;
- The site is not subject to any non-statutory nature conservation designations; however, there are nine non-statutory designated sites (Sites of Nature Conservation Interest (SNCI)) present within a 2km radius of the site. The closest non-statutory designated site is Hoe Stream SNCI, which is located approximately 30m to the north-west of the site. This site is important in the borough and provides a valuable link and habitat corridor for the SNCI sites in the nearby Hoe Valley SNCI corridor;
- The Proposed Development is not expected to impact on any designated sites, as best practice pollution prevention guidelines will be adhered to;

⁴⁵ British Standard, (2013); British Standard 42020:2013 Biodiversity – Code of Practice for Biodiversity and Development.

⁴⁶ <https://magic.defra.gov.uk>

- There are three records of ancient woodland situated within 2km of the site. Habitats of Principal Importance (HPI) have also been recorded within 2km of the site; lowland heathland, deciduous woodland, traditional orchard, and wood-pasture and parkland⁴⁷. These habitats were not found on the site;
- Four of the existing buildings on-site (B10, B11, B12 and B16, as shown on Figure 1 of the PEA presented in Appendix D) were assessed as having low potential to support roosting bats. Further survey work (i.e. a Preliminary Bat Roost Assessment, followed by evening emergence / dawn re-entry surveys between May and August) is required to determine the presence / likely absence of roosting bats in these buildings;
- The habitats on-site are not considered to offer significant foraging opportunities for bats, but the introduced shrub and outgrown hedgerow on the boundaries of the site have potential to support commuting bats as a corridor through the landscape, linking suitable foraging habitats (such as the waterbody to the north-east of the site and the Hoe Stream SNCI to the south-west). Most of the existing boundary planting will be retained as part of the Proposed Development and should be enhanced where possible. Night-time lighting of these areas should be avoided;
- The hedgerow, continuous scrub and introduced shrub on-site have the potential to support great crested newt during its terrestrial phase and there is a waterbody located approximately 30m to the east of the site. Further survey of the waterbody on the adjacent land to determine the presence / likely absence of great crested newt on-site was undertaken on 15th April 2019. The survey included a Habitat Suitability Index (HSI) assessment and eDNA analysis in accordance with Natural England guidelines. The results of the eDNA survey confirmed the likely absence of great crested newt in the pond and, therefore, great crested newt is considered likely to be absent from the site;
- The site contains some habitat considered suitable to support widespread reptile species on the boundaries of the site, and much of this habitat will be retained as part of the Proposed Development. It is considered that reptile surveys are not necessary, but precautionary working practices will be implemented to protect any reptiles (should they be present) during any vegetation removal. Areas of shrubs and scrub that may provide cover or hibernation sites will be carefully removed by hand, using hand-held tools, when reptiles are active (i.e. March to September), and taken off-site; and
- The existing introduced shrub, scrub and scattered trees on-site have potential to support breeding birds. Any vegetation removal work required will be carried out from September to February inclusive, to avoid any potential offences relating to breeding birds. If vegetation removal during the breeding season is unavoidable, potential nesting habitat will be inspected immediately before work commences and any active nests will be protected until the young have fledged.

332. Following completion of the PEA and subsequent great crested newt survey, it is considered that the site has the potential for protected species; bats, widespread reptiles, and breeding birds. Further survey work is required to assess the presence / likely absence of roosting bats.

333. It should be noted that whilst further survey work is required, it is considered unlikely that the site would support rare species, diverse assemblages or large populations of any noteworthy species. This is because the site is comprised of mostly unnatural and poor-quality habitats, within an urban location.

334. Any potential impacts and legislation breaches relating to widespread reptiles and breeding birds will

⁴⁷ <https://magic.defra.gov.uk>

be mitigated by timing vegetation removal works to avoid the reptile hibernation season and bird nesting season, or by a suitably qualified ecologist undertaking a check for nests immediately ahead of works commencing during the bird breeding season and ensuring the protection of any active nests.

335. Any effects on other protected or otherwise notable species are considered unlikely to be significant.
336. Options to enhance the biodiversity value of the site and to achieve a net gain for biodiversity on-site, in accordance with national and local planning policies, and the Biodiversity & Planning in Surrey document⁴⁸, comprise the inclusion of biodiverse green roofs which can be used in combination with PV panels (biosolar roof, i.e. solar panels with biodiverse grassland planting beneath), sustainable drainage systems (SuDS), wildlife planting, flowering lawns; and the provision of bird nesting and bat roosting opportunities, which will be aspired to during the design of the Proposed Development.
337. Given that great crested newt is confirmed as likely to be absent from the site and under the assumption that roosting bats are confirmed as likely to be absent from site through ongoing surveys, provided that standard mitigation measures outlined above are adhered to, it is considered the Proposed Development is unlikely to generate significant effects on ecological features. Therefore, it is proposed to scope ecology out of the EIA for this site. The PEA will be updated to reflect the final Proposed Development submitted for planning and will be submitted alongside survey reports for great crested newt and bats, as appendices to the ES.

TV and Radio Interference

338. The need for a television ('TV') and radio interference assessment as part of the EIA has been considered by Trium.
339. Interference to certain telecommunications systems (e.g. television (TV), mobile phone and radio) can arise from buildings physically blocking and absorbing associated signals. This interference can result in a loss or degradation of the reception of such systems; the affected interference area is referred to as the 'shadow area'.
340. Domestic dwellings where TV is watched, or radio is listened to as an amenity, are identified as sensitive receptors. Places where the provision of TV or radio form part of a commercial premises (e.g. hotels, offices and shops), are not identified as sensitive receptors⁴⁹.

Radio Signals

341. Due to radio signals being at lower frequencies, they can 'bend' to a greater extent around buildings (or other obstructions) when compared to TV signals. Radios are also able to make constructive use of reflected signals. As such, radio signals are able to operate successfully in dense urban settings (i.e. containing a large density of tall and large buildings) and, consequently, radio reception (both analogue and digital) is not considered to be at risk of degradation as a result of the Proposed Development. No likely significant effects to radio reception (both analogue and digital) are, therefore, anticipated as a result of the Proposed Development.

Terrestrial TV Reception

342. Terrestrial (land based) TV signals are transmitted in digital format (Digital Terrestrial TV (DTTV) i.e. freeview). The site and the surrounding area receive DTTV signals from both the Crystal Palace (Freeview) transmitter mast, located approximately 36km to the north-east of the site, and Guildford (Freeview) transmitter mast, located approximately 9km to the south-west of the site. The site and

⁴⁸ Surrey Nature Partnership (2018). Biodiversity & Planning in Surrey – Version 3 (November 2018). Including Appendix 2 for HPis and SPLs for Woking Borough. <https://surreynaturepartnership.org.uk/our-work/> [accessed 27/02/2019].

⁴⁹ This differentiation has been consistently used by the relevant United Kingdom (UK) government agencies (currently Office of Communications (Ofcom)) since the inception of TV services in the UK.

surrounding area receives good coverage for all channels from both transmitters.

343. In view of the above, any resultant DDTV shadow areas from the Crystal Palace transmitter mast will fall to the south-west of the site. Conversely, any resultant shadow areas from the Guildford transmitter mast will fall to the north-east of the site.
344. As the Proposed Development will provide five residential blocks between 2 and 10 storeys in height, in addition to the football stadium, the lower elements of the residential blocks are not anticipated to produce any DDTV shadows; therefore, the potential impact is expected to be negligible, and so is not anticipated to have an effect on the DTTV reception received by surrounding residential properties. However, there may be some areas of DTTV interference as a result of the taller elements of the Proposed Development's residential blocks (up to 8 to 10 storeys in height), as follows:
- Disturbances to DDTV reception from Crystal Palace transmitter mast – Any DDTV shadow produced by the Proposed Development will fall to the south-west of the site and will potentially cause disturbance to DDTV signal received by residential dwellings along Westfield Avenue, Acer Grove, and the north of Westfield Grove. It is likely that some of the residential dwellings in this area currently receive DDTV reception from the Guildford transmitter mast and will not be affected by disturbances to reception from the Crystal Palace transmitter mast. However, residential dwellings which currently receive DDTV reception from Crystal Palace transmitter mast (and are located closest to the south-west of the Proposed Development) are likely to experience loss or degradation of DDTV reception. Measures to mitigate this effect would include increasing the height or gain of the affected aerials, or angling the aerials atop the affected residential dwellings in order for the residential properties to receive DTTV reception from the Guildford transmitter mast, which provides good reception in this area; and
 - Degradation or loss of DDTV reception from the Guildford transmitter mast - Residential dwellings located to the north-east of the Proposed Development are unlikely to experience any degradation or loss of DDTV signal from the Guildford transmitter mast, as the tallest elements of the Proposed Development are located along the southern and western sides of the site. However, if any disturbances to DDTV signal from the Guildford transmitter mast are experienced by residential dwellings along Kingfield Road or Kingfield Drive, these could be easily mitigated by increasing the height or gain of the affected aerials atop the affected residential dwellings, or by angling the aerials in order for the residential properties to receive DTTV reception from the Crystal Palace transmitter mast, which provides good reception in this area.

Satellite TV Reception

345. Due to the geo-stationary positioning of the satellites in relation to Woking, satellite TV shadow areas will fall to the north-west of the site.
346. There is no potential for a loss or degradation to satellite TV reception received by residential dwellings as a result of the Proposed Development, due to the height of the buildings proposed and the satellite TV reception shadow not falling over any residential dwellings.

Summary

347. Based on the information available, it can be concluded that there is minimal potential for a loss or degradation to radio signals or DTTV received by residential dwellings as a result of the Proposed Development. As the site and surrounding area is served by two different DDTV transmitter masts, where reception to one is degraded (depending on a residential property's location in relation to the site), mitigation for any loss or degradation to DDTV reception can include increasing the height or gain of the affected aerials atop the affected residential dwellings, or re-angling aerials from another satellite transmitter to receive its DTTV reception.

348. No significant effects are considered likely in relation to satellite TV reception. On this basis and taking into account the size and extent of the Proposed Development, it is proposed that TV and radio interference is scoped out of the ES.

Waste and Recycling

349. The predominant waste and recycling effects, anticipated to arise from the demolition and construction, and operation of, the Proposed Development, on sensitive receptors include:

- The composition of waste (i.e. whether the waste generated is inert, or whether it comprises waste potentially hazardous to human health, requiring specialist management e.g. asbestos containing materials (ACMs) or hazardous waste) and the potentially negative impacts on demolition and construction workers, and future on-site users (sensitive receptors); and
- The quantity of waste generated and the subsequent impacts on the local waste management infrastructure (receptor sensitive to this impact), when considering the existing capacity of the local infrastructure, and current and future apportionment targets.

Mitigation

Demolition and Construction

350. Mitigation measures to avoid, remedy or mitigate adverse effects in terms of waste and recycling during the demolition and construction of the Proposed Development can include (but are not limited to) the:

- Provision of a CEMP or Site Waste Management Plan (SWMP) to include waste reduction and management objectives;
- Appropriate management of any potential contamination identified on-site; and
- Minimisation of stockpiling of construction materials.

351. The specific mitigation measures to be implemented throughout the demolition and construction works will be outlined within the introductory chapters of the ES. Through the implementation of mitigation measures, the quantities of waste generated will be minimised. Providing measures in the CEMP are enforced and adhered to, significant adverse effects on sensitive receptors, pertaining to the quantity and composition of waste during the demolition and construction of the Proposed Development, are considered unlikely.

Completed and Operational Development

352. An Operational Residential Waste Strategy will be prepared and will calculate waste storage provisions based on a unit mix and area schedule, and outline associated waste management measures. The Proposed Development will be designed to accommodate the required waste storage.

353. An operational waste strategy for the stadium element of the Proposed Development will also be prepared and will be incorporated into the Design and Access Statement; the strategy will calculate waste storage provisions for both the kitchens and the concourses.

354. In particular, the strategies (for the residential and stadium elements of the Proposed Development) will provide details on how each waste stream generated from each use class of the completed and operational Proposed Development will be managed, and how waste will be reduced, minimised and recycled, where possible (in accordance with WBC's policy / guidance and in line with the waste hierarchy). Measures relating to the completed and operational Proposed Development, including a summary of the waste strategy, will be presented in the introductory chapters of the ES.

Summary

355. With mitigation measures in place, it is considered that significant waste effects would be unlikely. As

such, no technical waste assessment is proposed to be undertaken, but as stipulated above, will be referenced as appropriate within the ES.

356. Any impacts associated with the transportation of waste (particularly in demolition and construction) will be dealt with, where applicable, in the technical chapters of the ES.

357. A waste and recycling assessment is, therefore, proposed to be scoped out of the EIA.

FORMAT AND CONTENT OF THE EIA

358. The proposed scope and structure of the ES is as follows:

- **ES Volume 1: Main ES** – a document which forms the main body of the ES and which comprises of the following non-technical and technical chapters:
 - Chapter 1: Introduction
 - Chapter 2: EIA Methodology;
 - Chapter 3: Alternatives and Design Evolution;
 - Chapter 4: The Proposed Development;
 - Chapter 5: Demolition and Construction;
 - Chapter 6: Socio-Economics;
 - Chapter 7: Highways and Transport;
 - Chapter 8: Air Quality;
 - Chapter 9: Noise and Vibration;
 - Chapter 10: Wind Microclimate;
 - Chapter 11: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare;
 - Chapter 12: Effect Interactions;
 - Chapter 13: Likely Significant Effects and Conclusions;
 - Chapter 14: Mitigation and Monitoring Schedule; and
 - Chapter 15: Glossary and Abbreviations.
- **ES Volume 2: Townscape and Visual Impact Assessment** – a separate townscape and visual impact assessment (TVIA) document that will be accompanied by a full set of views and verified images, as agreed with WBC as part of this EIA Scoping Process:
- **ES Volume 3: Technical Appendices** – comprises background data, technical reports, tables, figures and surveys. The following appendices are currently envisaged
 - Appendix EIA Methodology;
 - Appendix Socio-Economics;
 - Appendix Highways and Transport;
 - Appendix Air Quality;
 - Appendix Noise and Vibration;
 - Appendix Wind Microclimate; and
 - Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare.
- **ES Non-Technical Summary (NTS)** - this will be a separate document providing a concise description of the Proposed Development, the alternatives considered, any identified mitigation measures and the residual likely significant environmental and socio-economic effects.

359. Schedule 4 of the EIA Regulations sets out the information for inclusion within an ES. In response to this Schedule of the EIA Regulations, Appendix E to this EIA Scoping Report provides a 'way-finding' table which sets out the information for inclusion within an ES and where this information will be presented within the ES.

REQUEST FOR AN EIA SCOPING OPINION

360. This Report requests a Scoping Opinion of the WBC pursuant to Regulation 15 of the EIA Regulations.

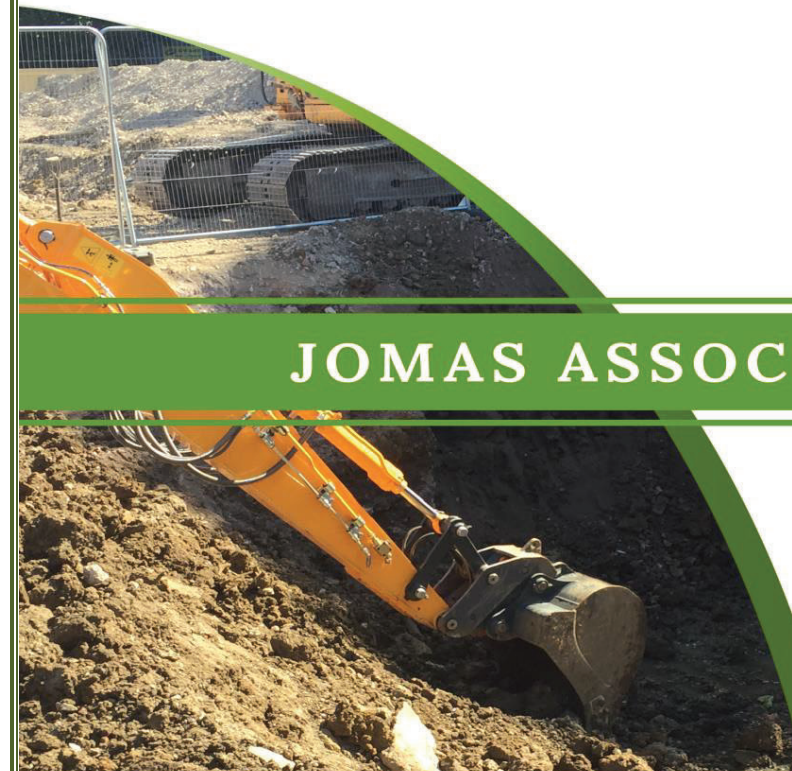
361. The EIA Scoping Report suggests a comprehensive scope of work based on previous experience of the assembled team of specialists and existing knowledge of the site. The WBC and consultees are invited to consider the contents of this Scoping Report and comment accordingly within the five-week period prescribed by the EIA Regulations.

APPENDIX A: Preliminary Risk Assessment

**DESK STUDY /
PRELIMINARY RISK ASSESSMENT
REPORT**

FOR

**WOKING FOOTBALL CLUB
LAITHWAITE COMMUNITY STADIUM
KINGFIELD ROAD
KINGFIELD
WOKING
GU22 9AA**



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Report Title: Desk Study/Preliminary Risk Assessment Report for Woking Football Club, Laithwaite Community Stadium, Kingfield Road, Kingfield, Woking, GU22 9AA.

Report Status: Final v1.0

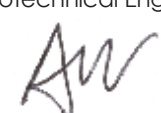
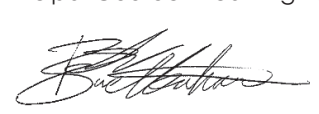
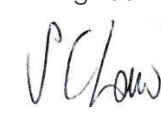
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QUALITY CONTROL - REVISIONS

Version	Date	Issued By

Prepared by: JOMAS ASSOCIATES LTD For: GOLDEV WOKING LTD

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APPENDIX 5 – LOCAL AUTHORITY CORRESPONDENCE

EXECUTIVE SUMMARY

Goldev Woking Ltd ('The client') commissioned Jomas Associates Ltd to undertake a desk study and preliminary risk assessment at Woking Football Club, Laithwaite Community Stadium, Kingfield Road, Kingfield, Woking, GU22 9AA. The principal objectives of the study were as follows:

- To determine the nature and where possible the extent of contaminants potentially present at the site;
- To establish the presence of significant contaminant linkages, in accordance with the procedures set out within the Environment Agency (EA) report R&D CLR11 and relevant guidance within the National Planning Policy Framework (NPPF);
- To assess whether the site is safe and suitable for the purpose for which it is intended, or can be made so by remedial action.

It should be noted that the table below is an executive summary of the findings of this report and is for briefing purposes only. Reference should be made to the main report for detailed information and analysis.

Desk Study	
Current Site Use	Commercial football ground with other leisure facilities.
Proposed Site Use	Mixed use residential and commercial development comprising residential flats surrounding a new football ground.
Site History	<p>A review of earliest available (1871) historical maps indicates that the site comprised undeveloped and/or agricultural land. From the 1934 plan development is noted on site as consisting of a sports ground, including a tennis ground towards the south and pavillions areas of worked ground are noted on this plan. Residential building development is noted within the northern part of the site in 1966. Large building developments are noted on the plan 1992 comprising a tennis centre, gymnasium and snooker hall.</p> <p>The site vicinity on the earliest available plan comprised predominately undeveloped and/or agricultural land. A large pond is located directly east of site, an inland river is also located towards the north of site. The site vicinity shows consistent building development noted as detached residential buildings. No significant changes to the site vicinity are noted from 1966 to the most recent historical map 2014.</p> <p>A historic landfill site is recorded 41m west of the site.</p>
Site Setting	<p>The British Geological Survey indicates that the site is mainly underlain by superficial sand and gravel deposits of both the Kempton Park Gravel Formation Alluvium along the northern boundary.</p> <p>The superficial deposits are underlain by solid sand deposits of the Bagshot Formation, deposits of the London Clay Formation are reported to encroach onto site along the south eastern boundary.</p> <p>The superficial deposits underlying the site are identified as a secondary (A) aquifer with the underlying solid deposits also identified as a secondary (A) aquifer. The underlying London Clay Deposits are identified as unproductive strata.</p> <p>A review of the EnviroInsight Report indicates that there are no source protection zones within 500m of the site.</p> <p>There are no groundwater, surface water or potable water abstractions reported within 1km of the site.</p> <p>The nearest detailed river entry is reported 39m north of the site, identified as How Stream. The nearest surface water entry is located 9m east, identified as a pond.</p>

Desk Study	
	The nearest reported Environment Agency Zone 2 floodplains is reported 16m north of site. The nearest Zone 3 floodplain is located 26m north of site.
• Potential Sources	<ul style="list-style-type: none"> • Potential for Made Ground associated with previous development operations – on site (S1) • Potential hydrocarbon impacted ground from unspecified historic tanks – on site (S2) • Potential asbestos containing materials within existing buildings – on site (S3) • Potential ground gas generation from unspecified pit and alluvium– on site (S4)
Potential Receptors	<ul style="list-style-type: none"> • Construction workers (R1) • Maintenance workers (R2) • Neighbouring site users (R3) • Future site users (R4) • Building foundations and on site buried services (water mains, electricity and sewer) (R5) • Controlled waters - secondary (A) aquifer (R6) • Surface water – pond located east of site (R7)
Preliminary Risk Assessment	<p>The risk estimation matrix indicates a moderate to low risk.</p> <p>It is recommended that an intrusive investigation is undertaken to clarify potential risks to the identified receptors. The investigation should assess the thickness of any made ground, and allow samples of made ground and natural soils to be taken for laboratory analysis.</p> <p>Soil gas monitoring should be undertaken in accordance with CIRIA C665.</p>
Potential Geological Hazards	<p>The Groundsure data identifies moderate to negligible risks – for full details see Section 4</p> <p>The GeoInsight report notes historical ground working features identified as an unspecified pit on site in 1955. Ground working features are also noted directly east of site, associated with a historic pond development. No other significant ground working features are noted within the vicinity.</p> <p>A geotechnical investigation is recommended to assess the significant potential for compressibility associated with the potential Alluvium.</p> <p>An intrusive investigation will also address the potential issue with ground plasticity and inform foundation design.</p>

1 INTRODUCTION

1.1 Terms of Reference

1.1.1 Goldev Woking Ltd (“The Client”) has commissioned Jomas Associates Ltd, to assess the risk of contamination posed by the ground conditions at a site referred to as the Woking Football Club, Laithwaite Community Stadium, Kingfield Road, Kingfield, Woking, GU22 9AA, prior to redevelopment of the site.

1.1.2 To this end a desk-based assessment has been undertaken in accordance with Jomas Associates Limited’s email proposal dated 02 February 2018.

1.2 Proposed Development

1.2.1 The proposed development is to comprise the demolition of the existing buildings and the construction of a new football stadium and surrounding residential apartments. A total of 5No blocks of flats are proposed to comprise a total of 1022No individual apartments. As part of this proposed development extensive areas of communal soft landscaping are anticipated.

1.2.2 A plan of the proposed development is included in Appendix 1.

1.2.3 For the purposes of the contamination risk assessment, the proposed development is classified as ‘Residential without plant uptake’.

1.2.4 For the purpose of geotechnical assessment, it is considered that the project could be classified as a Geotechnical Category (GC) 2 site in accordance with BS EN 1997 Part 1. GC 2 projects are defined as involving:

- Conventional structures.
- Quantitative investigation and analysis.
- Normal risk.
- No difficult soil and site conditions.
- No difficult loading conditions.
- Routine design and construction methods.

1.2.5 This will be reviewed at each stage of the project

1.3 Objectives

1.3.1 The objectives of Jomas Associates Limited’s investigation were as follows:

- To present a description of the present site status, based upon the published geology, hydrogeology and hydrology of the site and surrounding area;
- To review readily available historical information (i.e., Ordnance Survey maps and database search information) for the site and surrounding areas, with respect to potentially contaminative land uses;
- To provide an assessment of the environmental sensitivity at the site and the surrounding area, in relation to any suspected or known contamination which may significantly affect the site and the proposed development;

- To assess the potential presence of significant pollutant linkages, in accordance with the procedures set out within Part IIA of the Environmental Protection Act 1990, associated statutory guidance and current best practice including the EA report R&D CLR 11;
- To identify and assess geotechnical issues that may affect the site.

1.4 Scope of Works

1.4.1 The following tasks were undertaken to achieve the objectives listed above:

- A walkover survey of the site;
- A desk study, which included the review of third party environmental database reports (attached in Appendix 2 and Appendix 3);
- The compilation of this report, which collects and discusses the above data, and presents an assessment of the site conditions, conclusions and recommendations.

1.5 Supplied Documentation

1.5.1 Jomas Associates were not supplied with any previously produced reports at the time of writing this report.

1.6 Limitations

1.6.1 Jomas Associates Ltd has prepared this report for the sole use of Goldev Woking Ltd in accordance with the generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon by any other party without the explicit written agreement of Jomas Associates Limited. No other third party warranty, expressed or implied, is made as to the professional advice included in this report. This report must be used in its entirety.

1.6.2 The records search was limited to information available from public sources; this information is changing continually and frequently incomplete. Unless Jomas Associates Limited has actual knowledge to the contrary, information obtained from public sources or provided to Jomas Associates Limited by site personnel and other information sources, have been assumed to be correct. Jomas Associates Limited does not assume any liability for the misinterpretation of information or for items not visible, accessible or present on the subject property at the time of this study.

1.6.3 Whilst effort has been made to ensure the accuracy of the data supplied, and analysis derived from it, there may be conditions at the site that have not been disclosed by the investigation, and could not therefore be taken into account. As with any site, there may be differences in soil conditions between exploratory hole positions. Furthermore, it should be noted that groundwater conditions may vary due to seasonal and other effects and may at times be significantly different from those measured by the investigation. No liability can be accepted for any such variations in these conditions.

1.6.4 Any reports provided to Jomas Associates Limited have been reviewed in good faith. Jomas Associates Limited cannot be held liable for any errors or omissions in these reports, or for any incorrect interpretation contained within them.

1.6.5 This investigation and report has been carried out in accordance with the relevant standards and guidance in place at the time of the works. Future changes to these may require a re-assessment of the recommendations made within this report.

1.6.6 ***This report is not an engineering design and the figures and calculations contained in the report should be used by the Structural Engineer, taking note***

that variations may apply, depending on variations in design loading, in techniques used, and in site conditions. Our recommendations should therefore not supersede the Engineer's design.

2 SITE SETTING

2.1 Site Information

2.1.1 The site location plan is appended to this report in Appendix 1.

Table 2.1: Site Information

Name of Site	Woking Football Club
Address of Site	Laithwaite Community Stadium Kingfield Road Kingfield Woking GU22 9AA
Approx. National Grid Ref.	500569 157301
Site Area (Approx)	4.95ha
Site Occupation	Mixed commercial and residential
Local Authority	Woking Borough Council

2.2 Walkover Survey

2.2.1 A site walkover survey was undertaken by Jomas Associates on 13 August 2018.

Table 2.2: Site Description

Area	Item	Details
On-site:	Current Uses:	Site consists of numerous developments surrounding a large football ground. The football ground has numerous stands surrounding its perimeter. Building uses on site include a large gymnasium, sports hall, gymnastics club and snooker centre. Small units on site are also utilised as a bar and club house associated with the football ground. An area of residential development is located within the northern part of site. Parking areas are located across site within hardstanding areas.
	Evidence of historic uses:	No evidence of historic uses noted.
	Surfaces:	Site is predominately covered by hardstanding asphalt and concrete cover. The football ground is grass covered with some minor areas of soft landscaping located across site.
	Vegetation:	Vegetation located within soft landscaping areas consists of shrubs, weeds and trees. Within the football ground the pitch is covered in well maintained turf. None of the vegetation observed showed signs of distress or dieback.

Area	Item	Details
	Topography / Slope Stability:	Site is generally flat with a minor slope noted within the car park located towards the south of site.
	Drainage:	Normal drainage facilities are installed with no issues noted.
	Services:	Site is connected to electrical and water services. The site is also assumed to be connected to communication services.
	Controlled waters:	None observed.
	Tanks:	None observed.
Neighbouring land:	North:	Residential
	East:	Residential
	South:	Sports ground
	West:	Residential

2.2.2 Key features noted during the walkover are shown on a site walkover plan, together with site photos, in Appendix 1.

2.3 Historical Mapping Information

2.3.1 The historical development of the site and its surrounding areas was evaluated following the review of a number of Ordnance Survey historic maps, procured from GroundSure, and provided in Appendix 3 of this report.

2.3.2 A summary produced from the review of the historical map is given in Table 2.3 below. Distances are taken from the site boundary.

Table 2.3: Historical Development

Dates and Scale of Map	Relevant Historical Information	
	On Site	Off Site
1871 – 1:10,560	Site consists of undeveloped and/or agricultural land.	The site vicinity within 500m consists predominately of undeveloped and/or agricultural land.
1897 – 1:10,560	No significant changes.	A large pond is located directly east of site in the area of Kingfield green, another water body is located 100m north east of site identified as a river. This feature is orientated north east to south west. Minor building development noted to the north within 500m of site.
1913 – 1:10,560	No significant changes.	Continued minor building development within 500m of site, no other significant changes.

Dates and Scale of Map	Relevant Historical Information	
	On Site	Off Site
1934/35 – 1:2,500 1:10,560	Site consists of a sports ground with some pavilions/stands including a tennis ground towards the south. A small area of worked ground is located close to the pavilions in the northern part of site. Additional building development noted as semi-detached buildings within the north western corner of site.	Significant building development noted within the immediate site vicinity. This comprises detached residential properties with private gardens. Areas of allotments and other sports ground are also located towards the south between the residential developments.
1955 – 1:10,560	No significant changes.	Continued building development noted within 500m of site, no other significant changes.
1966 – 1:2,500	The pavilions/stands have been extended, additional ground working features are noted as part of this development. Additional building development noted within the northern part of site.	Continued residential building development within 100m of site, no other significant changes.
1977/82 – 1:10,000	No significant changes.	No significant changes.
1992/94 – 1:10,000 1:1,250	Numerous large buildings developed within the southern half of site, these buildings include a tennis centre, gymnasium and snooker hall.	No significant changes.
2002/10/14 – 1:10,000	No significant changes.	No significant changes. The pond feature identified directly east of site is still present on this plan. The site vicinity consists predominately of terraced residential buildings within 500m of site.

Potentially polluting/contaminating uses/activities shown in **bold**

2.3.3 An aerial photograph supplied as part of the GroundSure EnviroInsight report and taken in April 2013 generally shows that the site comprises a football ground with large buildings and car parking facilities. The site vicinity consists predominately of residential buildings with large sports ground located to the south of site. This information coincides with the historical map review and the walkover.

2.4 Historical Industrial Sites

2.4.1 Groundsure have provided some information on historical industrial sites on and in the vicinity of the site. Table 2.4 below summarises the information provided, which is presented in further detail in the Enviroinsight in Appendix 2. Where the identified features have appeared on more than one map they have been counted multiple times and therefore the reported numbers are higher than the actual count.

Table 2.4: Industrial and Statutory Consents

Type of Consent/Authorisation	On site	Off-site (within 500m of site, unless stated otherwise)	Potential to Impact Site*
Potentially Contaminative Uses identified from 1:10,000 scale	1No report of an unspecified pit,	13No reported; nearest entry, nursery located 116m east.	✓

Type of Consent/Authorisation	On site	Off-site (within 500m of site, unless stated otherwise)	Potential to Impact Site*
mapping	dated 1955.		
Historical Tank Database	2No reports of unspecified tanks, dated 1993 and 1988.	None	✓
Historical Energy Features Database	None	29No reported; all entries identified as electricity substations, nearest located 38m north east.	X
Historical Petrol & Fuel Site Database	None	None	X
Historical Garage & Motor Vehicle Repair Database	None	3No reported; all entries identified as garages, nearest located 368m east.	X
Potentially infilled land	1No reported of an unspecified pit, dated 1955. With reference to historical mapping this is likely to comprise raised earthworks associated with former football stands.	19No reported; nearest entry, pond located 4m east. Other entries include pond located 9m north east and 15m east.	X
Tunnels	None	None located within 250m of site.	X

2.5 Industrial and Statutory Consents

2.5.1 The Groundsure EnviroInsight Report also provides information on various statutory and industrial consents on and in the vicinity of the site. The following section summarises the information collected from the available sources.

Table 2.5: Industrial and Statutory Consents

Type of Consent/Authorisation	On site	Off-site (within 500m of site, unless stated otherwise)	Potential to Impact Site*
Discharge Consents.	None	3No reported; nearest entry, Hoe Stream located 23m north west, revocation date July 2012.	✓
Water Industry Act Referrals	None	None	X
Red List Discharges	None	None	X
List 1 and List 2 Dangerous Substances	None	None	X
Control of Major Accident Hazards (COMAH) and Notification of Installations Handling Hazardous Substances (NIHHS) Sites.	None	None	X

Type of Consent/Authorisation	On site	Off-site (within 500m of site, unless stated otherwise)	Potential to Impact Site*
Planning Hazardous Substance Consents	None	None	X
Category 3 or 4 Radioactive substances Authorisations	None	None	X
Pollution Incidents (List 2).	None	1No reported; identified as inorganic chemical or product pollutant, located 349m north east. Water and land impact category 4 (no impact), air impact category 3 (minor).	X
Pollution Incidents (List 1)	None	None	X
Contaminated Land Register Entries and Notices.	None	None	X
Registered Landfill Sites.	None	1No reported; identified as historical Westfield Tip, located 41m west. Waste type noted as commercial and household. Date last recorded as December 1979.	✓
Waste Treatment and/or Transfer Sites.	None	None	X
Fuel Station Entries	None	None	X
Current Industrial Site Data.	None	7No reported; nearest entries, electrical features located 16m west and 41m north east.	X

* From a land contamination perspective

2.6 Previous Site Investigations

2.6.1 Jomas Associates are not aware of any previous site investigation undertaken at this site prior to this desk study.

2.7 Local Authority Information

2.7.1 Jomas have made a request to Woking Borough Council for information relating to contamination on the site and surrounding areas. A copy of the correspondence is included in Appendix 5.

2.7.2 A response is pending.

2.8 Planning Information

2.8.1 A review of the local authority's planning portal was undertaken on 16 August 2018 at '<https://caps.woking.gov.uk/online-applications/>'.

2.8.2 Although several applications were identified in the vicinity of the site, no documents containing useful information regarding ground conditions or potential contamination were identified.

2.9 Unexploded Ordnance

- 2.9.1 The initial data indicates that there is a low risk.
- 2.9.2 Low-risk regions are those that show a bomb density of up to 10 bombs per 1000 acres.
- 2.9.3 This does not comprise a full UXO risk assessment.

3 GEOLOGICAL & ENVIRONMENTAL SETTING

3.1.1 The following section summarises the principal environmental resources (geological, hydrogeological and hydrological) of the site and its surroundings.

3.1.2 The data discussed herein is generally based on the information given within the EnviroInsight Report and published information provided by the Environment Agency and British Geological Survey.

3.2 Solid and Drift Geology

3.2.1 The British Geological Survey indicates that the site is mainly underlain by superficial sand and gravel deposits of Kempton Park Gravel Formation. Superficial sand and gravel deposits of alluvium are reported to encroach onto site along the northern boundary.

3.2.2 The BGS describes the Kempton Park Gravel Formation to have an average thickness of 6m, but much thicker where infilled deep hollows. The description of this formation is as follows

“Sand and gravel, locally with lenses of silt, clay or peat.”

3.2.3 The alluvium deposits encroaching onto site from the north are described as

“Normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel.”

3.2.4 The superficial deposits are underlain by solid sand deposits of the Bagshot Formation, deposits of the London Clay Formation are reported to encroach onto site along the south eastern boundary.

3.2.5 The BGS describes the Bagshot Formation as consisting of

“pale yellow-brown to pale grey or white, locally orange or crimson, fine- to coarse-grained sand that is frequently micaceous and locally clayey, with sparse glauconite and sparse seams of gravel. The sands are commonly cross-bedded but some are laminated.”

3.2.6 The BGS describes the London Clay Formation as consisting of

“bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay. It commonly contains thin courses of carbonate concretions (‘cementstone nodules’) and disseminated pyrite. It also includes a few thin beds of shells and fine sand partings or pockets of sand, which commonly increase towards the base and towards the top of the formation. At the base, and at some other levels, thin beds of black rounded flint gravel occurs in places. Glauconite is present in some of the sands and in some clay beds, and white mica occurs at some levels.”

3.2.7 The Bagshot Formation is younger than the London Clay Formation. Consequently where the Bagshot Formation is initially encountered the London Clay may be encountered at depth.

3.2.8 Although artificial deposits are not reported within the site they are noted 8m to the east and as such may encroach onto the site. These artificial deposits are in the area identified as a pond during the historical map review. In addition, given the identified site history a thickness of Made Ground should be expected.

3.3 British Geological Survey (BGS) Borehole Data

3.3.1 As part of the assessment, the publicly available BGS borehole records from the surrounding area were reviewed.

3.3.2 No borehole records providing information on the underlying ground conditions were identified within 250m of the site boundary.

3.4 Hydrogeology & Hydrology

3.4.1 General information about the hydrogeology of the site was obtained from the EnviroInsight and / or the DEFRA “MAGIC” website.

Groundwater Vulnerability

3.4.2 The EA operates a classification system to categorise the importance of groundwater resources (aquifers) and their sensitivity to contamination. Aquifers were formerly classified as major, minor and non-aquifers, based on the amenity value of the resource. A major aquifer is a significant resource capable of producing large quantities of water suitable for potable supply. Minor aquifers produce water in varying quantities or qualities, and if utilised are of local importance. Non aquifers are low permeability strata, which contain no significant exploitable groundwater and have very limited capacity to transmit contaminants.

3.4.3 Since 1 April 2010, the EA’s Groundwater Protection Policy uses aquifer designations that are consistent with the Water Framework Directive. This comprises;

- **Secondary A** - permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers;
- **Secondary B** - predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.
- **Secondary Undifferentiated** - has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.
- **Principal Aquifer** – this is a formation with a high primary permeability, supplying large quantities of water for public supply abstraction.
- **Unproductive Strata** - These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Source Protection Zones (SPZ)

3.4.4 In terms of aquifer protection, the EA generally adopts a three-fold classification of SPZs for public water supply abstraction wells.

- Zone I - or 'Inner Protection Zone' is located immediately adjacent to the groundwater source and is based on a 50-day travel time. It is designed to protect against the effects of human activity and biological/chemical contaminants that may have an immediate effect on the source.
- Zone II - or 'Outer Protection Zone' is defined by a 400-day travel time to the source. The travel time is designed to provide delay and attenuation of slowly degrading pollutants.
- Zone III - or 'Total Catchment' is the total area needed to support removal of water from the borehole, and to support any discharge from the borehole.

Hydrology

- 3.4.5 The hydrology of the site and the area covers water abstractions, rivers, streams, other water bodies and flooding.
- 3.4.6 The Environment Agency defines a floodplain as the area that would naturally be affected by flooding if a river rises above its banks, or high tides and stormy seas cause flooding in coastal areas.
- 3.4.7 There are two different kinds of area shown on the Flood Map for Planning. They can be described as follows:
- Areas that could be affected by flooding, either from rivers or the sea, if there were no flood defences. This area could be flooded:
- from the sea by a flood that has a 0.5 per cent (1 in 200) or greater chance of happening each year;
 - or from a river by a flood that has a 1 per cent (1 in 100) or greater chance of happening each year.
- (For planning and development purposes, this is the same as Flood Zone 3, in England only.)
- The additional extent of an extreme flood from rivers or the sea. These outlying areas are likely to be affected by a major flood, with up to a 0.1 per cent (1 in 1000) chance of occurring each year.
- (For planning and development purposes, this is the same as Flood Zone 2, in England only.)
- 3.4.8 These two areas show the extent of the natural floodplain if there were no flood defences or certain other manmade structures and channel improvements.
- 3.4.9 Outside of these areas flooding from rivers and the sea is very unlikely. There is less than a 0.1 per cent (1 in 1000) chance of flooding occurring each year. The majority of England and Wales falls within this area. (For planning and development purposes, this is the same as Flood Zone 1, in England only.)
- 3.4.10 Some areas benefit from flood defences and these are detailed on Environment Agency mapping.
- 3.4.11 Flood defences do not completely remove the chance of flooding, however, and can be overtopped or fail in extreme weather conditions.

Table 3.1: Summary of Hydrogeology & Hydrology

Feature	On Site	Off Site	Potential Receptor?
Aquifer	Superficial:	Secondary (A)	Secondary (A) within 200m of site. ✓
	Solid:	Predominately Secondary (A) (Bagshot Formation), Unproductive strata within south eastern corner of site (London Clay Formation).	Secondary (A) within 250m of site, Unproductive strata towards the south east of site. ✓
Source Protection Zone	None	None	X
Abstractions	Ground water	None	2No reported within 2km; nearest active entry located 1275m south. X
	Surface water	None	10No reported within 2km; nearest active entry located 1158m south east. X
	Potable	None	None within 2km; X
Surface Waters	None	Nearest entry located 9m east, identified as a pond. Other entries include inland river reported 39m north, identified as Hoe Stream. ✓	
Flood Risk	EA Flood Zone 2	None	Nearest entry located 16m north west, other entries located 20m north. -
	EA Flood Zone 3	None	Nearest entry located 26m north west, other entries located 28m west. -
	RoFRaS	Very low	Nearest entry located 17m north west reported as low risk. Nearest high risk entry located 18m north west. -
	Flood Defences	There are 6No reports of flood defences located within 250m of the site. Nearest entry is located 54m north. -	

Feature	On Site	Off Site	Potential Receptor?
BGS	BGS has a "moderate" confidence that there is the potential for surface "clearwater" flooding.		-

3.5 Sensitive Land Uses

- 3.5.1 3No reports of Local Nature Reserves (LNR) are located within 1km of the site. Nearest entry located 807m north east, identified as White Rose Lane.
- 3.5.2 2No reports of Green Belt land are located within 1km of the site. Nearest entry located 125m south west, identified as London Area Greenbelt.
- 3.5.3 No other sensitive land use was identified within 1km of the site.

3.6 Radon

- 3.6.1 As reported, the site is not within a Radon affected area, as less than 1% of properties are above the action level.
- 3.6.2 Consequently, no radon protective measures are necessary in the construction of new dwellings or extensions as described in publication BR211 (BRE, 2007).

4 POSSIBLE GEOLOGICAL HAZARDS

4.1 Database Information Review

4.1.1 The following are brief findings extracted from the GroundSure GeoInsight Report, that relate to factors that may have a potential impact upon the engineering of the proposed development.

Table 4.1: Geological Hazards

Potential Hazard	Site check Hazard Rating	Details	Further Action Required?
Shrink swell	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE).	No
Landslides	Very low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides.	No
Ground dissolution soluble rocks	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks.	No
Compressible deposits	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes.	Yes
Collapsible Rock	Very low	Deposits with the potential to collapse when loaded and saturated are unlikely to be present	No
Running sand	Low	Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site.	No
Coal mining	None	There are no coal mining areas located within 1km of the site.	No
Shallow mine workings	None	There are no shallow mine workings located within 1km of the site.	No
Brine affected areas	None	There are no brine affected areas located within 1km of the site.	No

4.1.2 In addition, the GeoInsight report notes the following:

- 1No historical surface ground working feature is reported within the site boundary. This entry is identified as an unspecified pit dated 1955. With reference to historical mapping this is likely to comprise raised earthworks associated with former football stands.
 - 7No historical surface ground working features are reported within 250m of the site, all entries within the site vicinity identified as ponds, nearest located 4m east.
 - No historical underground working features are reported within 1km of the site.
 - 2No BGS Current Ground Working Features are reported within 1km of the site. The nearest entry is reported 925m north identified as Downside Goods Yard producing crushed rock and slag.
- 4.1.3 The clearance of the site, including removal of foundations and services is likely to increase the depth of Made Ground on the site.
- 4.1.4 Foundations should not be formed within Made Ground or organic rich material (e.g. Topsoil) due to the unacceptable risk of total and differential settlement.
- 4.1.5 The presence of Made Ground derived from demolition material may be a source of elevated sulphate, associated with plaster from the previous structures. If such levels are noted then sulphate resistant concrete may be required.
- 4.1.6 The BGS notes disseminated pyrite within the London Clay Formation and as such may be a source of elevated sulphate results. If such levels are noted then sulphate resistant concrete may be required.
- 4.1.7 The resultant thickness of Made Ground and the potential for clays beneath the proposed footprint may mean that a suspended floor slab would be required.
- 4.1.8 Although the site is not indicated to lie within a flood zone 2 or 3, such zones are in close proximity, and therefore it is recommended that a site specific flood risk assessment is undertaken.
- 4.1.9 For developments within an EA Flood Zone the EA usually requires finished floor levels to be a suitable height (plus an allowance for climate change) above the highest predicted 1:100 flood event w
- 4.1.10 A geotechnical investigation is recommended to assess the significant potential for compressibility issues regarding the proposed development. An intrusive investigation will also address the potential issue with ground plasticity as outlined in Table 4.1.
- 4.1.11 A geotechnical investigation is also recommended to inform foundation design for the proposed developments.

5 QUALITATIVE RISK ASSESSMENT

5.1 Legislative Framework

5.1.1 A qualitative risk assessment has been prepared for the site, based on the information collated. This highlights the potential sources, pathways and receptors. Intrusive investigations will be required to confirm the actual site conditions and risks.

5.1.2 Under Part IIA of the Environmental Protection Act 1990, the statutory definition of contaminated land is:

“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) significant pollution of controlled waters is being caused, or there is significant possibility of such pollution being caused.”

5.1.3 The Statutory Guidance provided in the DEFRA Circular 04/2012 lists the following categories of significant harm to **human health**:

- death; life threatening diseases (e.g. cancers); other diseases likely to have serious impacts on health; serious injury; birth defects; and impairment of reproductive functions.

5.1.4 Other health effects may also be considered by the local authority to constitute significant harm with a wide range of conditions that may or may not constitute significant harm (alone or in combination) including: physical injury; gastrointestinal disturbances; respiratory tract effects; cardio-vascular effects; central nervous system effects; skin ailments; effects on organs such as the liver or kidneys; or a wide range of other health impacts.

5.1.5 In deciding whether or not land is contaminated land on grounds of significant possibility of significant harm to human health there are four categories to be considered. Categories 1 and 2 would encompass land which is capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health. Categories 3 and 4 would encompass land which is not capable of being determined on such grounds.

5.1.6 For non-human receptors the following types of harm should be considered to be significant harm:

Ecological System Effects

- Harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or
- Harm which significantly affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location.
- In the case of European sites, harm should also be considered to be significant harm if it endangers the favourable conservation status of natural habitats at such locations or species typically found there. In deciding what constitutes such harm, the local authority should have regard to the advice of Natural England and to the requirements of the Conservation of Habitats and Species Regulations 2010.

Property Effects

- Crops: A substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage.
- Buildings: Structural failure, substantial damage or substantial interference with any right of occupation. The local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the purpose for which it is or was intended. In the case of a scheduled Ancient Monument, substantial damage should also be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled.

5.1.7 Contaminated land will only be identified when a 'pollutant linkage' has been established.

5.1.8 A 'pollutant linkage' is defined in Part IIA as:
"A linkage between a contaminant Source and a Receptor by means of a Pathway".

5.1.9 Therefore, this report presents an assessment of the potential pollutant linkages that may be associated with the site, in order to determine whether additional investigations are required to assess their significance.

5.1.10 In accordance with the National Planning Policy Framework, where development is proposed, the developer is responsible for ensuring that the development is safe and suitable for use for the purpose for which it is intended, or can be made so by remedial action. In particular, the developer should carry out an adequate investigation to inform a risk assessment to determine:

- whether the land in question is already affected by contamination through source – pathway – receptor pollutant linkages and how those linkages are represented in a conceptual model;
- whether the development proposed will create new linkages, e.g. new pathways by which existing contaminants might reach existing or proposed receptors and whether it will introduce new vulnerable receptors; and
- what action is needed to break those linkages and avoid new ones, deal with any unacceptable risks and enable development and future occupancy of the site and neighbouring land.

5.1.11 A potential developer will need to satisfy the Local Authority that unacceptable risk from contamination will be successfully addressed through remediation without undue environmental impact during and following the development.

5.2 Conceptual Site Model

5.2.1 On the basis of the information summarised above, a conceptual site model (CSM) has been developed for the site. The CSM is used to guide the investigation activities at the site and identifies potential contamination sources, receptors (both on and off-site) and exposure pathways that may be present. The identification of such potential "pollutant linkages" is a key aspect of the evaluation of potentially contaminated land.

5.2.2 The site investigation is then undertaken in order to prove or disprove the presence of these potential source-pathway-receptor linkages. Under current legislation an

environmental risk is only deemed to exist if there are proven linkages between all three elements (source, pathway and receptor).

5.2.3 This part of the report lists the potential sources, pathways and receptors at the site, and assesses based on current and future land use, whether pollution linkages are possible.

5.2.4 Potential pollutant linkages identified at the site are detailed below:

Table 5.1: Potential Sources, Pathways and Receptors

Source(s)	Pathway(s)	Receptor(s)
<ul style="list-style-type: none"> • Potential for Made Ground associated with previous development operations – on site (S1) • Potential asbestos containing materials within existing buildings – on site (S2) • Potential ground gas generation from nearby landfill site (S3) 	<ul style="list-style-type: none"> • Ingestion and dermal contact with contaminated soil (P1) • Inhalation or contact with potentially contaminated dust and vapours (P2) • Leaching through permeable soils, migration within the vadose zone (i.e., unsaturated soil above the water table) and/or lateral migration within surface water, as a result of cracked hardstanding or via service pipe/corridors and surface water runoff. (P3) • Horizontal and vertical migration of contaminants within groundwater (P4) • Accumulation and Migration of Soil Gases (P5) • Permeation of water pipes and attack on concrete foundations by aggressive soil conditions (P6) 	<ul style="list-style-type: none"> • Construction workers (R1) • Maintenance workers (R2) • Neighbouring site users (R3) • Future site users (R4) • Building foundations and on site buried services (water mains, electricity and sewer) (R5) • Controlled waters - secondary (A) aquifer (R6) • Surface water – pond located east of site, Hoe Stream 39m north (R7)

5.3 Qualitative Risk Estimation

5.3.1 Based on information previously presented in this report, a qualitative risk estimation was undertaken.

5.3.2 For each potential pollutant linkage identified in the conceptual model, the potential risk can be evaluated, based on the following principle:

Overall contamination risk = Probability of event occurring x Consequence of event occurring

5.3.3 In accordance with CIRIA C552, the consequence of a risk occurring has been classified into the following categories:

- Severe
- Medium
- Mild
- Minor

5.3.4 The probability of a risk occurring has been classified into the following categories:

- High Likelihood
- Likely
- Low Likelihood
- Unlikely

5.3.5 This relationship can be represented graphically as a matrix (Table 5.2).

Table 5.2: Overall Contamination Risk Matrix

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Low Risk
	Likely	High Risk	Moderate Risk	Moderate Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate Risk	Low Risk	Very Low Risk
	Unlikely	Low Risk	Low Risk	Very Low Risk	Very Low Risk

5.3.6 The risk assessment process is based on guidance provided in CIRIA C552 (2001) *Contaminated Land Risk Assessment – A Guide to Good Practice*. Further information including definitions of descriptive terms used in the risk assessment process is included in Appendix 4.

5.3.7 The degree of risk is based on a combination of the potential sources and the sensitivity of the environment. The risk classifications can be cross checked with reference to Table A4.4 in Appendix 4.

5.3.8 Hazard assessment was also carried out, the outcome of which could be:

- Urgent Action (UA) required to break existing source-pathway-receptor link.
- Ground Investigation (GI) required to gather more information
- Watching Brief there is no evidence of potential contamination but the possibility of it exists and so the site should be monitored for local and olfactory evidence of contamination.
- No action required (NA)

5.3.9 The preliminary risk assessment for the site is presented in Table 5.3 below.

**SECTION 5
QUALITATIVE RISK ASSESSMENT**



Table 5.3: Preliminary Risk Assessment for the Site

Sources	Pathways (P)	Receptors	Consequence of Impact	Probability of Impact	Risk Estimation	Hazard Assessment
<ul style="list-style-type: none"> Potential for Made Ground associated with previous development operations – on site (S1) Potential asbestos containing materials within existing buildings – on site (S2) Potential ground gas generation from nearby landfill site (S3) 	<ul style="list-style-type: none"> Ingestion and dermal contact with contaminated soil (P1) Inhalation or contact with potentially contaminated dust and vapours (P2) Permeation of water pipes and attack on concrete foundations by aggressive soil conditions (P6) 	<ul style="list-style-type: none"> Construction workers (R1) Maintenance workers (R2) Neighbouring site users (R3) Future site users (R4) Building foundations and on site buried services (water mains, electricity and sewer) (R5) 	Medium	Low	Moderate	GI – Ground Investigation
			Severe for Asbestos	Low	Moderate	
			Severe	Low	Moderate	
	Accumulation and migration of soil gases (P5)					
	<ul style="list-style-type: none"> Leaching through permeable soils, migration within the vadose zone (i.e., unsaturated soil above the water table) and/or lateral migration within surface water, as a result of cracked hardstanding or via service pipe/corridors and surface water runoff. (P3) Horizontal and vertical migration of contaminants within groundwater (P4) 	<ul style="list-style-type: none"> Neighbouring site users (R3) Building foundations and on site buried services (water mains, electricity and sewer) (R5) Controlled waters - secondary (A) aquifer (R6) Surface water – pond located east of site, Hoe Stream 39m north (R7) 	Medium	Unlikely	Low	

5.3.10 It should be noted that the identification of potential pollutant linkages does not necessarily signify that the site is unsuitable for its current or proposed land use. It does however act as a way of focussing data collection at the site in accordance with regulatory guidance in CLR 11.

5.4 Outcome of Risk Assessment

5.4.1 The risk estimation matrix indicates a moderate risk as defined above.

5.4.2 It is understood that the proposed development is to comprise the demolition of the existing buildings and the construction of a new football stadium and surrounding residential flats. A total of 5No blocks of apartments are proposed to comprise a total of 1022No individual apartments. As part of this proposed development extensive areas of soft landscaping are anticipated.

5.4.3 A review of earliest available (1871) historical maps indicates that the site comprised undeveloped and/or agricultural land. No significant changes are noted until the plan dated 1934; development is noted on site as consisting of a sports ground, including a tennis ground towards the south, areas of worked ground are noted on this plan. Residential building development is noted within the northern part of the site in 1966. Large building developments are noted on the plan 1992 comprising a tennis centre, gymnasium and snooker hall.

5.4.4 The site vicinity on the earliest available plan comprised predominately undeveloped and/or agricultural land. A large pond is located directly east of site, an inland river is also located towards the north of site. The site vicinity shows consistent building development noted as detached residential buildings. No significant changes to the site vicinity are noted from 1966 to the most recent historical map 2014.

5.4.5 A historic landfill site is recorded 41m west of the site.

5.4.6 It is recommended that an intrusive investigation is undertaken to clarify potential risks to the identified receptors. The investigation should assess the thickness of any made ground, and allow samples of made ground and natural soils to be taken for laboratory analysis.

5.4.7 It is recommended that in accordance with BS 5930 (2015) the preliminary investigation is combined with the geotechnical investigation. It is likely that such a combined investigation may comprise a series of window sampler holes and cable percussive boreholes.

5.4.8 Soil gas monitoring should be undertaken should be undertaken in accordance with CIRIA C665.

5.5 List of Key Contaminants

5.5.1 The possible contamination implications for both on-site and off-site sources have been assessed based on the information presented in the report. This has been achieved using guidance publications by the Environment Agency, together with other sources.

5.5.2 In the case of the site uses identified as part of the desk study research, reference to DoE industry profiles would not indicate a specific use reference, although reference has been made to the miscellaneous industries profile

5.5.3 Based on recommendations within the guidance publications, an initial soil and water chemical testing suite would need to consider a range of contaminants as follows:

- *Metals:* cadmium, chromium, copper, lead, mercury, nickel, zinc;
- *Semi-metals and non-metals:* arsenic, boron, sulphur;
- *Inorganic chemicals:* cyanide, nitrate, sulphate and sulphide;
- *Organic chemicals:* aromatic hydrocarbons, aliphatic hydrocarbons, petroleum hydrocarbons, phenol, polyaromatic hydrocarbon;
- *Others:* pH, Asbestos

6 REFERENCES

Groundsure EnviroInsight Report Ref HMD-377-5286261 August 2018

Groundsure GeoInsight Report Ref HMD-377-5286262 August 2018

BRE Report BR211 ;Radon: Protective measures for new dwellings, 2007

Environment Agency (2004) *Model procedures for the management of land contamination*. CLR11. Bristol: Environment Agency

National Planning Policy Framework. Department for Communities and Local Government, March 2012

Code of Practice for Site Investigations BS5930: 2015

Investigation of Potentially Contaminated Sites – Code of Practice BS10175: 2011

APPENDICES



JOMAS ASSOCIATES LTD
T: 0843 289 2187

Project Name	Kingfield Road, Woking	Client	Goldev Woking Ltd
Project No.	P1381J1460	Date	16/08/2018
Title	Site Location Plan	Prepared By	AM

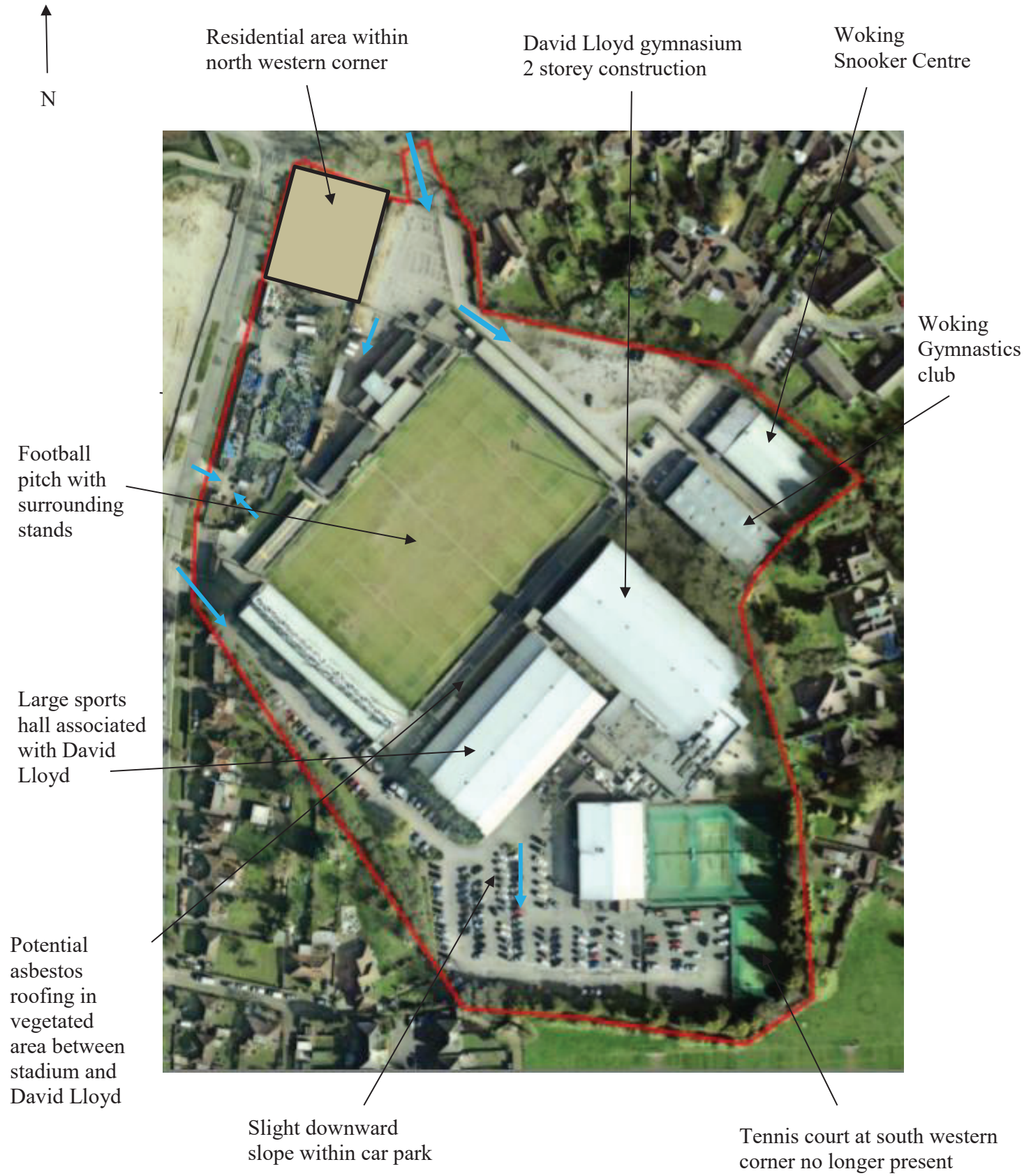


APPENDIX 1 – FIGURES

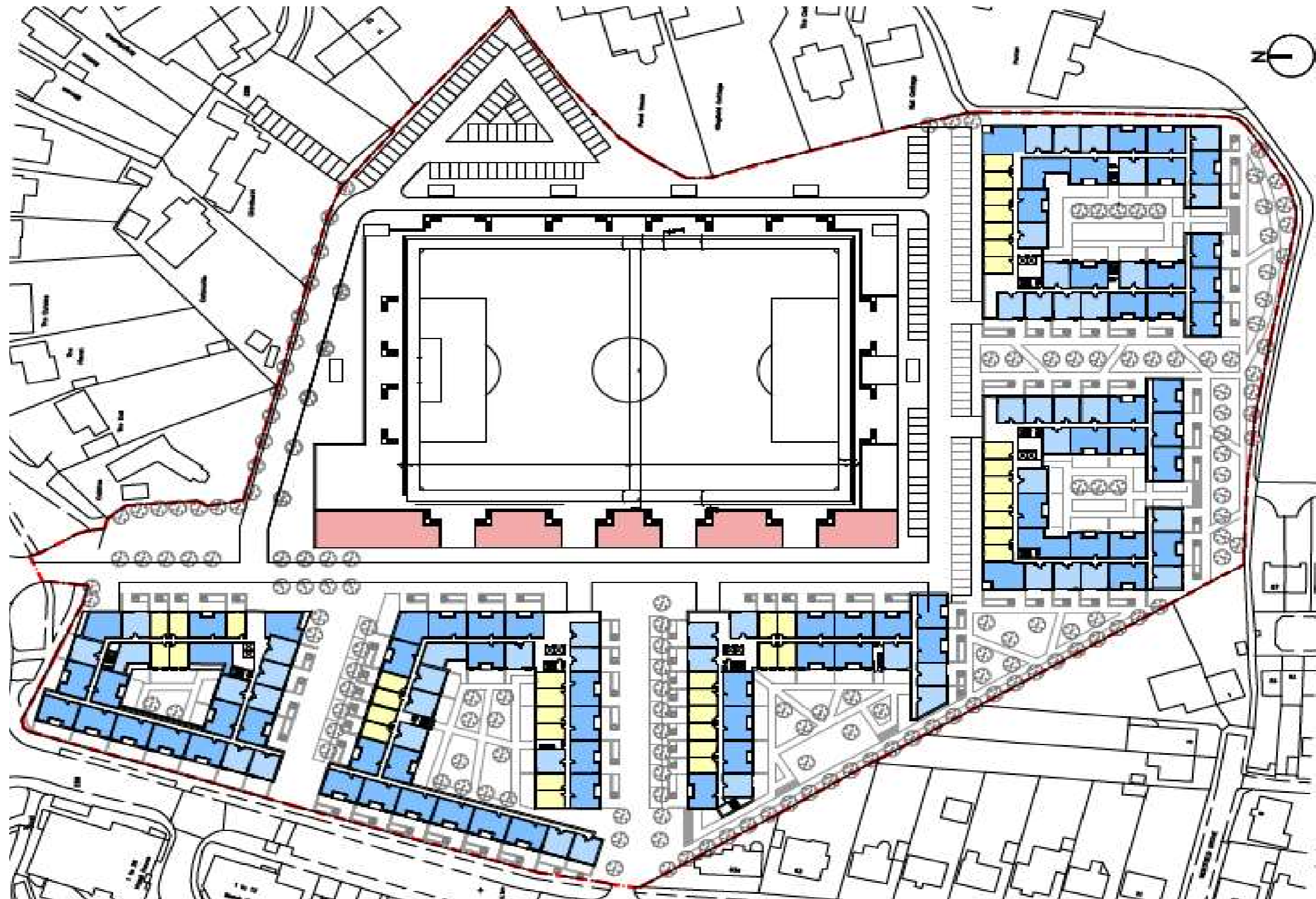


JOMAS ASSOCIATES LTD
T: 0843 289 2187

Project Name	Kingfield Road, Woking	Client	Goldev Woking Ltd
Project No.	P1381J1460	Date	15/08/2018
Title	Site Constraints Plan	Prepared By	CLP



Project Name	Kingsfield Road, Woking	Client	Goldev Woking Ltd
Project No.	P1381J1460	Date	16/08/2018
Title	Proposed Development Plan – Ground Floor	Prepared By	AM





Project Name	Kingfield Road, Woking	Client	Goldev Woking, Ltd
Title	Site Photo Plan	Project	P1381J1460

Photo 1: Main football ground on site with viewing stands.



Photo 2: David Lloyd club on site with car parking areas.



Project Name	Kingfield Road, Woking	Client	Goldev Woking, Ltd
Title	Site Photo Plan	Project	P1381J1460

Photo 3: Alternative David Lloyd building.



Photo 4: Car parking area for site.





Project Name	Kingfield Road, Woking	Client	Goldev Woking, Ltd
Title	Site Photo Plan	Project	P1381J1460

Photo 5: Bar unit located next to football ground.



Photo 6: Woking snooker centre.



Project Name	Kingfield Road, Woking	Client	Goldev Woking, Ltd
Title	Site Photo Plan	Project	P1381J1460

Photo 7: Woking gymnastics club.



Photo 8: Area between large gymnasium and football ground.





Project Name	Kingfield Road, Woking	Client	Goldev Woking, Ltd
Title	Site Photo Plan	Project	P1381J1460

Photo 9: Overgrown area between football ground and gymnasium.



Photo 10: Access point to David Lloyd part of site.



Project Name	Kingfield Road, Woking	Client	Goldev Woking, Ltd
Title	Site Photo Plan	Project	P1381J1460

Photo 11: Typical soft landscaping area on site.



Photo 12: Newly planted soft landscaping on site.





Jomas Associates Ltd
Lakeside House, 1 Furzeground Way,
Stockley Park, UB11 1BD

Report Reference: HMD-377-5286262

Your Reference: P1381J1460-1

Report Date 1 Aug 2018

Report Delivery Method: Email - pdf

Geo Insight

Address: WOKING FOOTBALL CLUB, LAITHWAITE COMMUNITY STADIUM, KINGFIELD ROAD,
KINGFIELD, WOKING, GU22 9AA

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on +44843 289 2187 quoting the above report reference number.

Yours faithfully,

Jomas Associates Ltd

Enc.
Groundsure Geo Insight

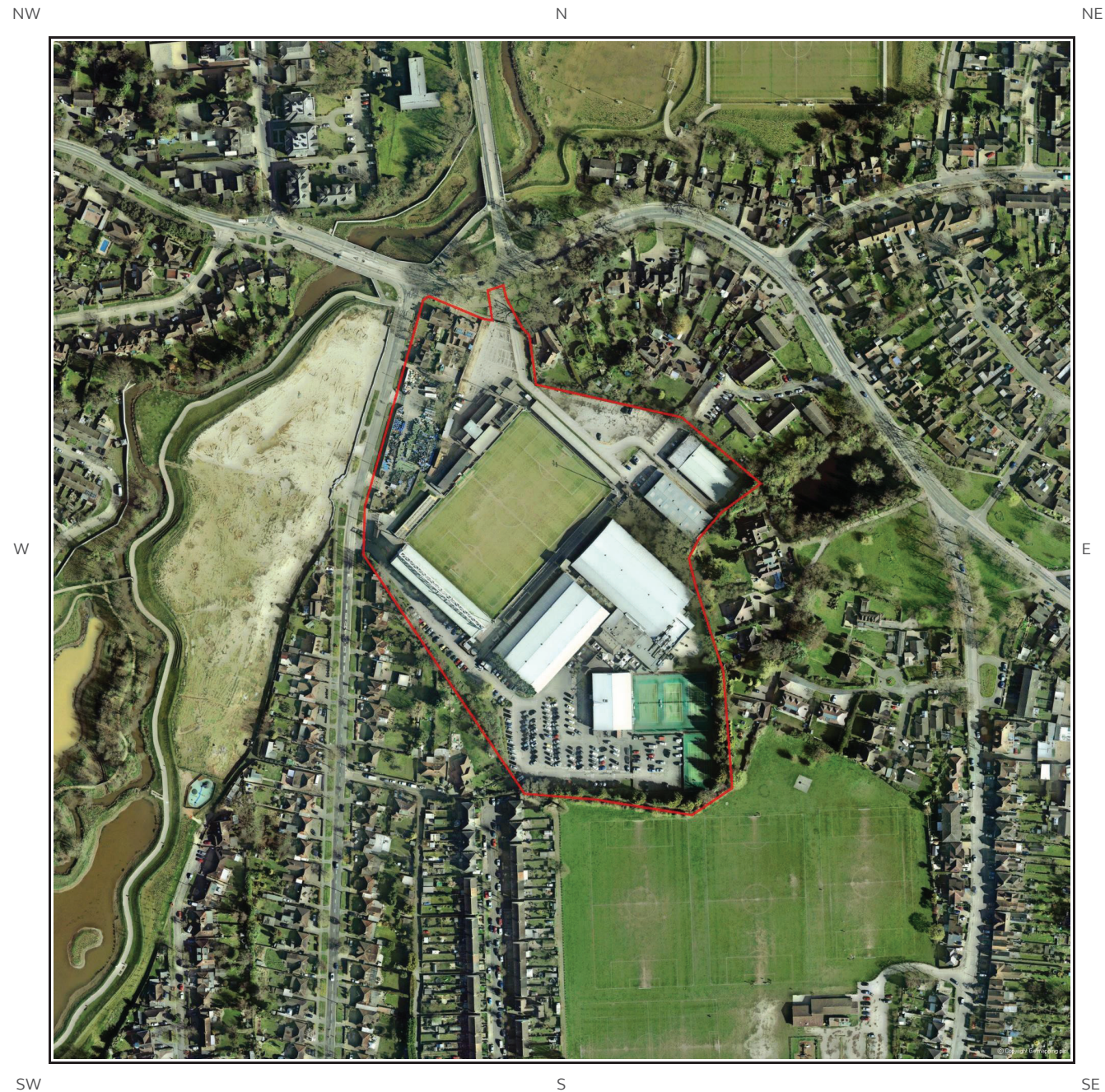
APPENDIX 2 – GROUNDSURE REPORTS

Address: WOKING FOOTBALL CLUB, LAITHWAITE COMMUNITY STADIUM,
KINGFIELD ROAD, KINGFIELD, WOKING, GU22 9AA

Date: 1 Aug 2018

Reference: HMD-377-5286262

Client: Jomas Associates Ltd



Aerial Photograph Capture date: 20-Apr-2013
Grid Reference: 500569,157301
Site Size: 4.95ha

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale

1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	No

Section 2: Geology 1:50,000 Scale

2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features

2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.

2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?

Yes

2.3.3 Are there any records of linear features within 500m of the study site boundary?

No

Section 3: Radon

3. Radon

3.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?

The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	1	7	0	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	2

Section 5: Mining, Extraction & Natural Cavities

	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	0	0	0	0	0
5.5 Non-Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

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Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

Section 6: Natural Ground Subsidence

	On-site
6.1 Shrink-Swell Clay	Low
6.2 Landslides	Very Low
6.3 Ground Dissolution of Soluble Rocks	Negligible
6.4 Compressible Deposits	Moderate
6.5 Collapsible Deposits	Very Low
6.5 Running Sand	Low

Section 7: Borehole Records

	On-site	0-50m	51-250
7 BGS Recorded Boreholes	0	0	0

Section 8: Estimated Background Soil Chemistry

	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	5	2	0

Section 9: Railways and Tunnels

	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	0	0	Not Searched
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched
9.3 Historical Railways	0	0	0	Not Searched
9.4 Active Railways	0	0	0	Not Searched
9.5 Railway Projects	0	0	0	0

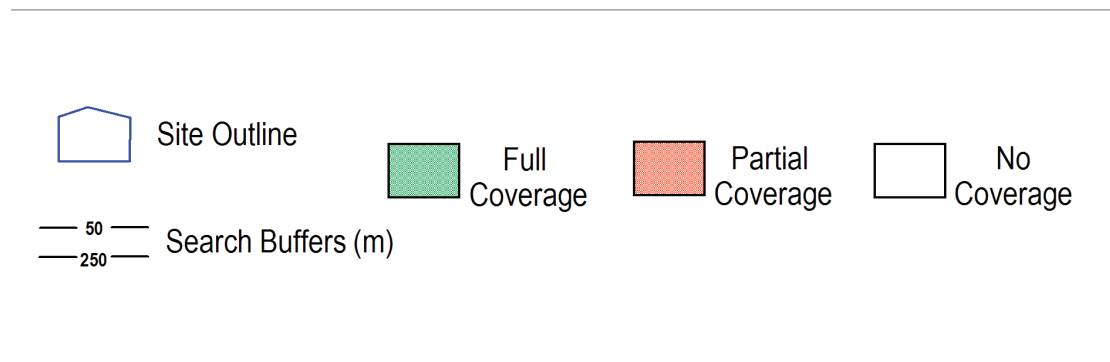
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Client Reference: P1381J1460-1

1:10,000 Scale Availability



1_10,000 Availability Legend

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Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	No coverage
2	461.0	Some deposits are mapped	Full	Full	No coverage

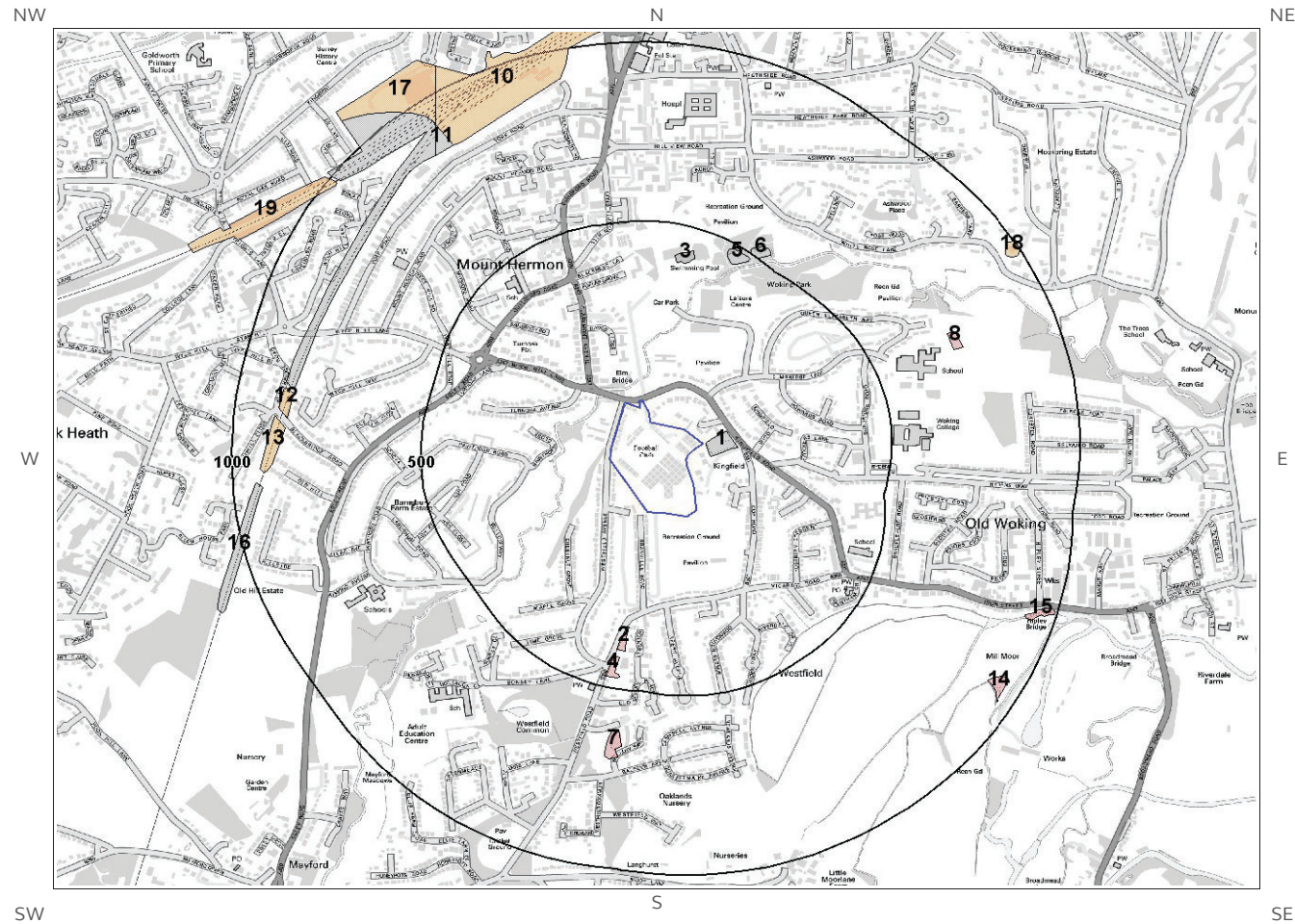
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

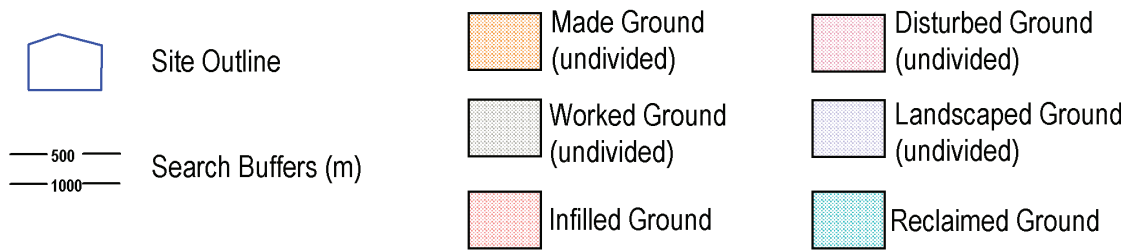
1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend

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1. Geology 1:10,000 scale

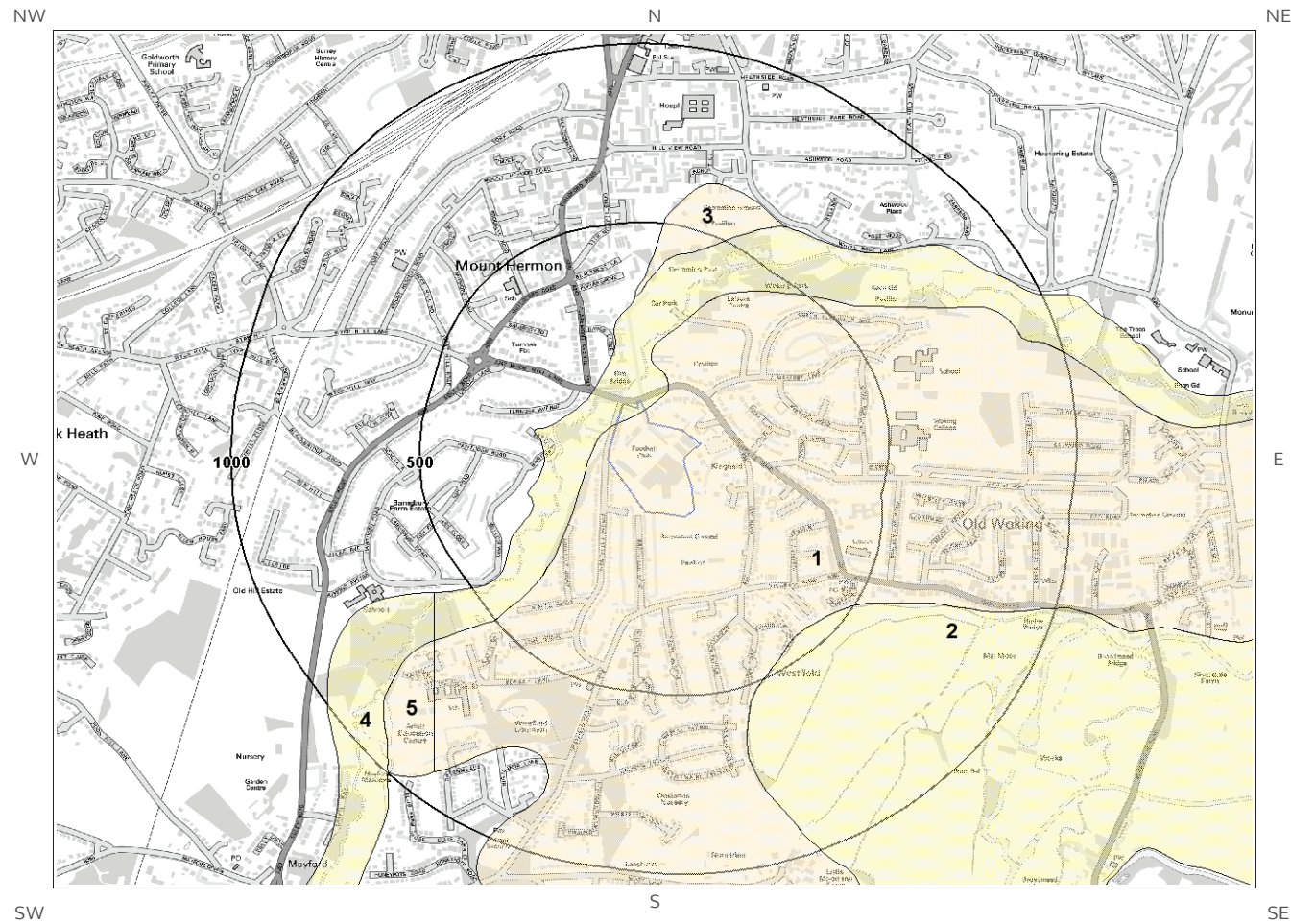
1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes




ID	Distance	Direction	LEX Code	Description	Rock Description
1	8.0	E	WGR-VOID	Worked Ground (Undivided)	Void
2	324.0	S	WMGR-ARTDP	Infilled Ground	Artificial Deposit
3	395.0	N	WGR-VOID	Worked Ground (Undivided)	Void
4	407.0	S	WMGR-ARTDP	Infilled Ground	Artificial Deposit
5	448.0	NE	WGR-VOID	Worked Ground (Undivided)	Void
6	498.0	NE	WGR-VOID	Worked Ground (Undivided)	Void

1.2 Superficial Deposits and Landslips map (1:10,000 scale)



Artificial Ground Legend

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-  Site Outline
-  500
-  1000 Search Buffers (m)

1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	KPGR-XSV	Kempton Park Gravel Formation - Sand And Gravel	Sand And Gravel
2	0.0	On Site	ALV-XSV	Alluvium - Sand And Gravel	Sand And Gravel
3	291.0	N	KPGR-XSV	Kempton Park Gravel Formation - Sand And Gravel	Sand And Gravel

1.2.2 Landslip

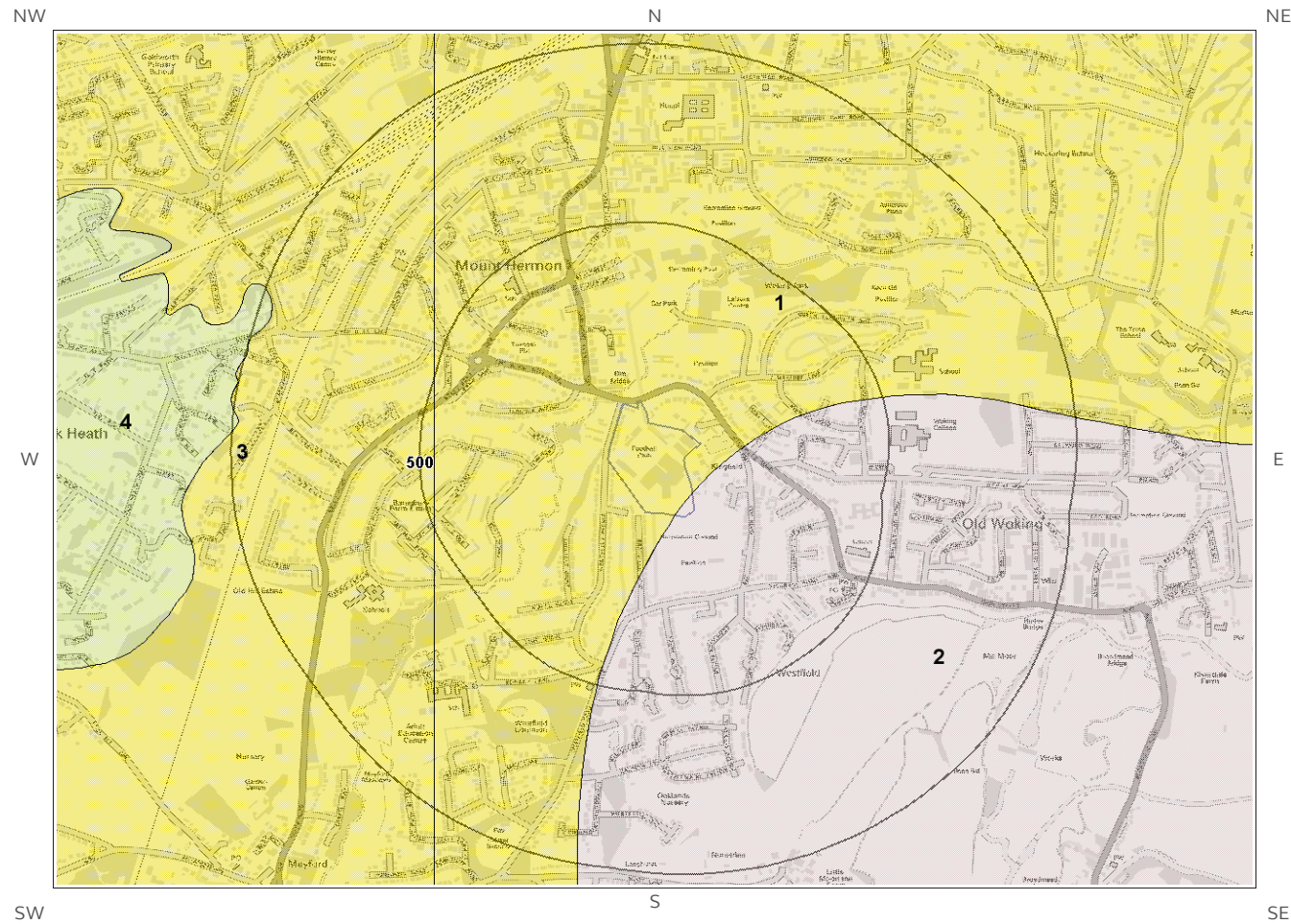
Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale


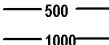
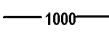
This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

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-  Site Outline
-  500 Search Buffers (m)
-  1000

1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	BGS-SANDU	Bagshot Formation - Sand	Eocene Epoch
2	0.0	On Site	LC-CLSISA	London Clay Formation - Clay, Silt And Sand	Eocene Epoch
3	461.0	W	BGS-SANDU	Bagshot Formation - Sand	Eocene Epoch

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? No

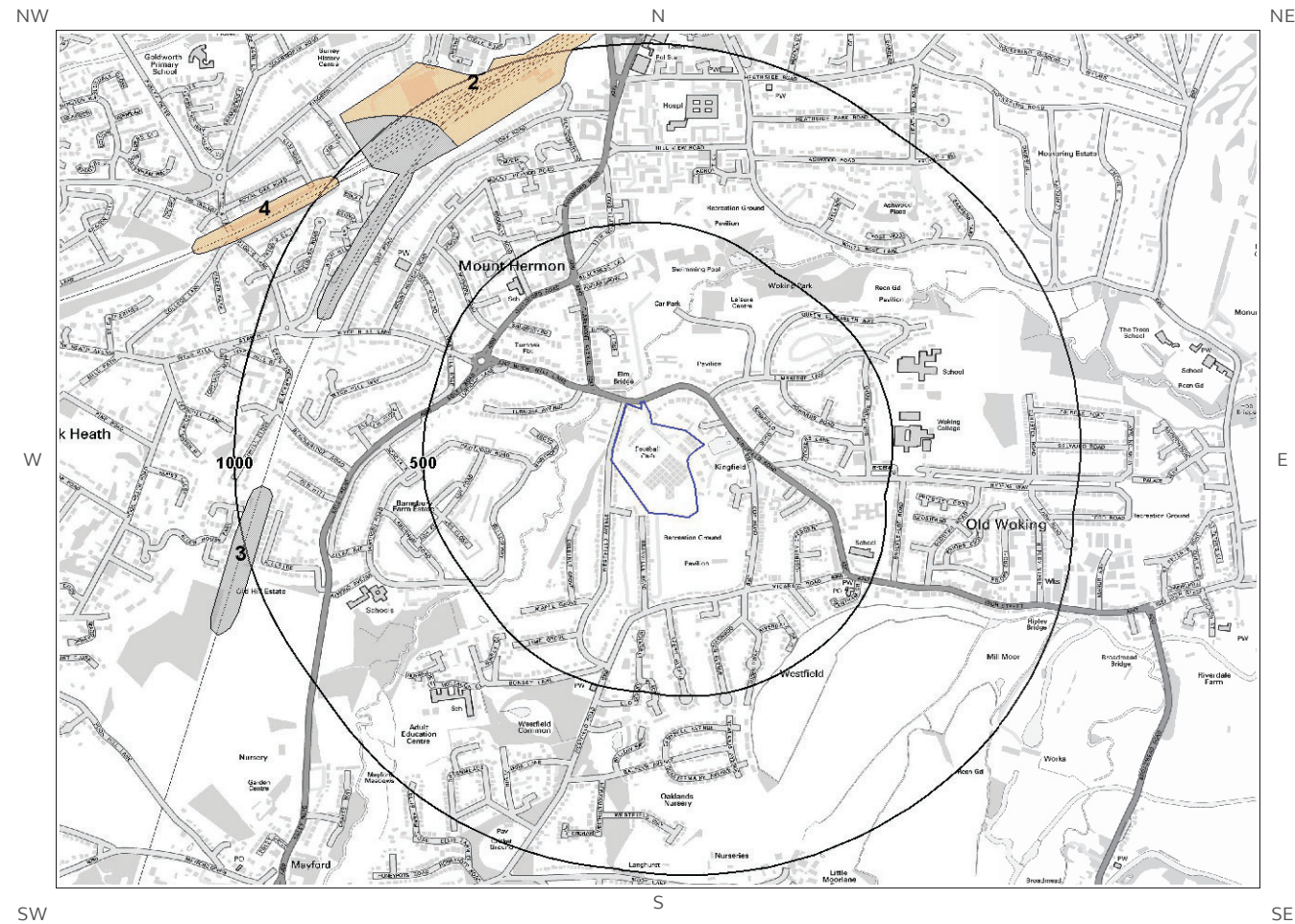
Database searched and no data found at this scale.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

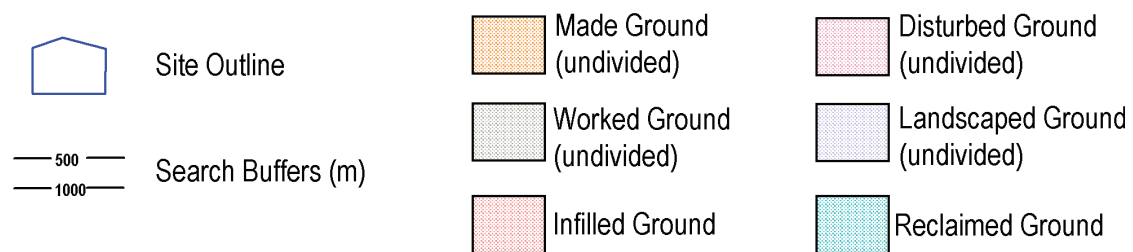
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 285

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? No

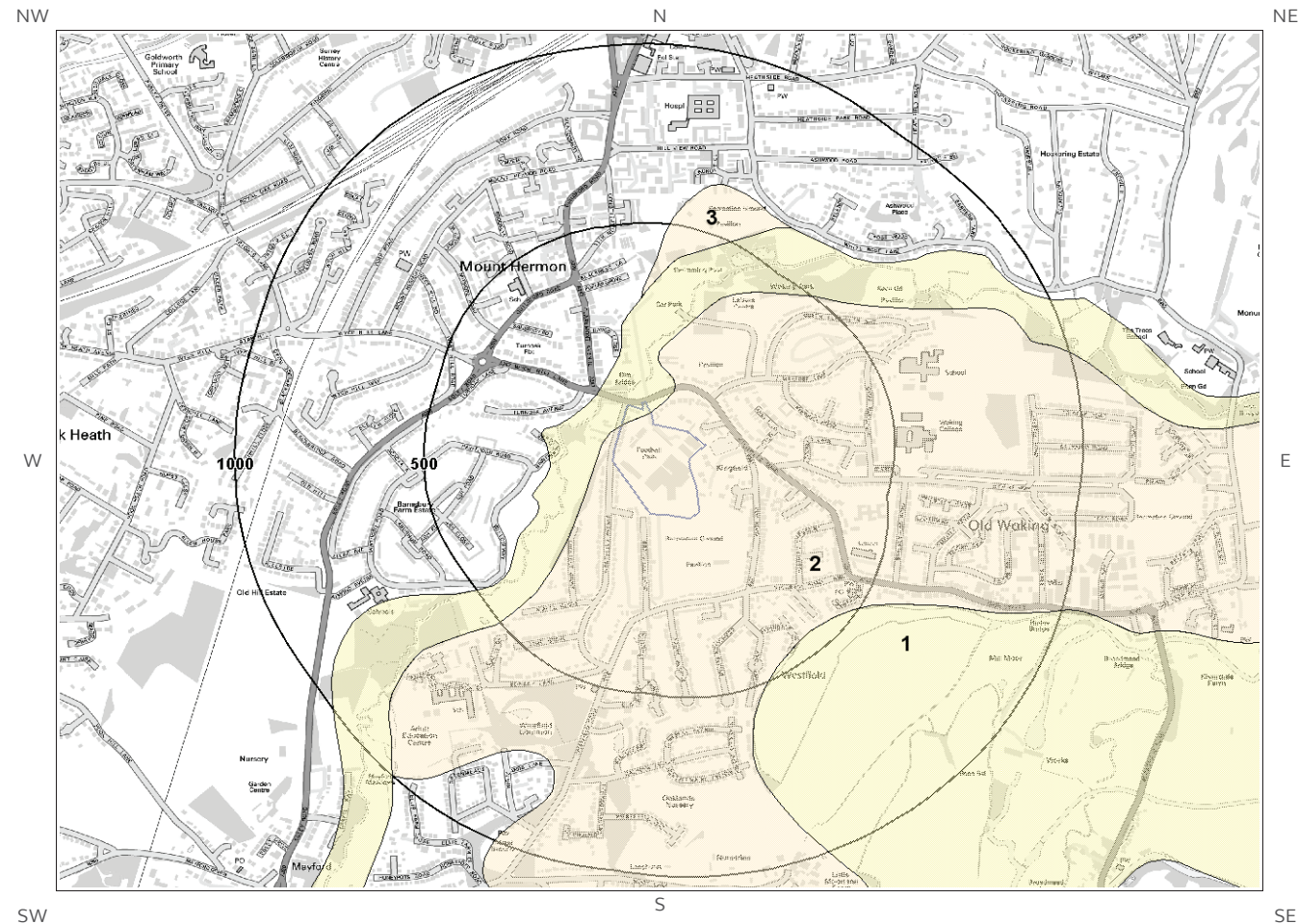
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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 Site Outline

 Search Buffers (m)
500
1000

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
2	0.0	On Site	KPGR-XSV	KEMPTON PARK GRAVEL MEMBER	SAND AND GRAVEL
3	290.0	N	KPGR-XSV	KEMPTON PARK GRAVEL MEMBER	SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Intergranular	High	Very Low
0.0	On Site	Intergranular	Very High	High

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

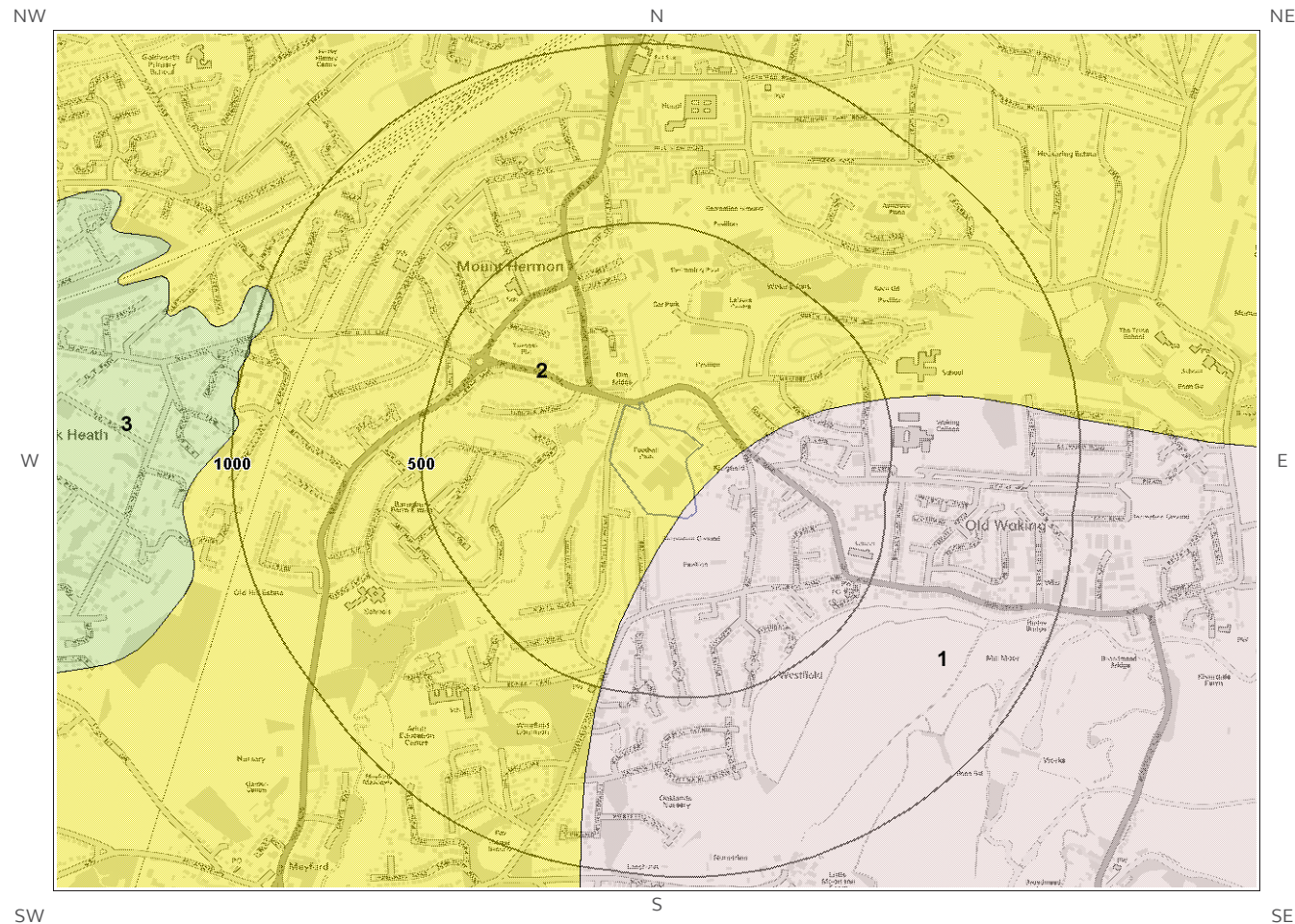
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



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 Site Outline

 Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 285

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	LC-XCZS	LONDON CLAY FORMATION - CLAY, SILT AND SAND	YPRESIAN
2	0.0	On Site	BGS-S	BAGSHOT FORMATION - SAND	YPRESIAN

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Intergranular	High	High
0.0	On Site	Mixed	Moderate	Very Low

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

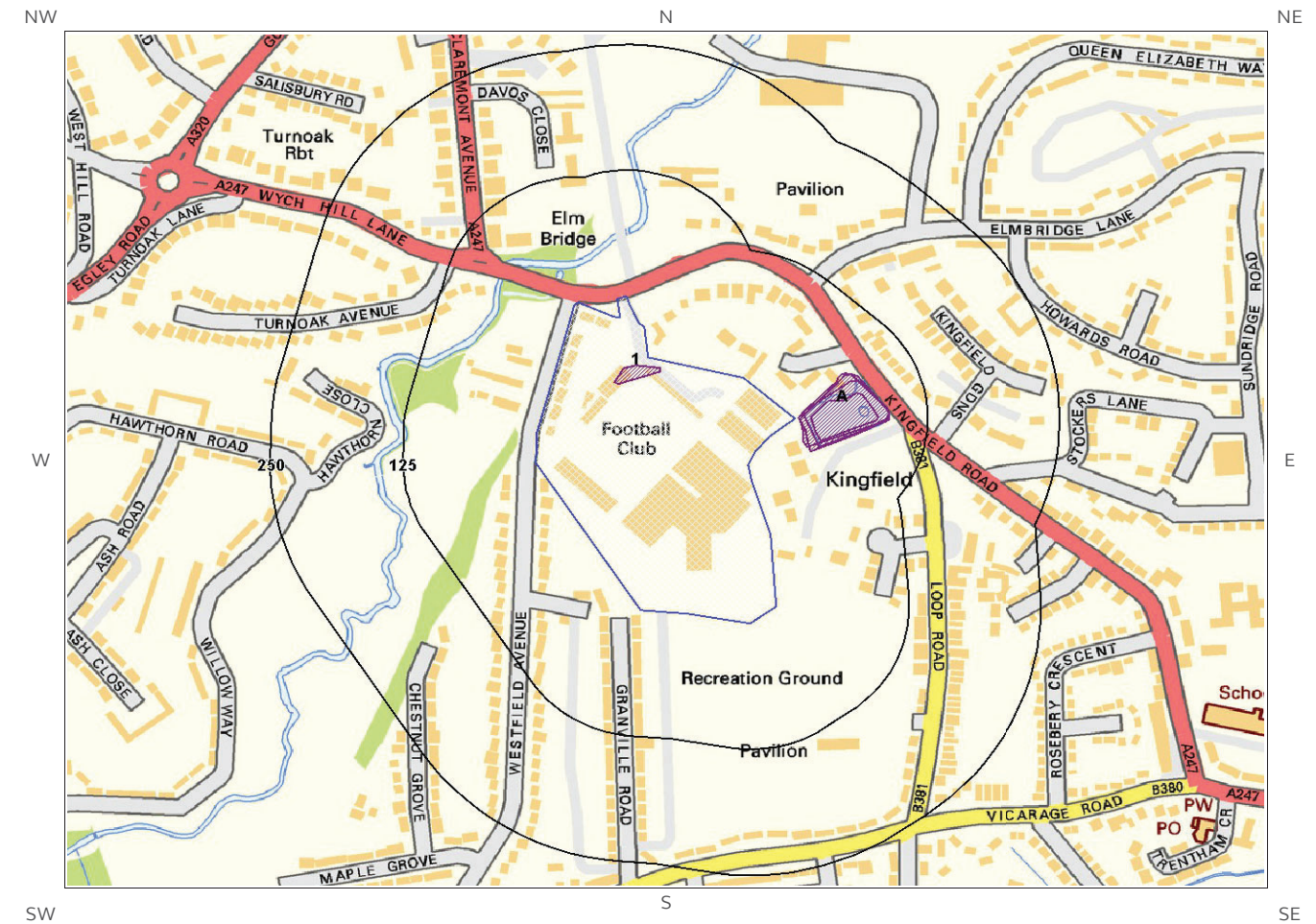
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection


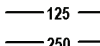



Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings map



Ground Workings Legend

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-  Site Outline
-  Search Buffers (m)
-  Historic Surface Ground Workings
-  Historic Underground Workings
-  Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1	0.0	On Site	500557 157400	Unspecified Pit	1955
2A	4.0	E	500752 157365	Pond	1895
3A	4.0	E	500752 157362	Pond	1870
4A	9.0	NE	500753 157361	Pond	1938
5A	9.0	NE	500753 157361	Pond	1912
6A	15.0	E	500752 157358	Pond	1982
7A	15.0	E	500752 157358	Pond	1992
8A	15.0	E	500752 157358	Pond	1974

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

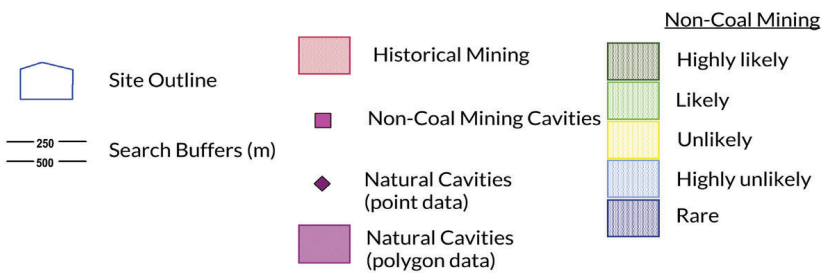
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	925.0	N	500210 158350	Crushed Rock	Downside Goods Yard	A site where mineral commodities are unloaded from rail trucks and stored	Active
Not shown	925.0	N	500210 158350	Slag	Downside Goods Yard	A site where mineral commodities are unloaded from rail trucks and stored	Active

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled “Review of mining instability in Great Britain, 1990” PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

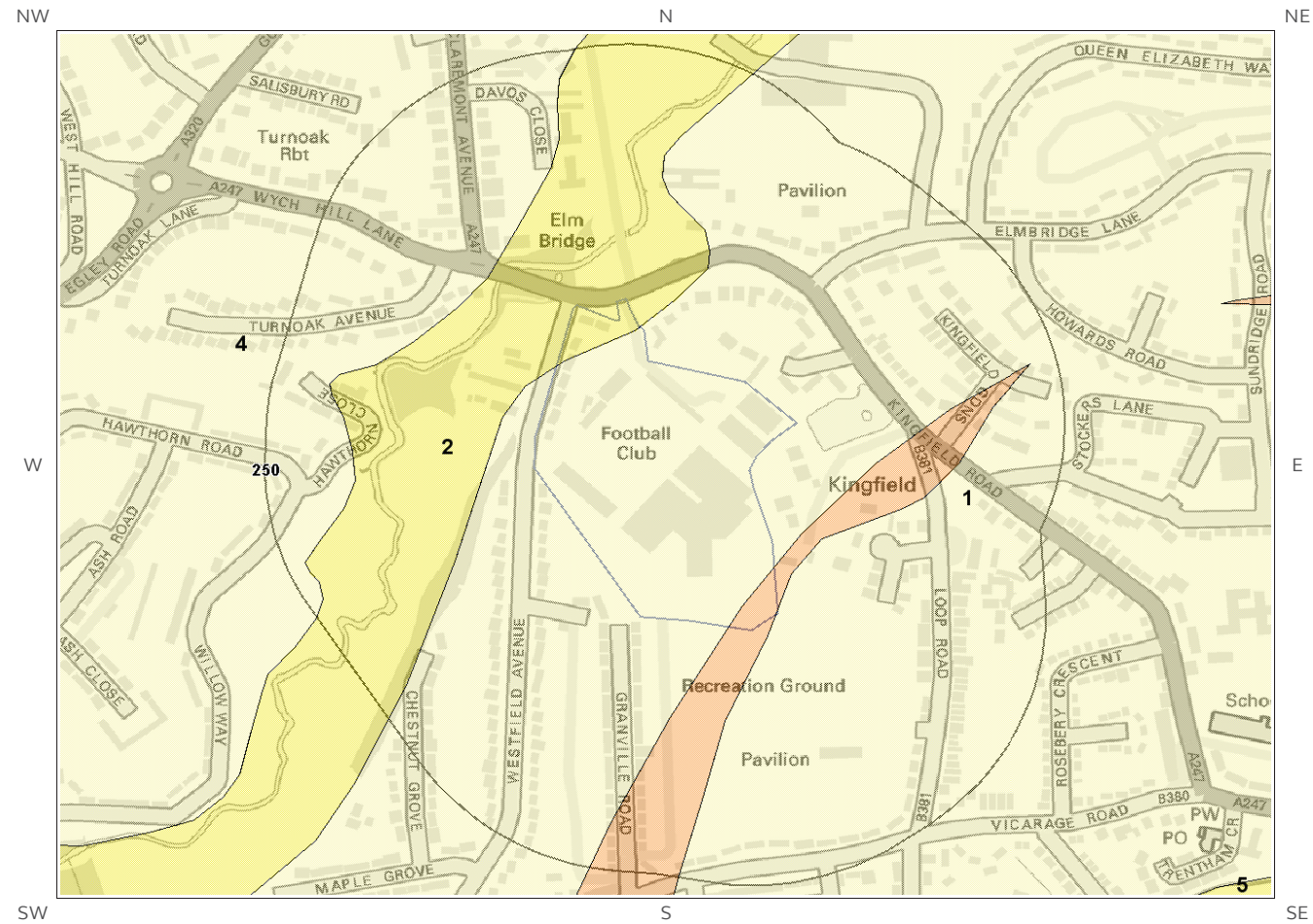
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

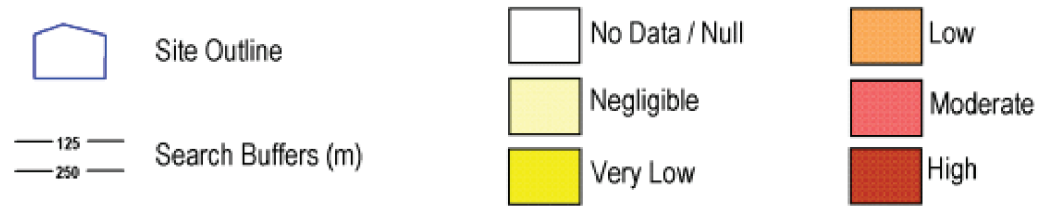
6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map

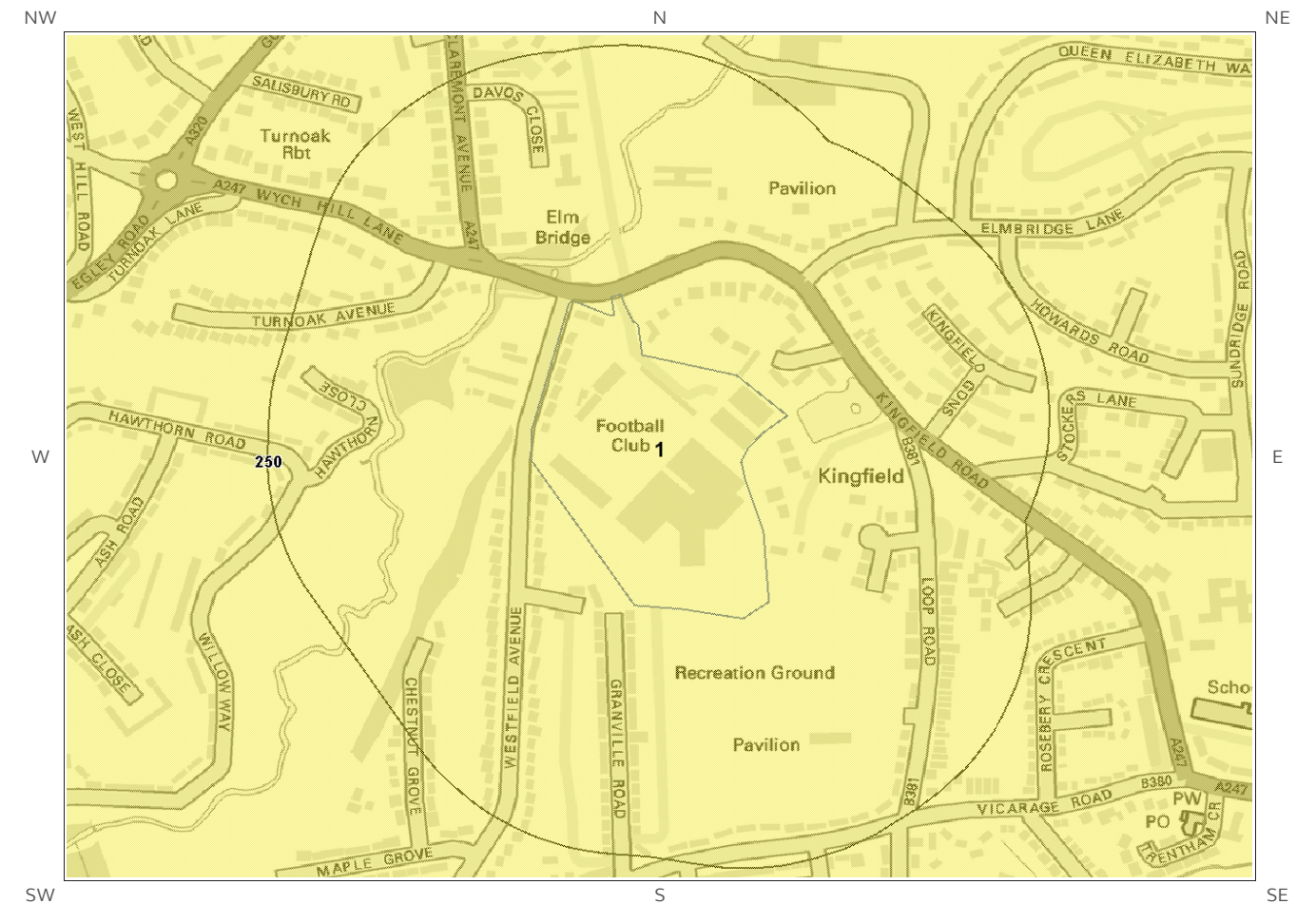


Shrink Swell Clay Legend

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6.2 Landslides map

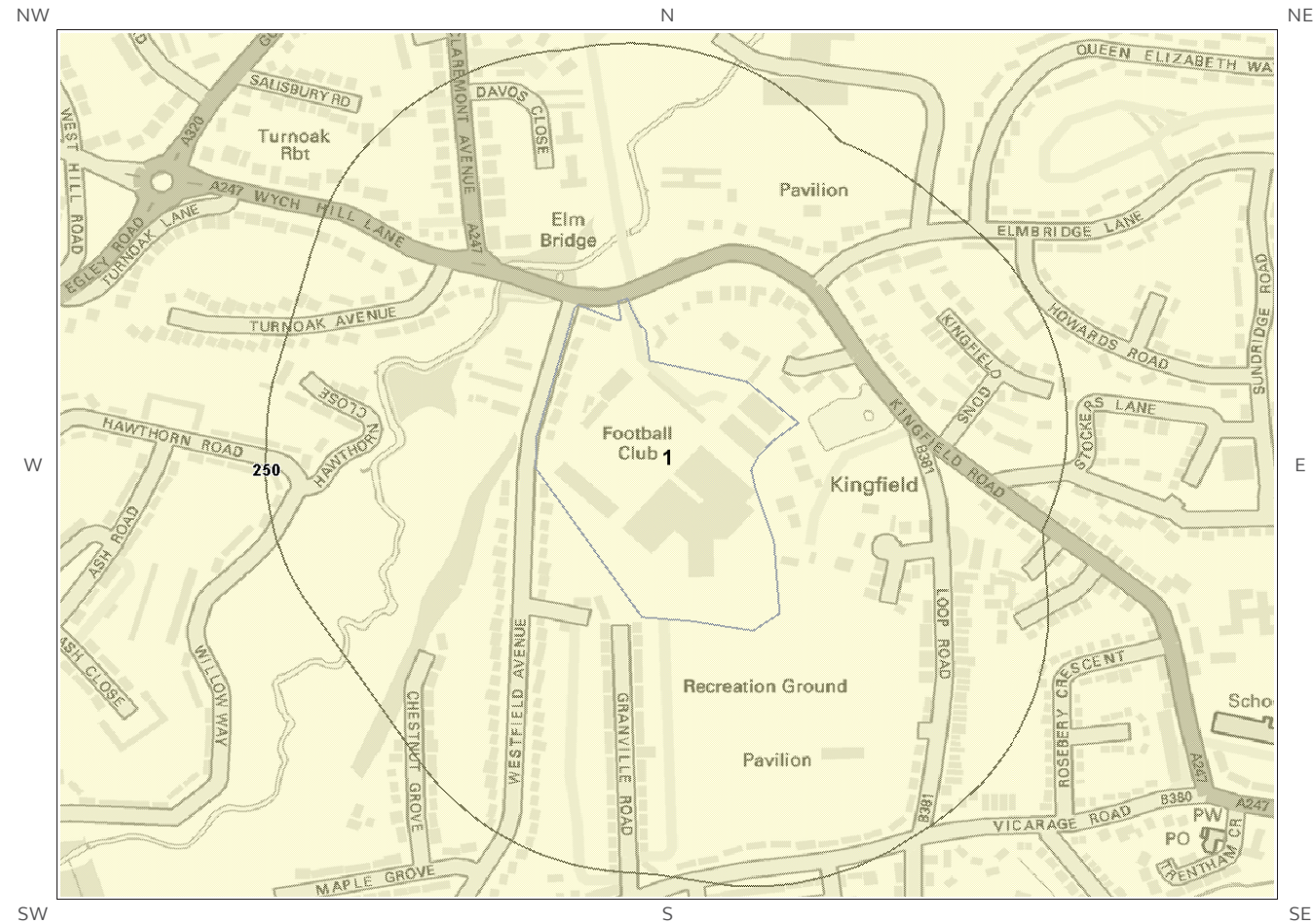


Landslides Legend

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6.3 Ground Dissolution of Soluble Rocks map

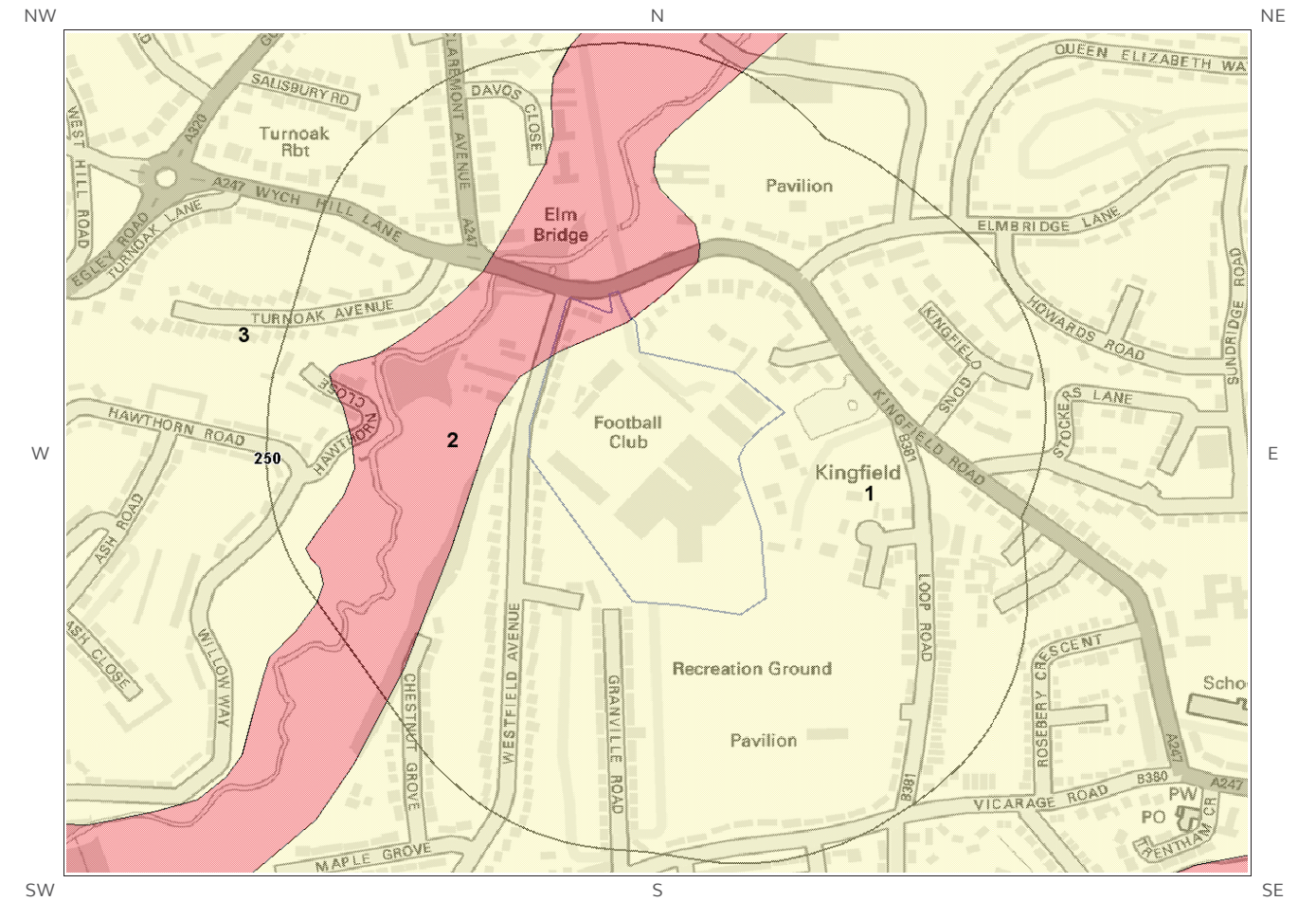


Ground Dissolution Soluble Rocks Legend

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- Site Outline
- No Data / Null
- Low
- 125 Search Buffers (m)
- Negligible
- Moderate
- 250 Search Buffers (m)
- Very Low
- High

6.4 Compressible Deposits map

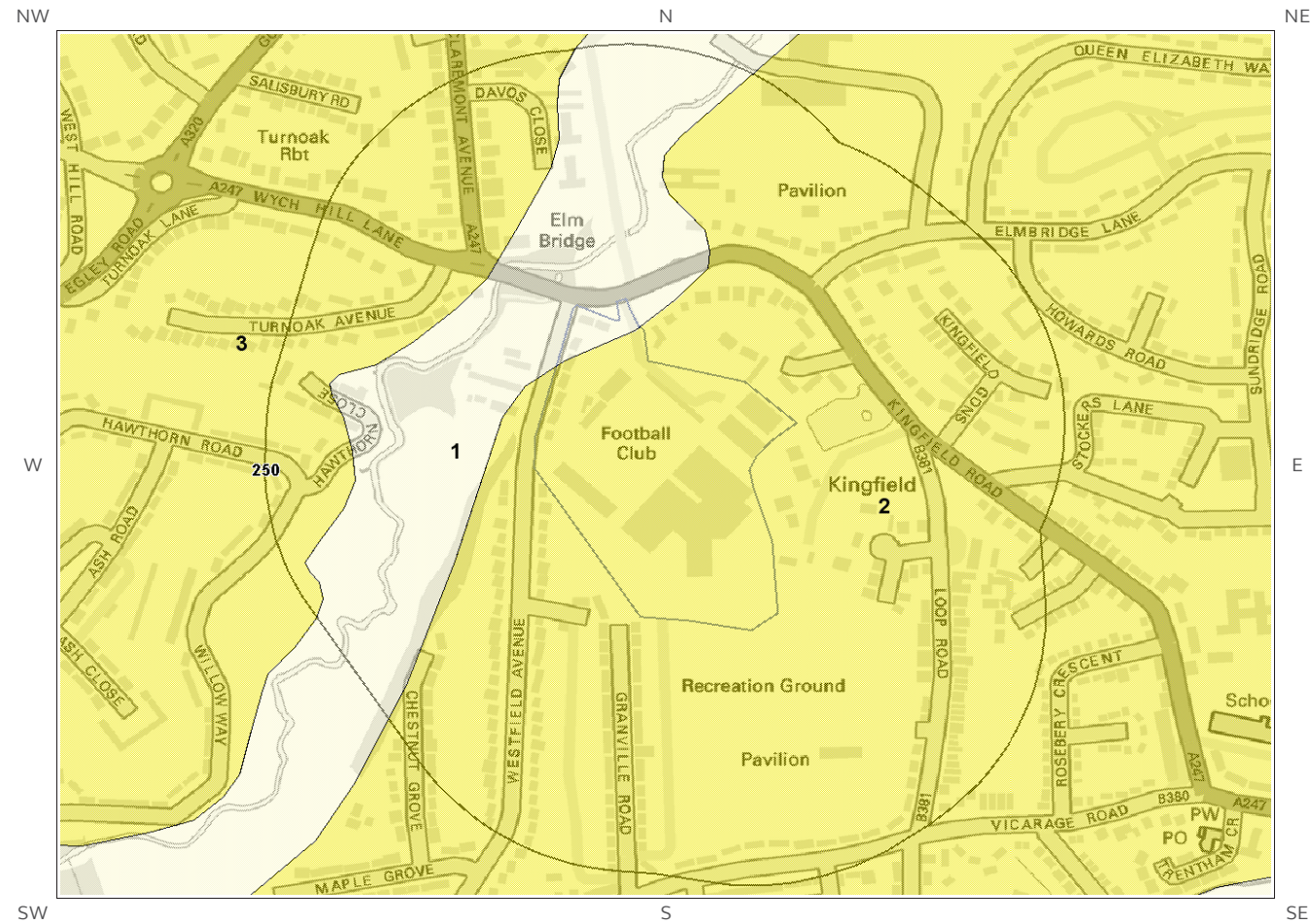


Compressible Deposits Legend

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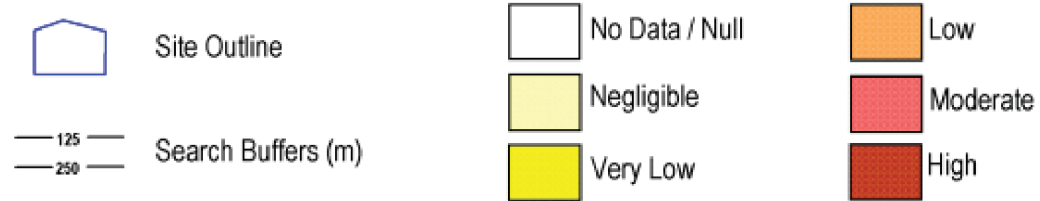
- Site Outline
- No Data / Null
- Low
- 125 Search Buffers (m)
- Negligible
- Moderate
- 250 Search Buffers (m)
- Very Low
- High

6.5 Collapsible Deposits map

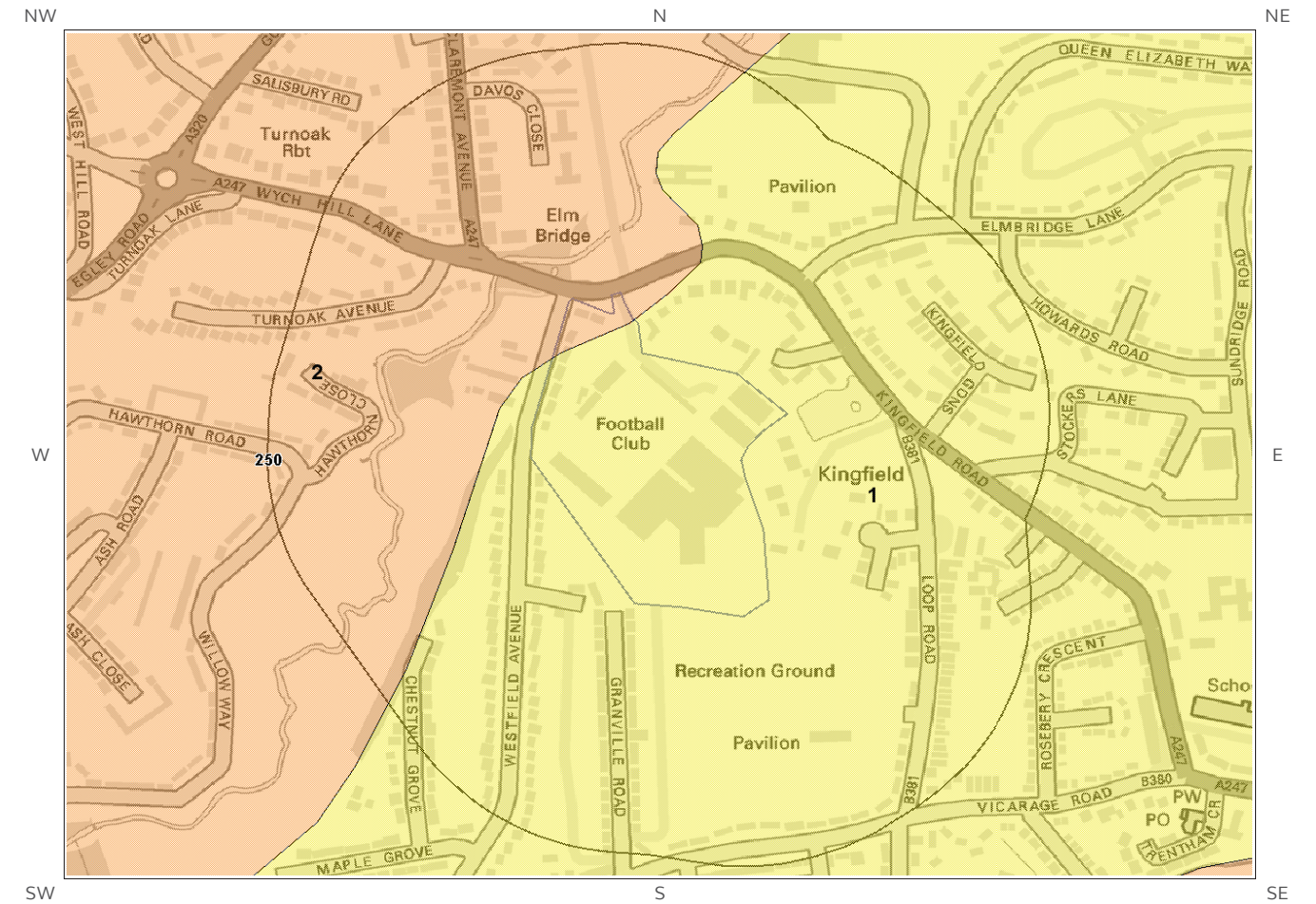


Collapsible Deposits Legend

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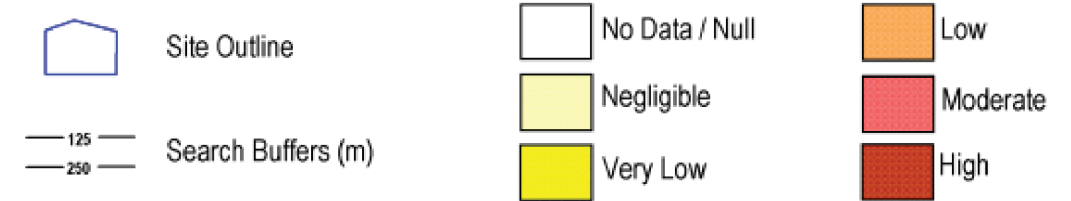


6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site* boundary? **Moderate**

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
2	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
3	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

* This includes an automatically generated 50m buffer zone around the site

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
2	0.0	On Site	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

The following Collapsible Rocks information provided by the British Geological Survey:

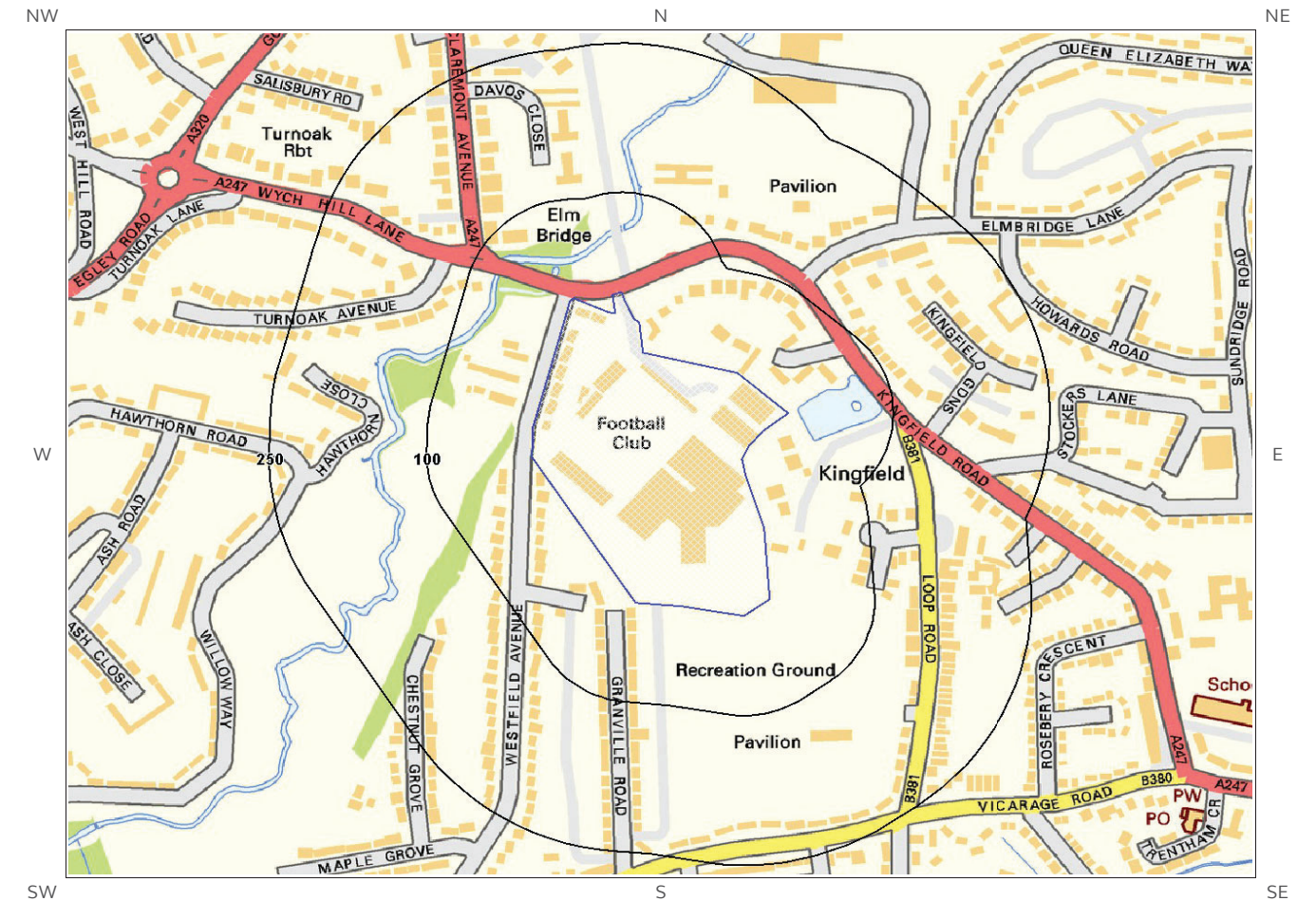
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
2	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:




ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
2	0.0	On Site	Low	Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build - consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property - no significant increase in insurance risk due to running sand problems is likely.

7 Borehole Records map



Borehole Records Legend

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-  Site Outline
-  Search Buffers (m)
-  Borehole Locations

7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 0

Database searched and no data found.

8 Estimated Background Soil Chemistry

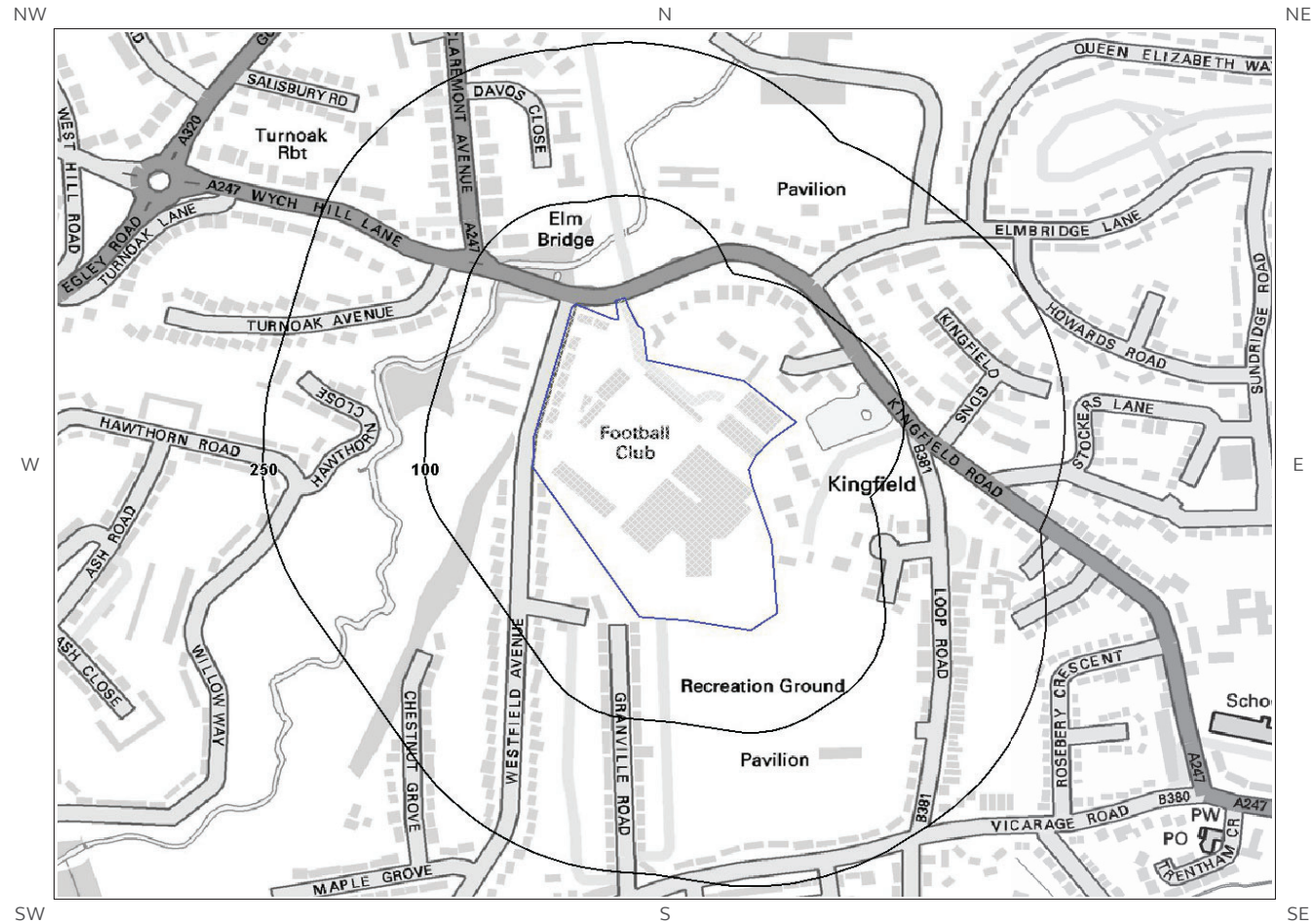
Records of background estimated soil chemistry within 250m of the study site boundary: 7

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
22.0	N	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
28.0	N	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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- | | |
|--|-------------------------------------|
| Underground or Partially Underground Railway / Subway System | Railway Track (OpenStreetMap) |
| Railway Tunnel (OS Mapping) | High Speed 2 |
| Abandoned or Dismantled Railway (OpenStreetMap) | High Speed 2 Revised Proposed Route |
| Railway Track (OS Mapping) | Crossrail 1 |
| Railway and/or Tunnel Feature from Historical Mapping | |
- Site Outline
 Search Buffers (m)
 - 250 -
 - 500 -

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? No

Have any historical railway or tunnel features been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1.

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

Contact Details

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BGS Geological Hazards Reports and general geological enquiries

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Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:
<https://www.groundsure.com/terms-and-conditions-may25-2018>



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Lakeside House, 1 Furzeground Way,
Stockley Park, UB11 1BD

Groundsure Reference: HMD-377-5286261
Your Reference: P1381J1460-1

Report Date 1 Aug 2018

Report Delivery Method: Email - pdf

Enviro Insight

Address: WOKING FOOTBALL CLUB, LAITHWAITE COMMUNITY STADIUM, KINGFIELD ROAD, KINGFIELD, WOKING, GU22 9AA

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on +44843 289 2187 quoting the above report reference number.

Yours faithfully,

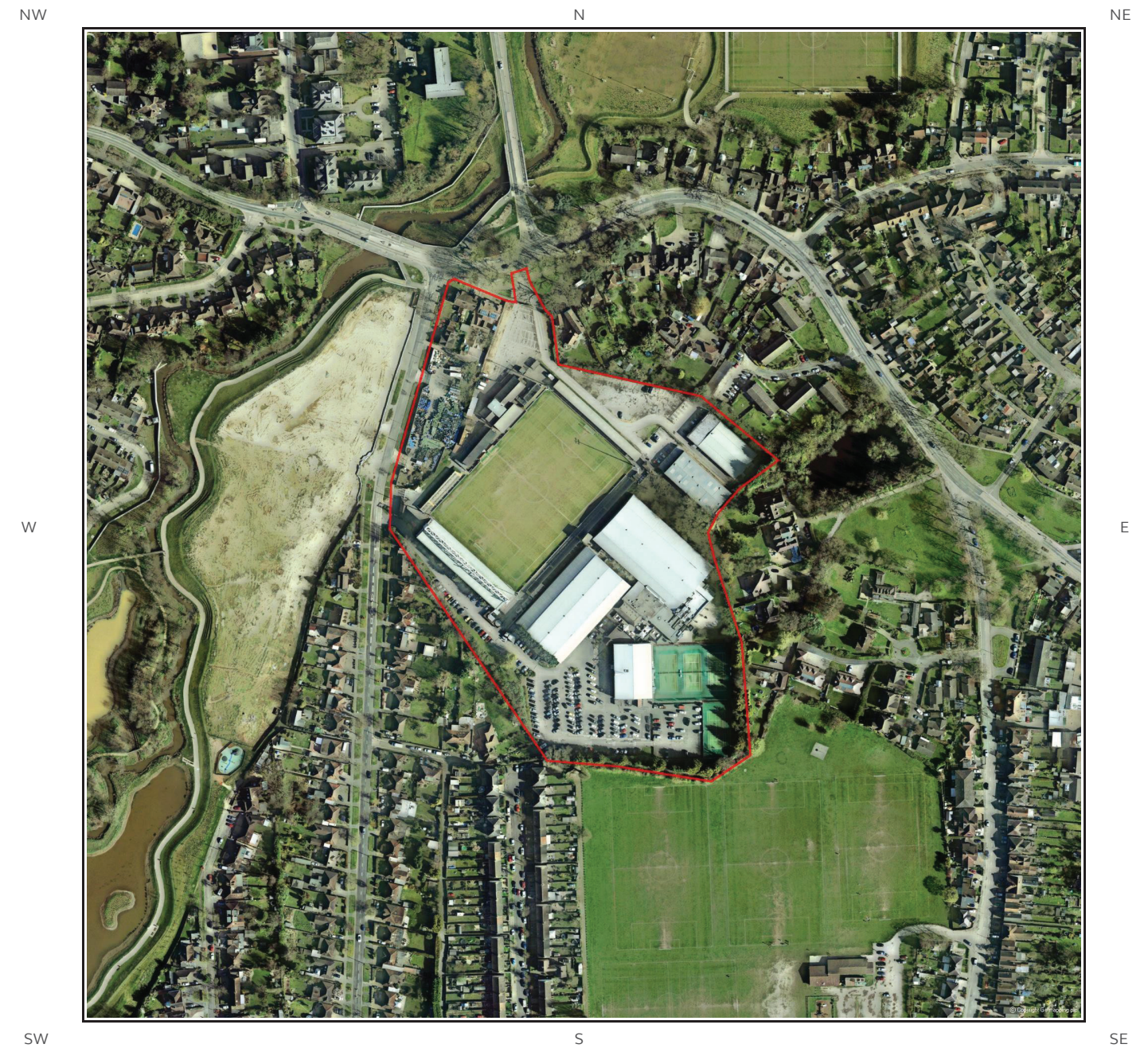
Jomas Associates Ltd

Enc.
Groundsure Enviroinsight



Enviro Insight

Address: WOKING FOOTBALL CLUB, LAITHWAITE COMMUNITY STADIUM, KINGFIELD ROAD, KINGFIELD, WOKING, GU22 9AA
Date: 1 Aug 2018
Reference: HMD-377-5286261
Client: Jomas Associates Ltd



Aerial Photograph Capture date: 20-Apr-2013
Grid Reference: 500569,157301
Site Size: 4.95ha
Report Reference: HMD-377-5286261
Client Reference: P1381J1460-1

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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	1	0	2	11
1.2 Additional Information – Historical Tank Database	2	0	0	0
1.3 Additional Information – Historical Energy Features Database	0	2	6	21
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	3
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	1	7	0	12

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	1	0	2
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	1
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	1	0	0	0	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	0

Section 4: Current Land Use

	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	2	5	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology

5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified			
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	Identified			
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.				

Section 6: Hydrogeology and Hydrology

	0-500m					
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified					
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	2
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	10
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	#250GWV #	#500GWV #	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	No
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	2	18	22	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	Yes	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Environment Agency Zone 2 floodplains within 250m of the study site	Identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low
7.4 Flood Defences within 250m of the study site	Identified
7.5 Areas benefiting from Flood Defences within 250m of the study site	Identified
7.6 Areas used for Flood Storage within 250m of the study site	None identified
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Potential at Surface
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Moderate

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	1
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	3
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	3	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	1
8.14 Records of Green Belt land	0	0	1	1	0	2

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence	Moderate
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Low
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Moderate
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Coal mining areas within 75m of the study site	None identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	None identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon.

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

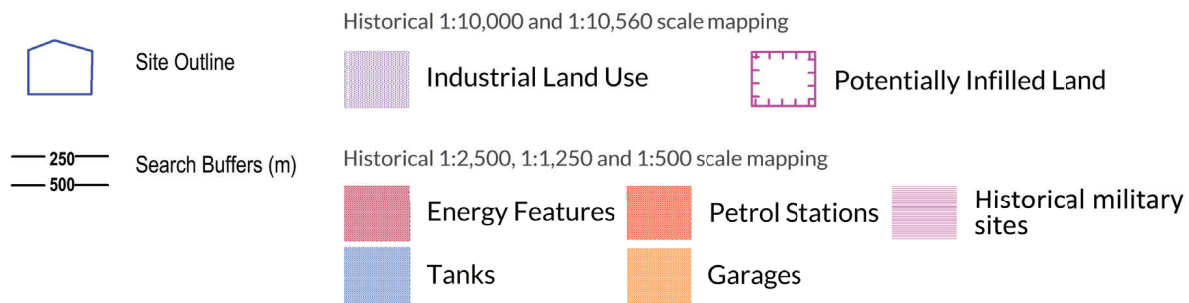
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 14

ID	Distance [m]	Direction	Use	Date
1R	0	On Site	Unspecified Pit	1955
2A	116	E	Nursery	1938
3A	133	E	Nursery	1938
4	263	E	Smithy	1912
5	264	N	Nursery	1895
6	283	NE	Nursery	1912
7B	356	SW	Nurseries	1938
8B	359	SW	Nurseries	1938
9B	359	SW	Nursery	1913
10D	459	W	Nursery	1938
11C	460	W	Nursery	1913
12C	460	W	Nursery	1895
13D	460	W	Nursery	1938
14	465	NE	Nursery	1912

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 2

ID	Distance (m)	Direction	Use	Date
15E	0	On Site	Unspecified Tank	1993
16E	0	On Site	Unspecified Tank	1988

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

29

ID	Distance (m)	Direction	Use	Date
17F	38	NE	Electricity Substation	1993
18F	38	NE	Electricity Substation	1988
19G	53	W	Electricity Substation	1992
20G	53	W	Electricity Substation	1992
21	120	SW	Electricity Substation	1988
22H	209	E	Electricity Substation	1993
23H	210	E	Electricity Substation	1994
24	213	N	Electricity Substation	1992
25	266	W	Electricity Substation	1993
26I	316	NE	Electricity Substation	1971
27I	316	NE	Electricity Substation	1993
28J	333	E	Electricity Substation	1993
29J	333	E	Electricity Substation	1972
30	382	S	Electricity Substation	1994
31K	389	N	Electricity Substation	1972
32K	391	N	Electricity Substation	1994
33L	408	NW	Electricity Substation	1992
34L	409	NW	Electricity Substation	1987
35	410	W	Electricity Substation	1992
36M	415	NE	Electricity Substation	1993
37M	415	NE	Electricity Substation	1995
38M	415	NE	Electricity Substation	1972
39N	461	S	Electricity Substation	1994
40N	461	S	Electricity Substation	1971
41N	461	S	Electricity Substation	1993
42O	467	N	Electricity Substation	
43O	467	N	Electricity Substation	
44P	482	E	Electricity Substation	
45P	483	E	Electricity Substation	

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary:

0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary:

3

ID	Distance (m)	Direction	Use	Date
46Q	368	E	Garage	1967
47Q	368	E	Garage	1971
48Q	369	E	Garage	1966

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary:

0

Database searched and no data found.

1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 20

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
49R	0	On Site	Unspecified Pit	1955
50S	4	E	Pond	1895
51S	4	E	Pond	1870
52S	9	NE	Pond	1912
53S	9	NE	Pond	1938
54S	15	E	Pond	1982
55S	15	E	Pond	1974
56S	15	E	Pond	1992
57	309	S	Ponds	1895
58	325	S	Pond	1870
59	376	N	Pool	1974
60	377	NW	Pond	1895
61T	390	N	Pool	1992
62T	390	N	Pool	1982
63	408	S	Pond	1912

64U	442	NE	Ponds	1955
65U	450	NE	Pond	1992
66V	450	NE	Pond	1982
67V	450	NE	Pond	1974
68	497	W	Pond	1895

2. Environmental Permits, Incidents and Registers Map



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- Site Outline
- Search Buffers (m)
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

Database searched and no data found.

0

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

Database searched and no data found.

0

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

Database searched and no data found.

0

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

Database searched and no data found.

0

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

Database searched and no data found.

0

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

Database searched and no data found.

0

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

Database searched and no data found.

0

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

3

ID	Distance (m)	Direction	NGR	Details
2	23	NW	500477 157480	Address: COFFER DAM AT HOE VALLEY, VOLKERFITZPATRICK HOE VALLEY, WESTFIELD AVENUE, WOKING, SURREY, GU22 9PG Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: EPRFP3620GX Permit Version: 1 Receiving Water: HOE STREAM Status: SURRENDERED UNDER EPR 2010 Issue date: 14/12/2010 Effective Date: 14-Dec-2010 Revocation Date: 31/07/2012
3A	424	N	500500 157900	Address: Poplar Grove Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1715 Permit Version: 1 Receiving Water: STANFORD BROOK Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 02/11/1989 Effective Date: 02-Nov-1989 Revocation Date: 02/09/2010
4A	424	N	500500 157900	Address: Poplar Grove Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1715 Permit Version: 2 Receiving Water: Stanford Brook Status: SURRENDERED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03-Sep-2010 Revocation Date: 19/08/2014

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

Database searched and no data found.

0

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

Database searched and no data found.

0

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

Database searched and no data found.

0

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

1

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
1	349	NE	500701 157791	Incident Date: 07-Jul-2003 Incident Identification: 171418 Pollutant: Inorganic Chemicals/Products Pollutant Description: Other Inorganic Chemical or Product Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

Database searched and no data found.

0

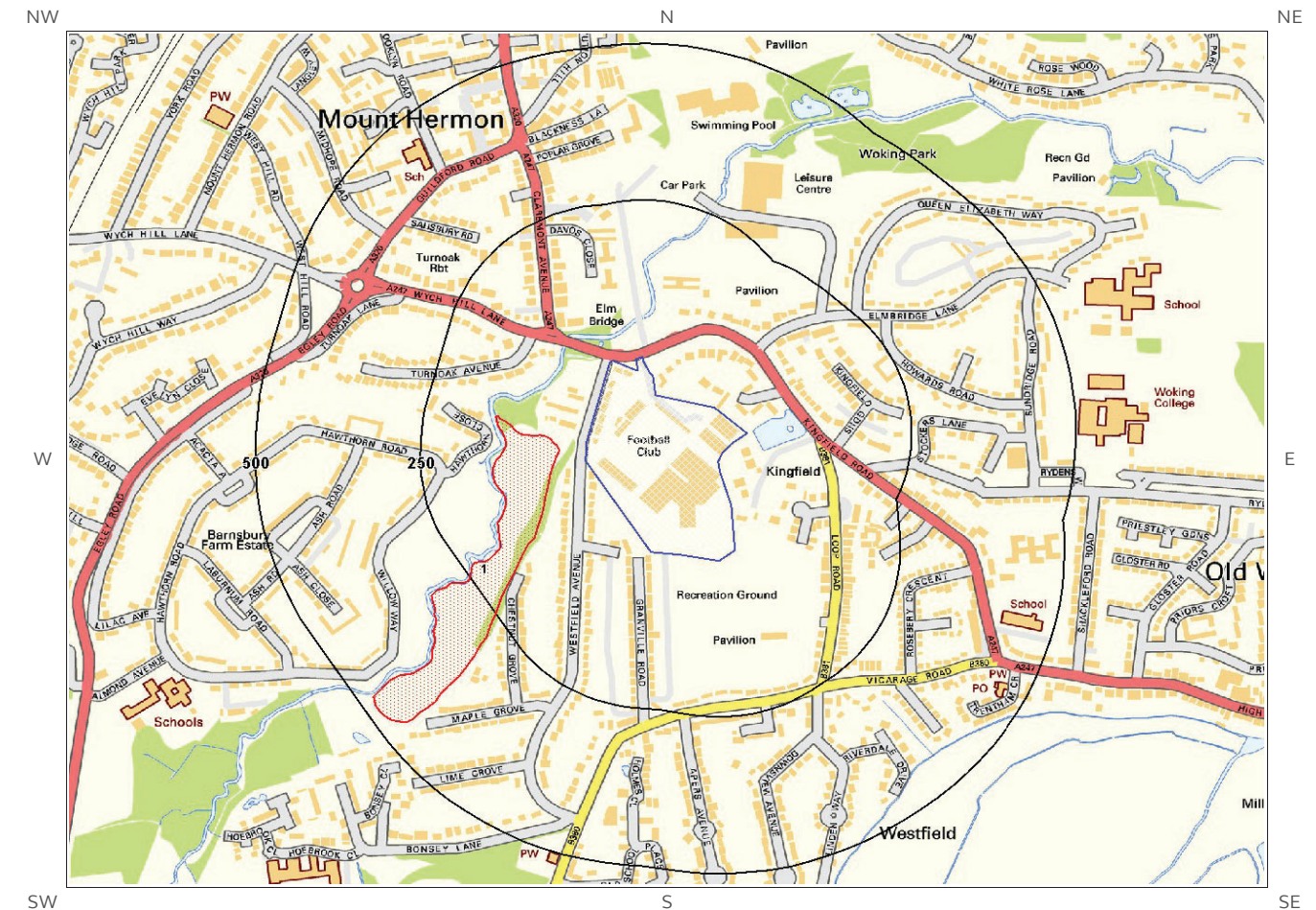
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site

Database searched and no data found.

0

3. Landfill and Other Waste Sites Map



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- EA/NRW Active Landfill
- EA/NRW Historic Landfill
- BGS / DoE Survey Landfill
- EA/NRW Licensed Waste Site
- Historic and Planned Waste Sites
- Local Authority/Historical Mapping Landfill Records
- Site Outline
- Search Buffers (m)

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

1

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
1	41	W		Site Address: Westfield Tip, Woking Waste Licence: - Site Reference: WO/15, WO/15/LOC, WO/14 Waste Type: Commercial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1970 Last Recorded: 31-Dec-1979

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

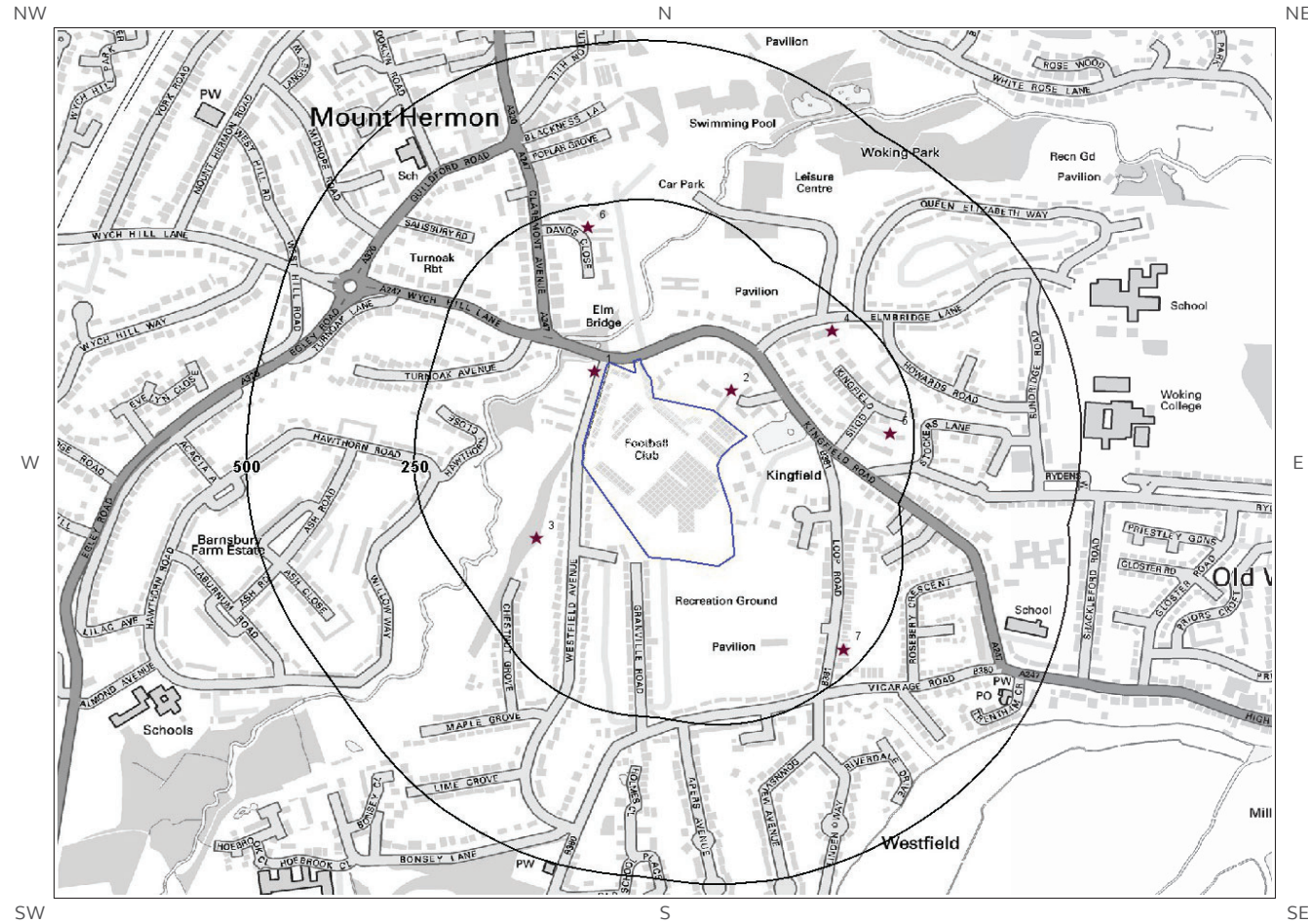
Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

0

Database searched and no data found.

4. Current Land Use Map



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- Site Outline
- Current Industrial Sites
- Electricity Transmission Cables
- Search Buffers (m)
- Petrol & Fuel Sites
- Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 7

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	16	W	Electricity Sub Station	500478 157459	GU22	Electrical Features	Infrastructure and Facilities
2	41	NE	Electricity Sub Station	500682 157429	GU22	Electrical Features	Infrastructure and Facilities
3	122	SW	Electricity Sub Station	500392 157197	GU22	Electrical Features	Infrastructure and Facilities
4	209	NE	Intelligent Devices	500832 157522	Elmbridge House, Elmbridge Lane, Woking, GU22 9AF	Electronic Equipment	Industrial Products
5	214	E	Electricity Sub Station	500919 157361	GU22	Electrical Features	Infrastructure and Facilities
6	216	N	Electricity Sub Station	500468 157685	GU22	Electrical Features	Infrastructure and Facilities
7	219	SE	Peter Croucher	500849 157022	66, Loop Road, Woking, GU22 9BQ	Electrical Equipment Repair and Servicing	Repair and Servicing

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
KPGR-XSV	KEMPTON PARK GRAVEL MEMBER	SAND AND GRAVEL

5.3 Bedrock and Solid Geology

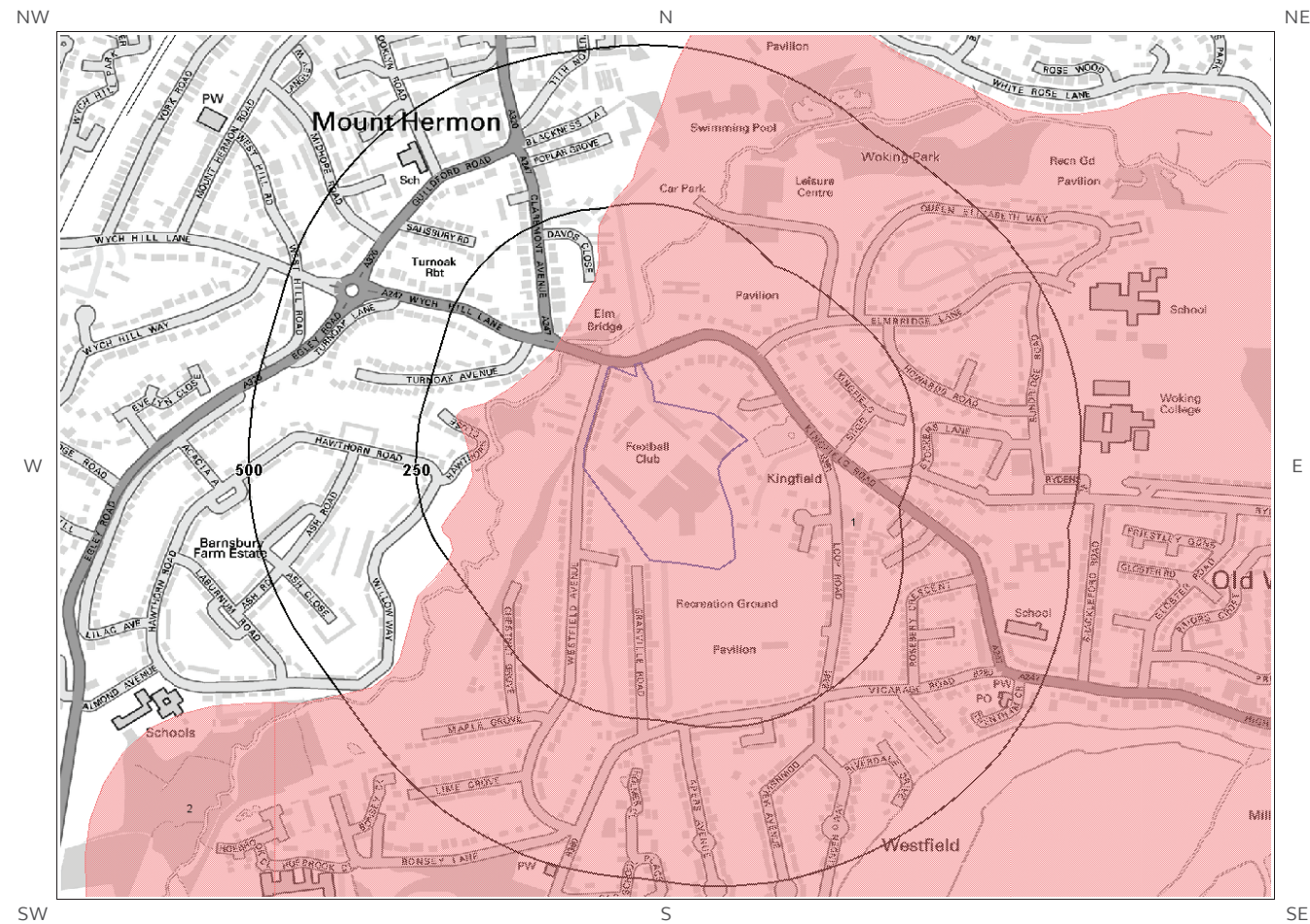
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
LC-XCZS	LONDON CLAY FORMATION	CLAY, SILT AND SAND
BGS-S	BAGSHOT FORMATION	SAND

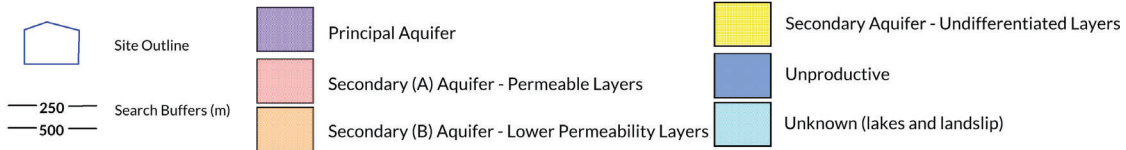
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

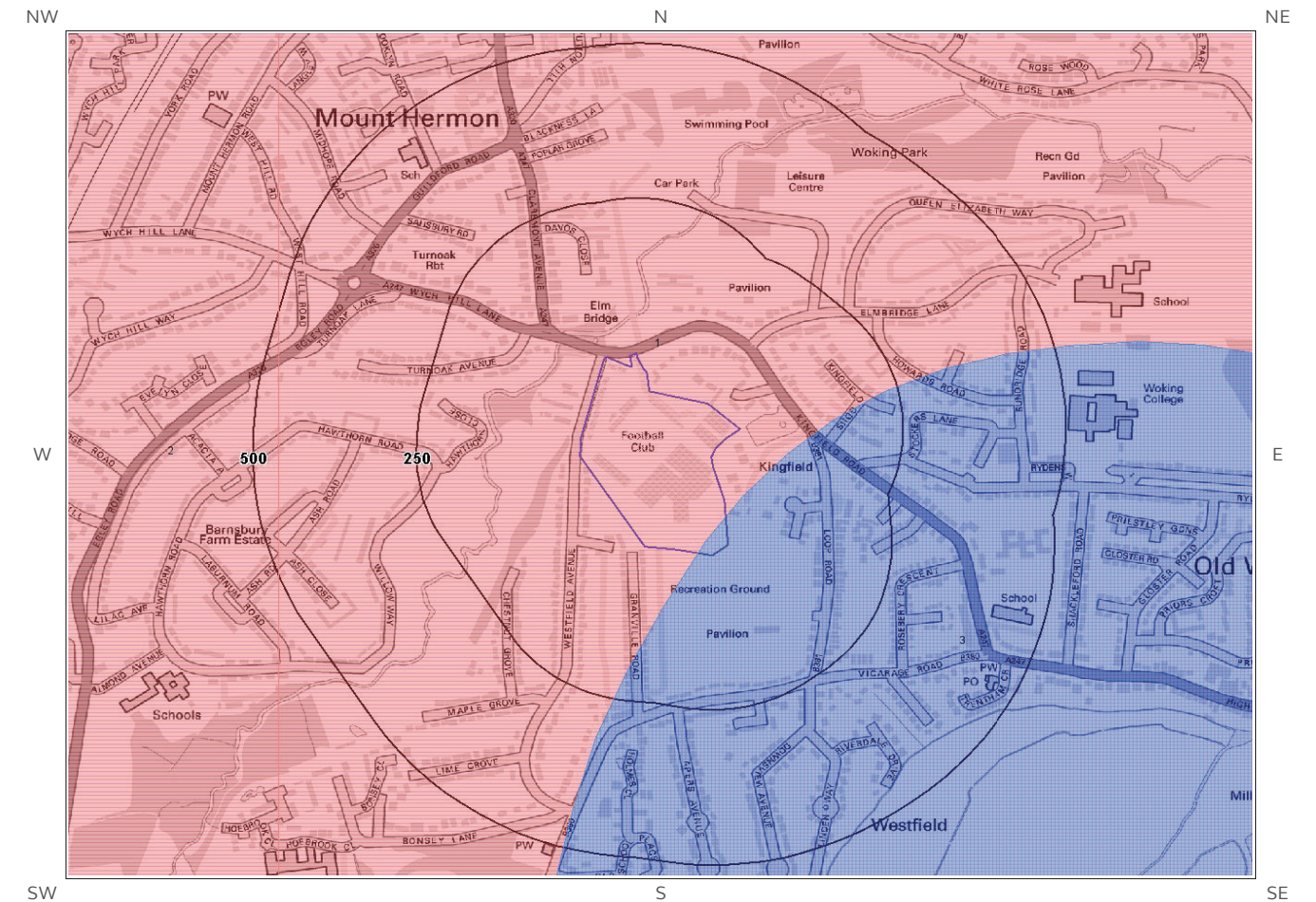
6a. Aquifer Within Superficial Geology



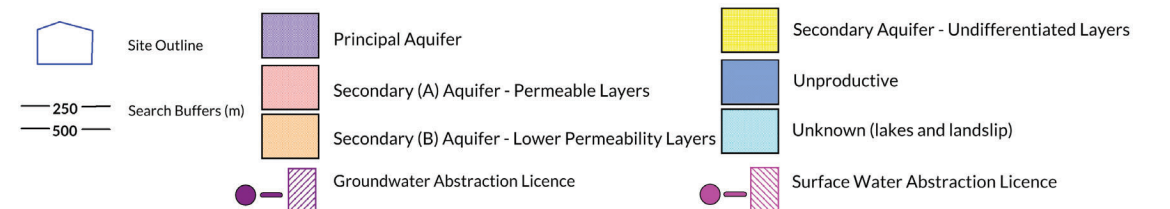
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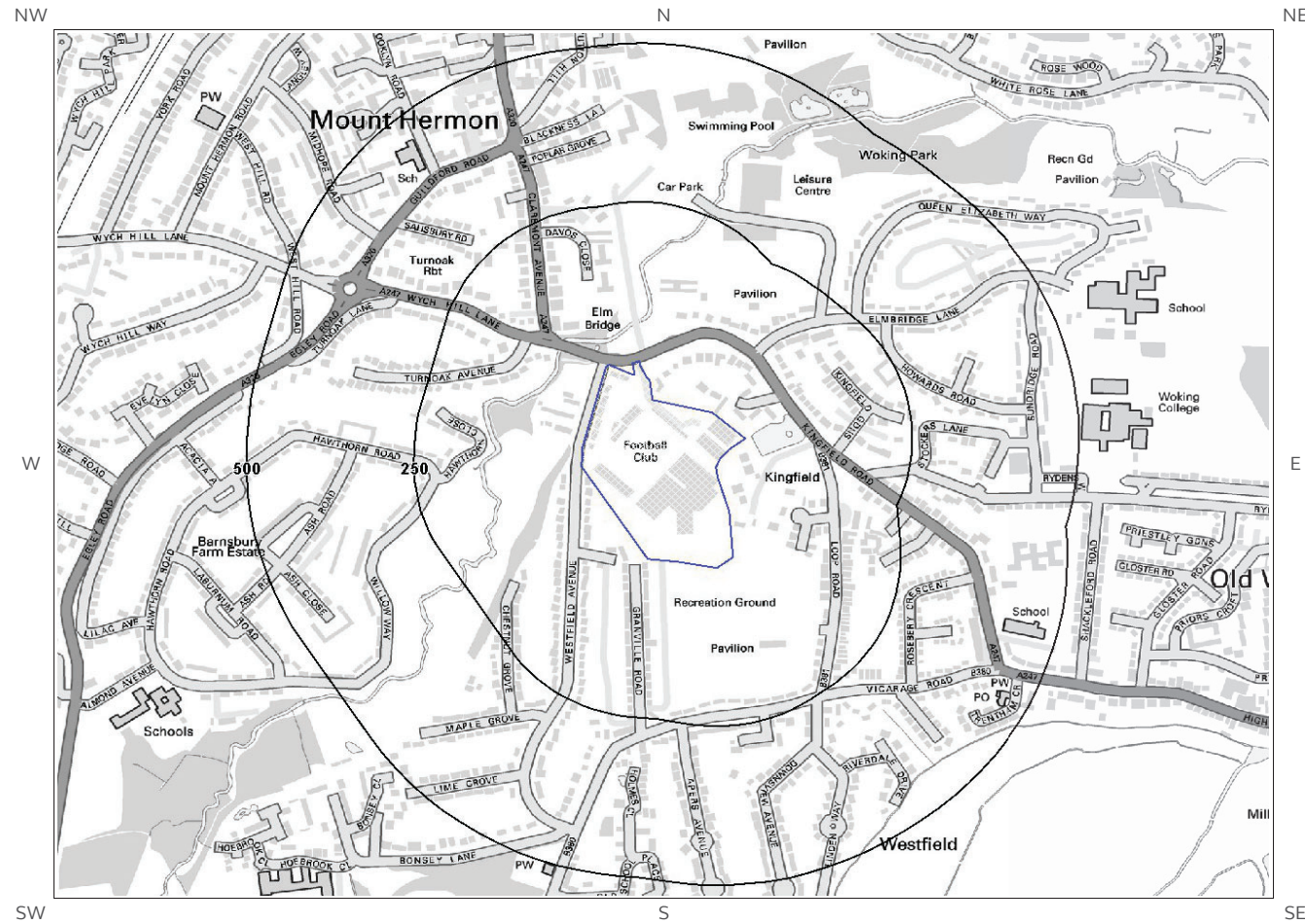
6b. Aquifer Within Bedrock Geology and Abstraction Licences



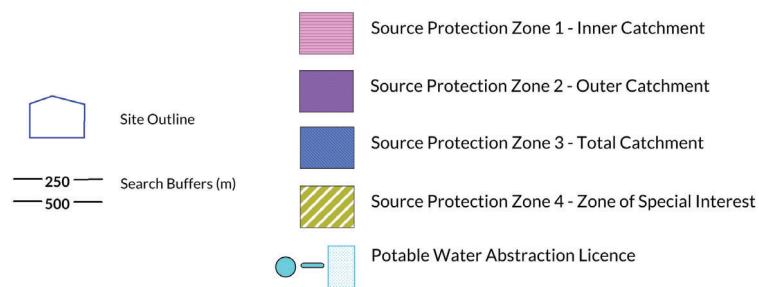
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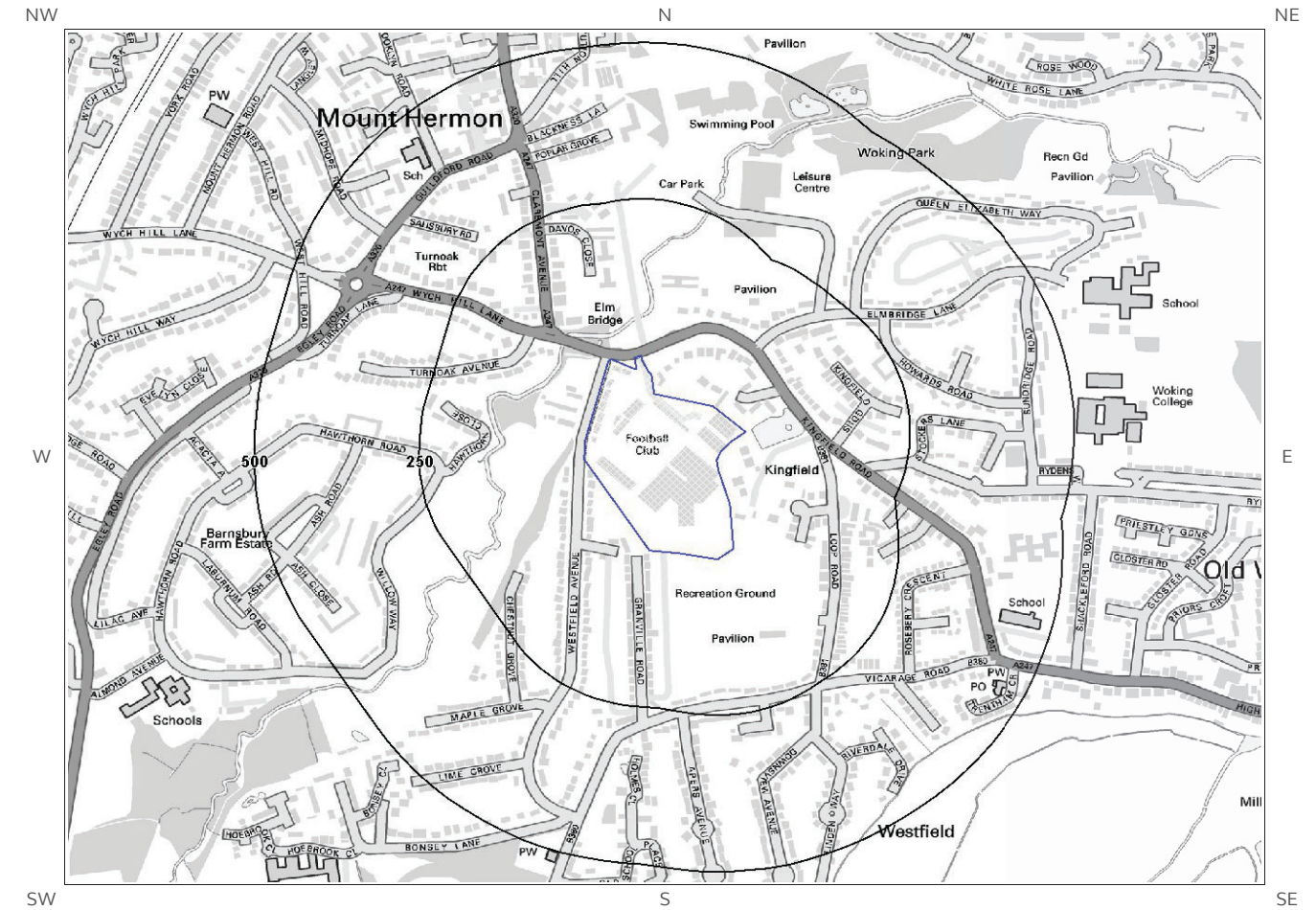
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



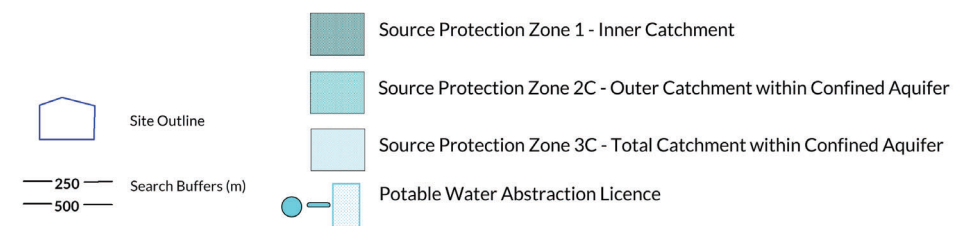
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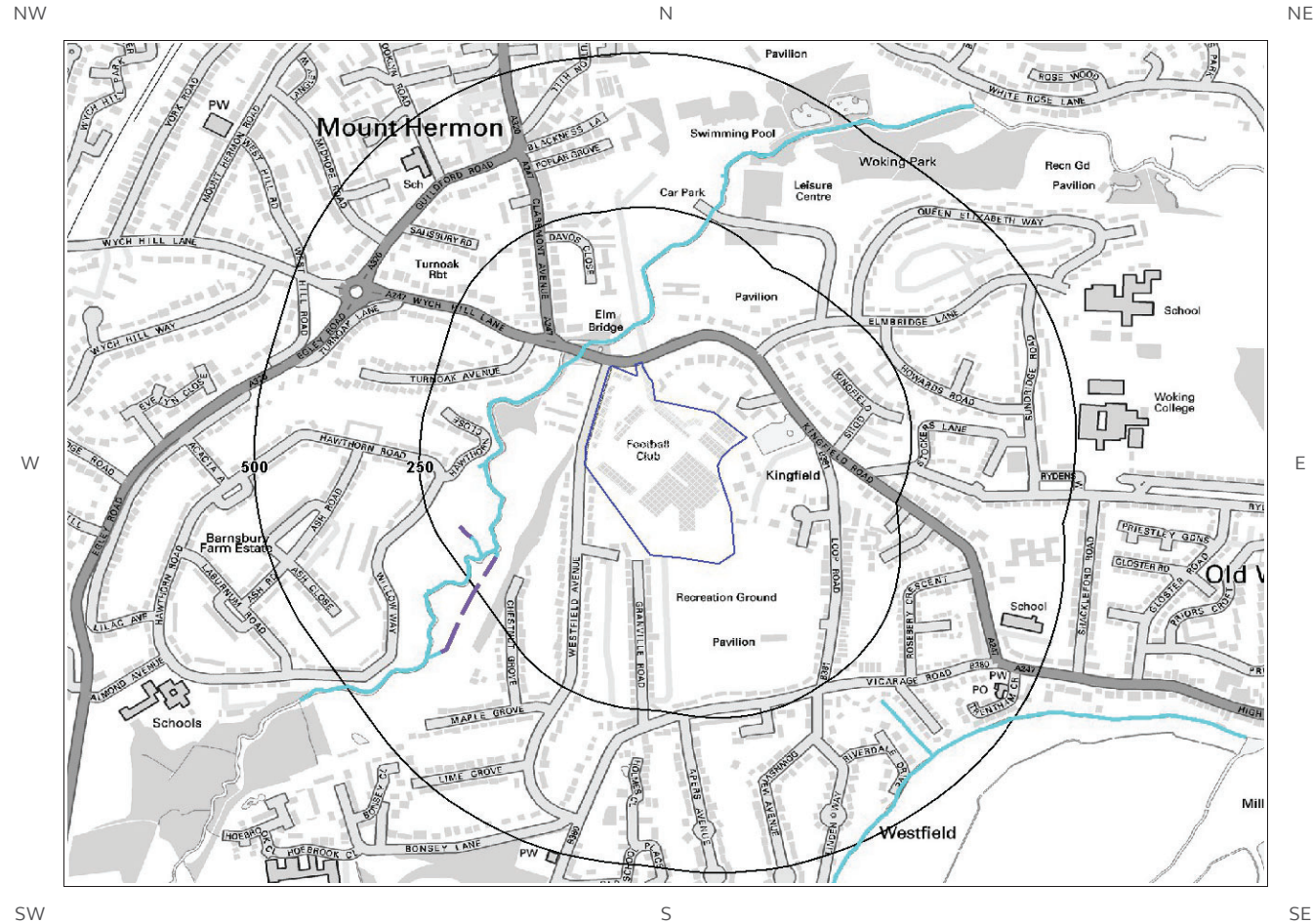
6d. Hydrogeology – Source Protection Zones within confined aquifer



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6e. Hydrology – Watercourse Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
3	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
2	461	W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

Identified

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	1275	S	500900 155900	<p>Status: Active Licence No: 28/39/30/0287 Details: Spray Irrigation - Storage Direct Source: Thames Groundwater Point: Omega, Moor Lane, Westfield - Borehole Data Type: Point Name: DAVIS</p> <p>Annual Volume (m³): 3200 Max Daily Volume (m³): 328 Original Application No: WRA/4342/1 Original Start Date: 5/8/1975 Expiry Date: - Issue No: 100 Version Start Date: 8/1/1988 Version End Date:</p>
Not shown	1275	S	500900 155900	<p>Status: Active Licence No: 28/39/30/0287 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Omega, Moor Lane, Westfield - Borehole Data Type: Point Name: DAVIS</p> <p>Annual Volume (m³): 3200 Max Daily Volume (m³): 328 Original Application No: WRA/4342/1 Original Start Date: 5/8/1975 Expiry Date: - Issue No: 100 Version Start Date: 8/1/1988 Version End Date:</p>

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

Identified

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	1158	SE	501458 156305	<p>Status: Active Licence No: TH/039/0030/024 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: Thames Surface Water - Non Tidal Point: River Wey At Gresham Mill, Old Woking, Surrey Data Type: Point Name: Linden Limited</p> <p>Annual Volume (m³): 0 Max Daily Volume (m³): 0 Application No: NPS/WR/010471 Original Start Date: 5/8/2011 Expiry Date: 31/3/2027 Issue No: 2 Version Start Date: 18/10/2012 Version End Date:</p>
Not shown	1158	SE	501458 156305	<p>Status: Historical Licence No: TH/039/0030/024 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: Thames Surface Water - Non Tidal Point: River Wey At Gresham Mill Data Type: Point Name: Linden Homes South East Limited</p> <p>Annual Volume (m³): 0 Max Daily Volume (m³): 0 Application No: NPS/WR/006738 Original Start Date: 5/8/2011 Expiry Date: 31/3/2027 Issue No: 1 Version Start Date: 5/8/2011 Version End Date:</p>
Not shown	1601	E	502300 157500	<p>Status: Historical Licence No: 28/39/30/0097 Details: Spray Irrigation - Direct Direct Source: Thames Surface Water - Non Tidal Point: Hoe Stream At Woking - Point 'b' Data Type: Point Name: BURHILL ESTATES CO LTD</p> <p>Annual Volume (m³): 13638 Max Daily Volume (m³): 545.52 Application No: WRA/557 Original Start Date: 3/8/2009 Expiry Date: - Issue No: 100 Version Start Date: 18/12/1980 Version End Date:</p>

ID	Distance (m)	Direction	NGR	Details
Not shown	1611	E	502308 157516	<p>Status: Historical Licence No: TH/039/0030/002 Details: Spray Irrigation - Direct Direct Source: Thames Surface Water - Non Tidal Point: Hoe Stream At Woking - Point 'b' Data Type: Point Name: BURHILL ESTATES CO LTD</p> <p>Annual Volume (m³): 37850 Max Daily Volume (m³): 251 Application No: NPS WR 000 824 Original Start Date: 3/8/2009 Expiry Date: 31/3/2015 Issue No: 1 Version Start Date: 3/8/2009 Version End Date:</p>
Not shown	1611	E	502308 157516	<p>Status: Historical Licence No: 28/39/30/0097 Details: Spray Irrigation - Direct Direct Source: Thames Surface Water - Non Tidal Point: Hoe Stream At Woking - Point 'b' Data Type: Point Name: BURHILL ESTATES CO LTD</p> <p>Annual Volume (m³): 5500 Max Daily Volume (m³): 30.5 Application No: NPS WR 000 824 Original Start Date: 3/8/2009 Expiry Date: - Issue No: 101 Version Start Date: 3/8/2009 Version End Date:</p>
Not shown	1611	E	502308 157520	<p>Status: Active Licence No: 28/39/30/0097 Details: Spray Irrigation - Direct Direct Source: Thames Surface Water - Non Tidal Point: Hoe Stream At Woking - Point 'b' Data Type: Point Name: BURHILL ESTATES CO LTD</p> <p>Annual Volume (m³): 5500 Max Daily Volume (m³): 30.5 Application No: NPS WR 000 824 Original Start Date: 3/8/2009 Expiry Date: - Issue No: 102 Version Start Date: 3/8/2009 Version End Date:</p>
Not shown	1611	E	502308 157520	<p>Status: Active Licence No: TH/039/0030/002/R01 Details: Spray Irrigation - Storage Direct Source: Thames Surface Water - Non Tidal Point: Hoe Stream At Woking - Point 'b' Data Type: Point Name: BURHILL ESTATES CO LTD</p> <p>Annual Volume (m³): 37850 Max Daily Volume (m³): 251 Application No: NPS/WR/017002 Original Start Date: 1/4/2015 Expiry Date: 31/3/2027 Issue No: 1 Version Start Date: 1/4/2015 Version End Date:</p>
Not shown	1984	NW	498670 158240	<p>Status: Historical Licence No: 28/39/30/0427 Details: Transfer between sources Direct Source: Thames Surface Water - Non Tidal Point: Inland Water (basingstoke Canal) At Langmans Bridge, Lock 7 Data Type: Point Name: SURREY COUNTY COUNCIL</p> <p>Annual Volume (m³): - Max Daily Volume (m³): - Application No: WRA/S/1188 Original Start Date: 27/4/2005 Expiry Date: 31/3/2015 Issue No: 1 Version Start Date: 27/4/2005 Version End Date:</p>
Not shown	1984	NW	498670 158240	<p>Status: Historical Licence No: 28/39/30/0427 Details: River Recirculation Direct Source: Thames Surface Water - Non Tidal Point: Inland Water (basingstoke Canal) At Langmans Bridge, Lock 7 Data Type: Point Name: SURREY COUNTY COUNCIL</p> <p>Annual Volume (m³): 634000 Max Daily Volume (m³): 1728 Application No: - Original Start Date: 27/4/2005 Expiry Date: 31/3/2015 Issue No: 2 Version Start Date: 25/10/2006 Version End Date:</p>
Not shown	1984	NW	498670 158240	<p>Status: Active Licence No: 28/39/30/0427/R01 Details: River Recirculation Direct Source: Thames Surface Water - Non Tidal Point: Inland Water (basingstoke Canal) At Langmans Bridge, Lock 7 Data Type: Point Name: SURREY COUNTY COUNCIL</p> <p>Annual Volume (m³): 634000 Max Daily Volume (m³): 1728 Application No: NPS/WR/017212 Original Start Date: 1/4/2015 Expiry Date: 31/3/2027 Issue No: 1 Version Start Date: 1/4/2015 Version End Date:</p>

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
318	SE	Minor Aquifer/Intermediate Leaching Potential	I2	Soils which can possibly transmit non – or weakly adsorbed pollutants and liquid discharges but are unlikely to transmit adsorbed pollutants.
432	SE	Minor Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.
461	W	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site None identified

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/Direction	Name	Type of Watercourse	Additional Details
1	39 N	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.5
67	39 N	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.5
2	136 W	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.4
68	136 W	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.4
3	151 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.1
69	151 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.1
4	189 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
5	189 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.1
70	189 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
71	189 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.1
6	191 SW	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.1

ID	Distance/Direction	Name	Type of Watercourse	Additional Details
72	191 SW	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.1
7	195 SW	- Alternative Name: -	Lake, loch or reservoir.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 10.2
73	195 SW	- Alternative Name: -	Lake, loch or reservoir.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 10.2
8	207 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
74	207 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
9	208 SW	- Alternative Name: -	Lake, loch or reservoir.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 15.0
75	208 SW	- Alternative Name: -	Lake, loch or reservoir.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 15.0
10	214 SW	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.1
76	214 SW	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.1
11	308 NE	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	308 NE	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
12	309 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 7.3
78	309 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 7.3
13	311 NE	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 4.9
Not shown	311 NE	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 4.9

ID	Distance/Direction	Name	Type of Watercourse	Additional Details
14	312 SW	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.1
80	312 SW	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.1
15	324 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 4.8
Not shown	324 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 4.8
16	325 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
82	325 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
17	326 NE	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 4.9
Not shown	326 NE	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 4.9
18	350 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.1
84	350 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.1
19	374 SW	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.0
85	374 SW	Hoe Stream Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 5.0
20	444 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.7
21	444 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 1.9
86	444 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.7

ID	Distance/Direction	Name	Type of Watercourse	Additional Details
Not shown	444 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 1.9

6.11 Surface Water Features

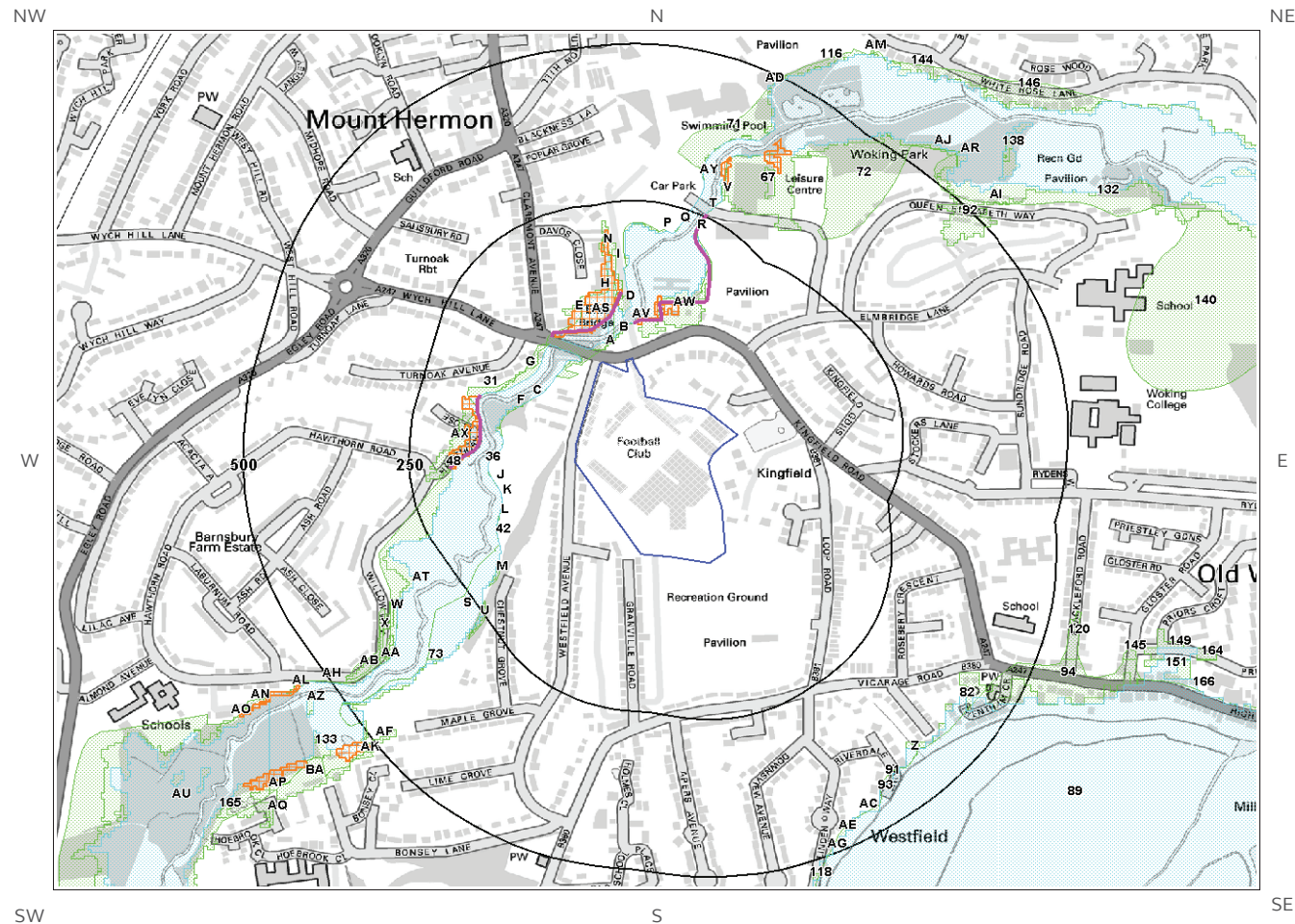
Surface water features within 250m of the study site

Identified

The following surface water records are not represented on mapping:

Distance (m)	Direction
9	E
36	N
37	W
60	N
165	W
189	N
208	SW
213	SW

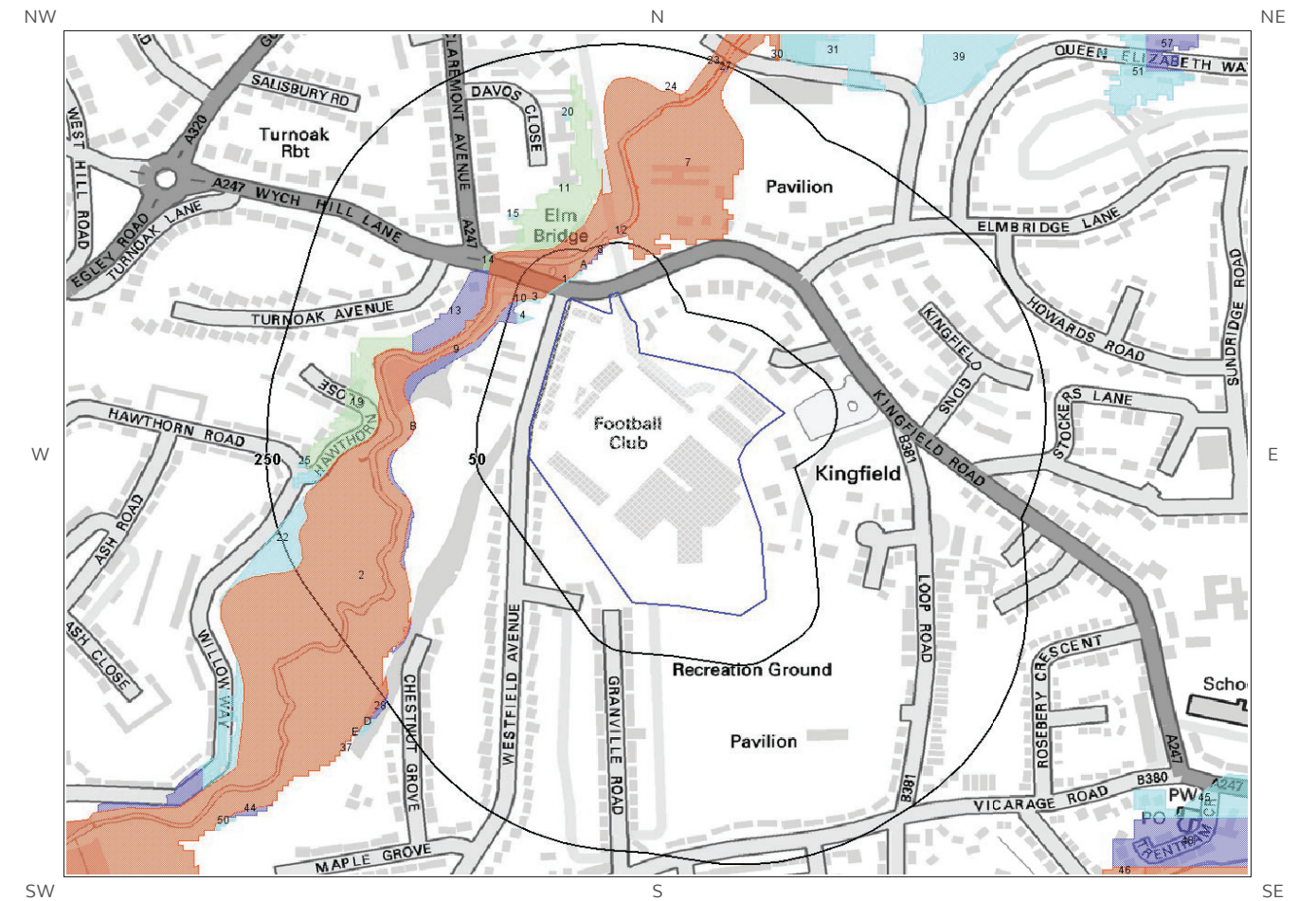
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



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- Zone 2 Floodplain
- Zone 3 Floodplain
- Area used for Flood Storage
- Area Benefiting from Flood Defences
- Site Outline
- Flood Defences
- Search Buffers (m)

7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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- Very Low
- Low
- Medium
- High
- Site Outline
- Search Buffers (m)

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m Identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	16	NW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
2AS	20	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
3A	20	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
4A	24	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
5A	26	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
6AT	26	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
7A	32	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
8B	36	NW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
9AW	37	NE	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
10AR	39	NW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
11B	47	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
12AV	55	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
13D	66	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
14E	74	NW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
15I	79	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
16C	79	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
17C	87	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
18D	91	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
19E	94	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)

20C	94	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
21D	95	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
22C	99	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
23F	102	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
24F	104	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
25G	104	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
26G	107	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
27H	108	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
28F	111	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
29	111	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
30H	114	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
31	115	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
32J	122	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
33K	123	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
34I	124	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
35J	130	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
36	131	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
37K	132	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
38L	143	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
39	146	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
40L	148	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
41AX	158	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
42	160	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
43S	168	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
44N	169	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
45M	183	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
46	185	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
47M	188	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)

48	190	W	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
49O	191	NE	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
50N	193	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
51M	198	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
52O	203	NE	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
53P	203	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
54M	208	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
55P	211	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
56Q	214	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
57Q	214	NE	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
58R	215	NE	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
59R	226	NE	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
60R	229	NE	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
61S	237	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
62U	245	SW	29-May-2018	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m Identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Type
1	26	NW	30-May-2018	Zone 3 - (Fluvial Models)
2AS	28	W	30-May-2018	Zone 3 - (Fluvial Models)
3A	36	N	30-May-2018	Zone 3 - (Fluvial Models)
4A	124	N	30-May-2018	Zone 3 - (Fluvial Models)

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRaS flood Risk
1	17.0	NW	Low
2	18.0	NW	High
3	23.0	W	Low
4	27.0	W	Low
5A	29.0	N	Medium
6A	36.0	NW	Medium
7	37.0	NE	High
8	39.0	N	Medium
9	40.0	W	Medium
10	40.0	W	Low

7.4 Flood Defences

Flood Defences within 250m of the study site Identified

The following flood defence records are represented as lines on the Flood Map:

ID	Distance (m)	Direction	Update
190	54	N	11-May-2018
191	57	N	11-May-2018
192	60	NW	11-May-2018
193	96	NE	11-May-2018
194	145	W	11-May-2018
195	145	W	11-May-2018

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site Identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site

None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site

Clearwater Flooding or Superficial Deposits Flooding

Clearwater Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

7.8 Groundwater Flooding Confidence Areas

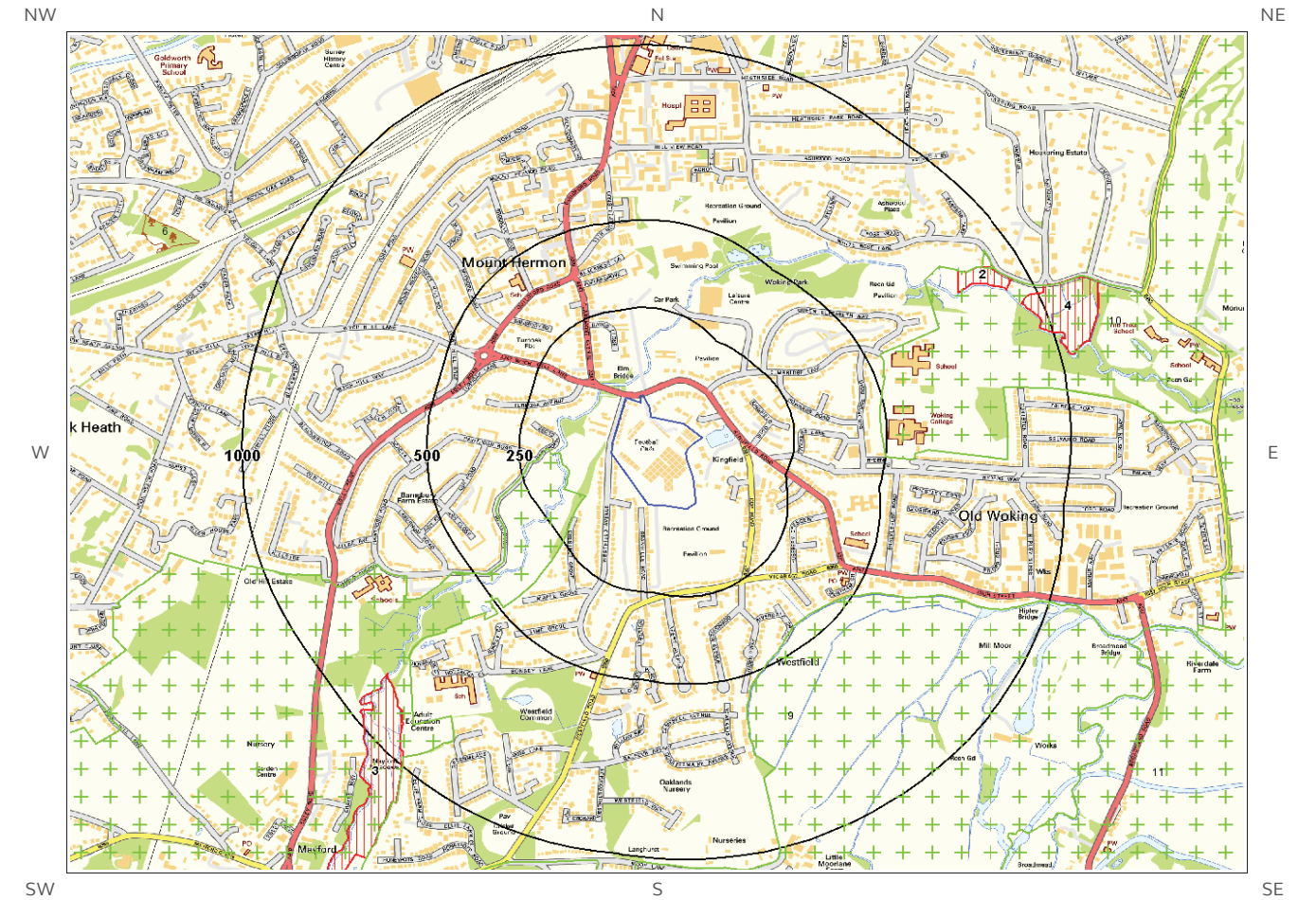
British Geological Survey confidence rating in this result

Moderate












Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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-  AONB
-  Green Belt
-  Ancient Woodland
-  National Park
-  Environmentally Sensitive Areas
-  National Nature Reserve
-  SSSI
-  Special Areas of Conservation
-  Local Nature Reserves
-  Special Protection Areas
-  World Heritage Sites
-  Ramsar Sites
-  Nitrate Vulnerable Zones
-  Nitrate Sensitive Areas

8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

1

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
Not shown	1864	SW	Smart's and Prey Heaths	Natural England

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

3

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
6	1237	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1289	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1712	SW	UNKNOWN	Ancient and Semi-Natural Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

3

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
2	807	NE	White Rose Lane	Natural England
3	855	SW	Mayford Meadows	Natural England
4	948	NE	White Rose Lane	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

1

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
Not shown	1450	NW	Modified	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

4

Green Belt data contains Ordnance Survey data © Crown copyright and database right [2015].

ID	Distance	Direction	Green Belt Name	Local Authority Name
9	125	SW	London Area Greenbelt	Woking District (B)
10	484	E	London Area Greenbelt	Woking District (B)
11	1204	SE	London Area Greenbelt	Guildford District (B)
Not shown	1721	N	London Area Greenbelt	Woking District (B)

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell* hazard rating identified on the study site Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

Maximum Compressible Ground* hazard rating identified on the study site Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property no significant increase in insurance risk due to running sand problems is likely.

* This indicates an automatically generated 50m buffer and site.

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site None identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary None identified

Database searched and no data found.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site None identified

Guidance: No Guidance Required.

Contact Details

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enquiries@bgs.ac.uk

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Rotherham, S60 1BY
Tel: 03708 506 506
Web: www.environment-agency.gov.uk
Email: enquiries@environment-agency.gov.uk



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www.coal.gov.uk



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Local Authority
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Phone: 01483 755 855
Web: <http://www.woking.gov.uk/>
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Tel: 01252 845444



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APPENDIX 3 – OS HISTORICAL MAPS

Site Details:

WOKING FOOTBALL CLUB,
LAITHWAITE COMMUNITY
STADIUM, KINGFIELD ROAD,
KINGFIELD, WOKING, GU22
9AA

Client Ref: P1381J1460-1
Report Ref: HMD-377-5286263
Grid Ref: 500583, 157316

Map Name: County Series

Map date: 1870-1871

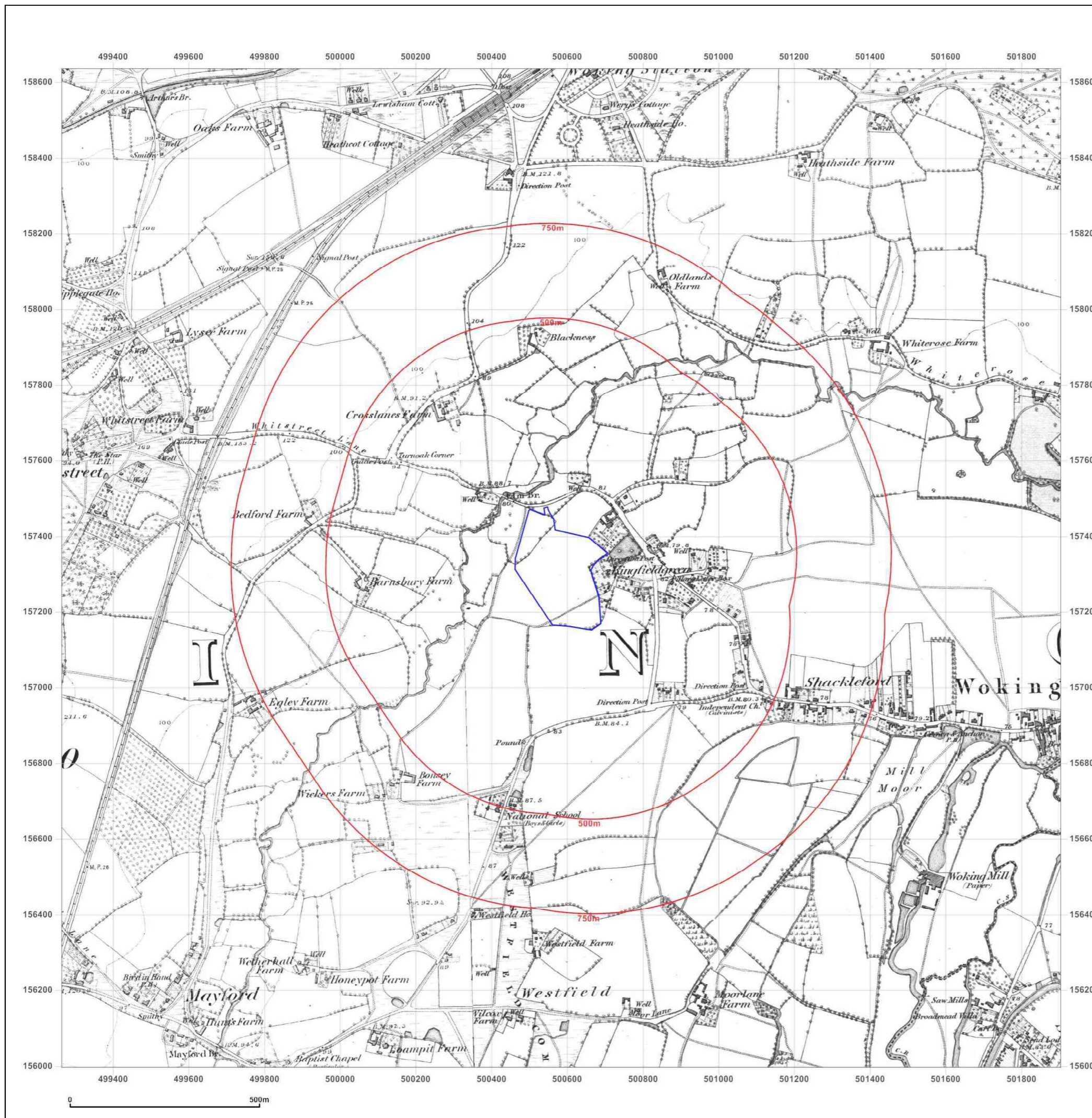
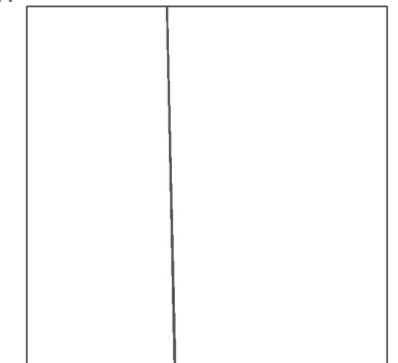
Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1871
Revised 1871
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1870
Revised 1870
Edition N/A
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Production date: 01 August 2018

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

Site Details:

WOKING FOOTBALL CLUB,
LAITHWAITE COMMUNITY
STADIUM, KINGFIELD ROAD,
KINGFIELD, WOKING, GU22
9AA

Client Ref: P1381J1460-1
Report Ref: HMD-377-5286263
Grid Ref: 500583, 157316

Map Name: County Series

Map date: 1895-1897

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1871
Revised 1895
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1871
Revised 1895
Edition 1897
Copyright N/A
Levelled N/A



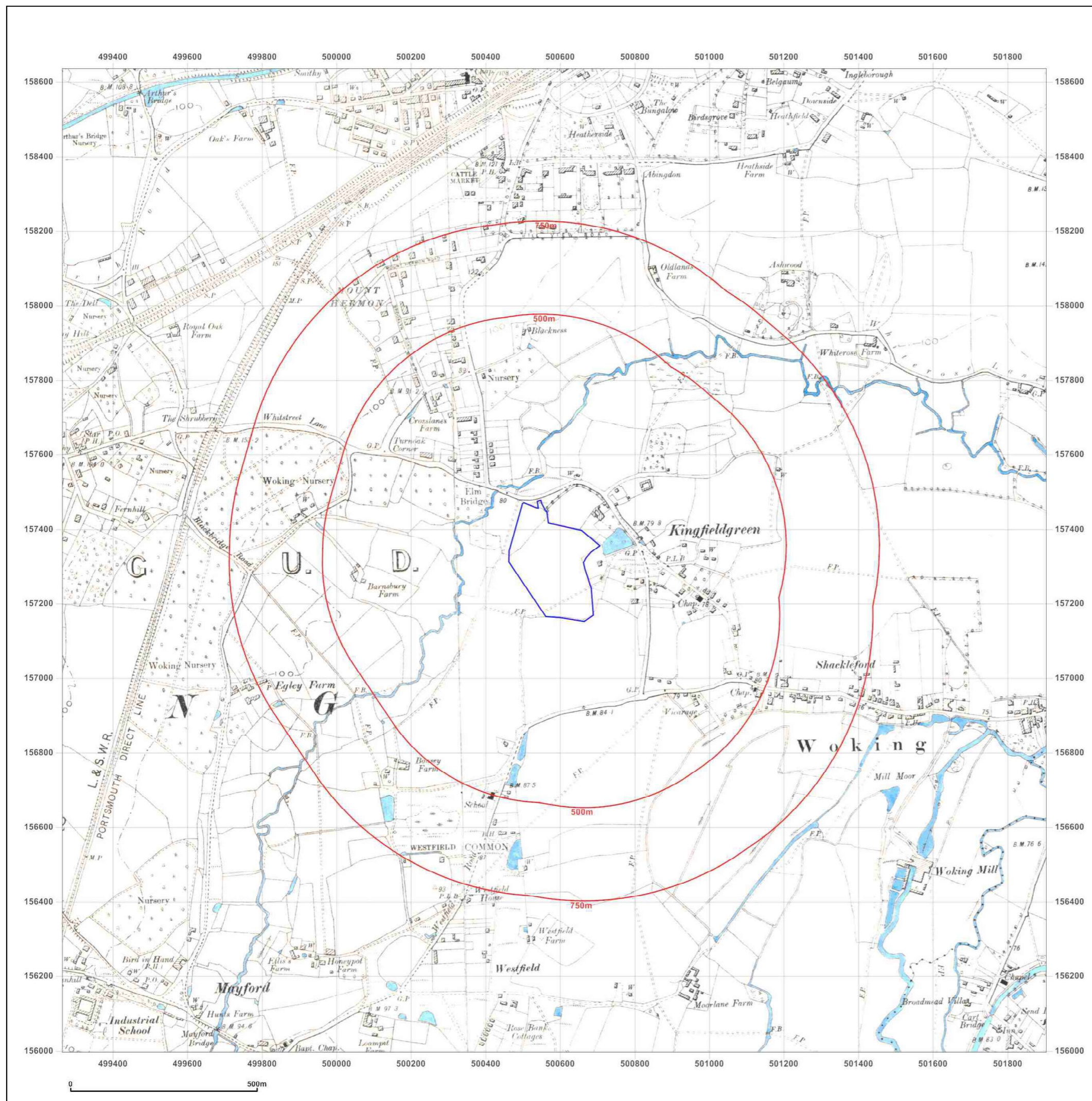
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Production date: 01 August 2018

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Site Details:

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LAITHWAITE COMMUNITY
STADIUM, KINGFIELD ROAD,
KINGFIELD, WOKING, GU22
9AA

Client Ref: P1381J1460-1
Report Ref: HMD-377-5286263
Grid Ref: 500583, 157316

Map Name: County Series

Map date: 1895-1897

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1871
Revised 1895
Edition 1897
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Surveyed 1871
Revised 1895
Edition N/A
Copyright N/A
Levelled N/A



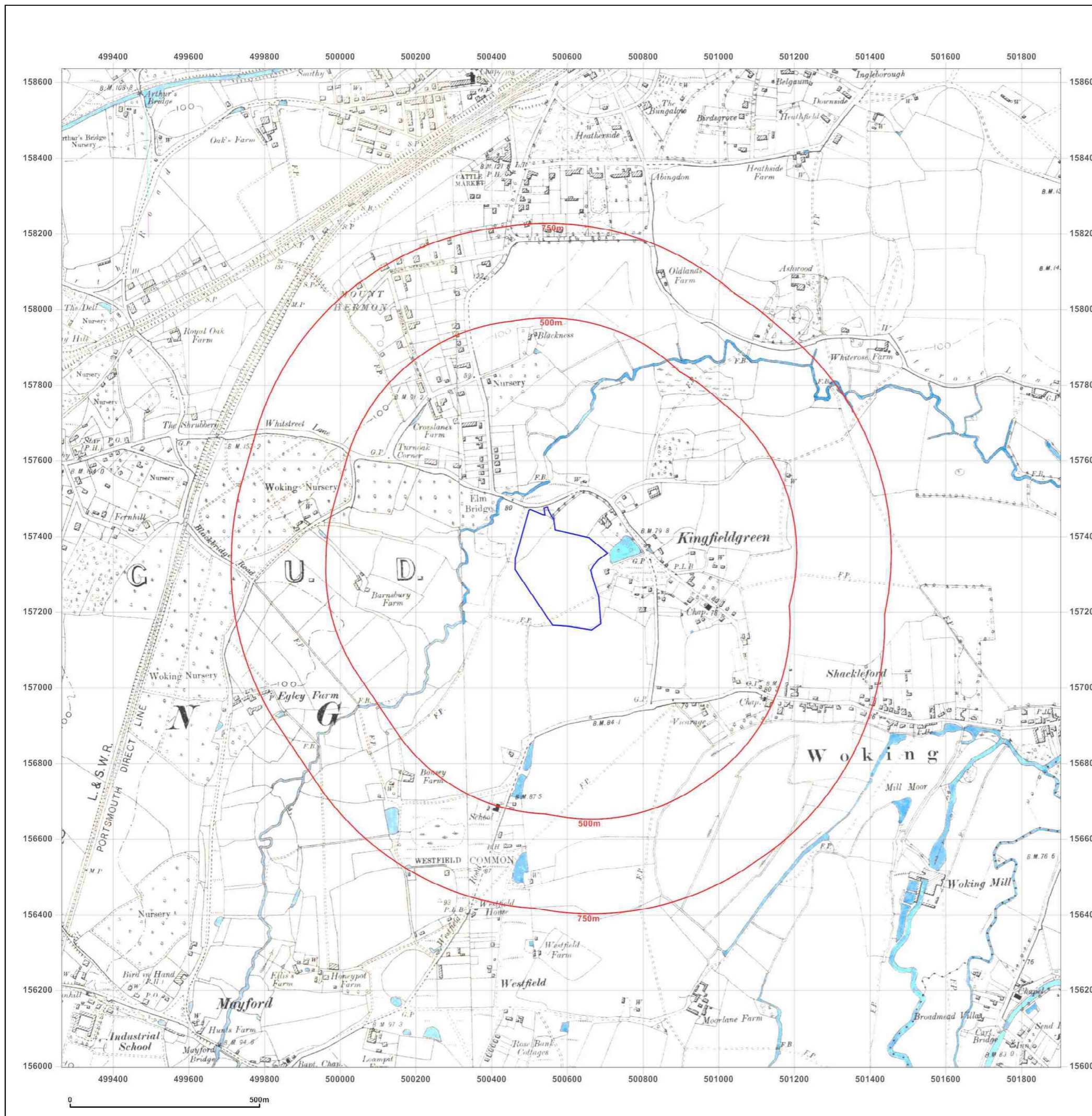
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Site Details:

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9AA

Client Ref: P1381J1460-1
Report Ref: HMD-377-5286263
Grid Ref: 500583, 157316

Map Name: County Series

Map date: 1912-1913

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1913
Edition N/A
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Surveyed 1870
Revised 1912
Edition N/A
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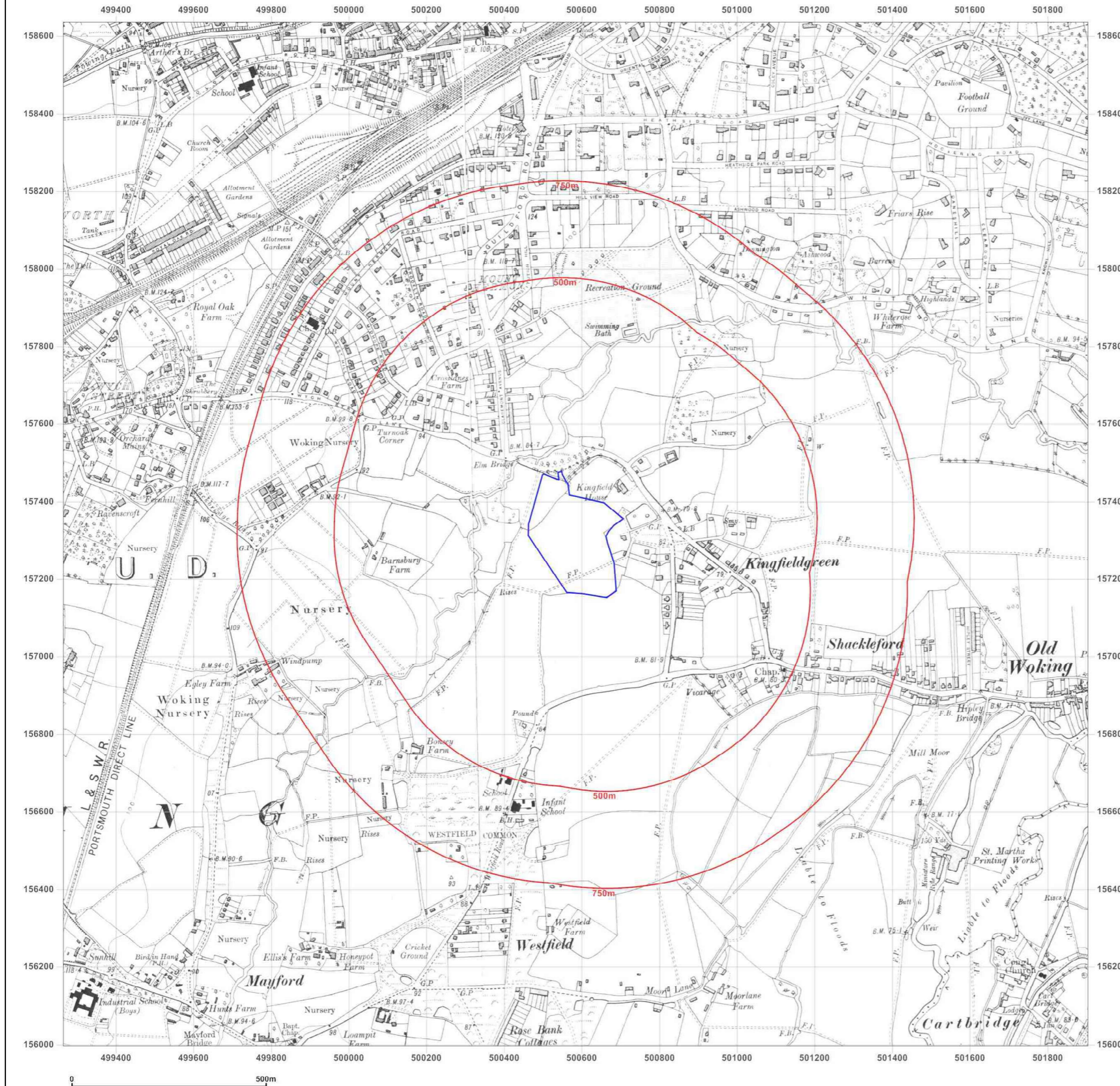
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9AA

Client Ref: P1381J1460-1
Report Ref: HMD-377-5286263
Grid Ref: 500583, 157316

Map Name: County Series

Map date: 1934-1935

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1935
Edition N/A
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Surveyed 1870
Revised 1934
Edition N/A
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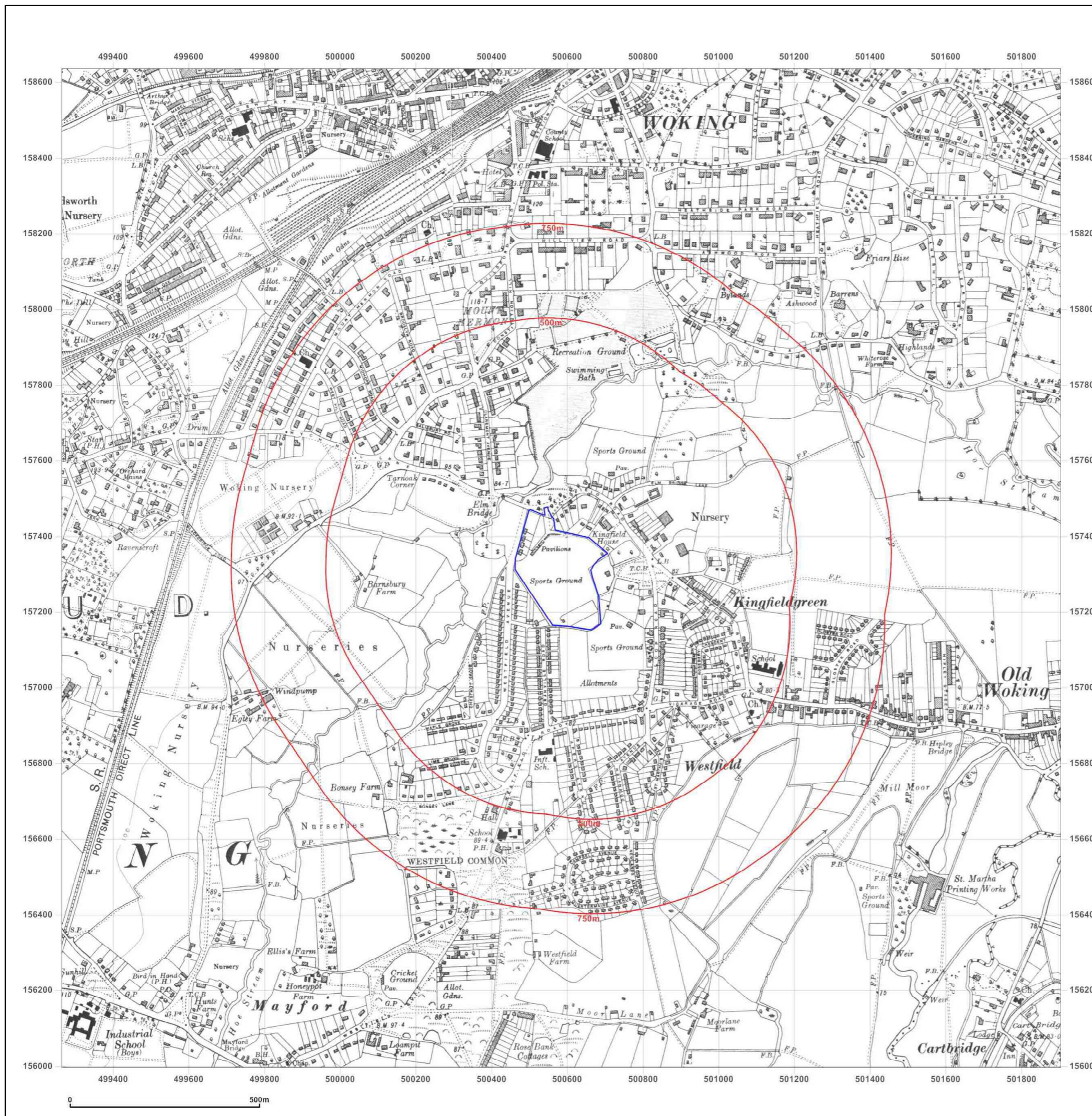
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9AA

Client Ref: P1381J1460-1
Report Ref: HMD-377-5286263
Grid Ref: 500583, 157316

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1938
Edition 1938
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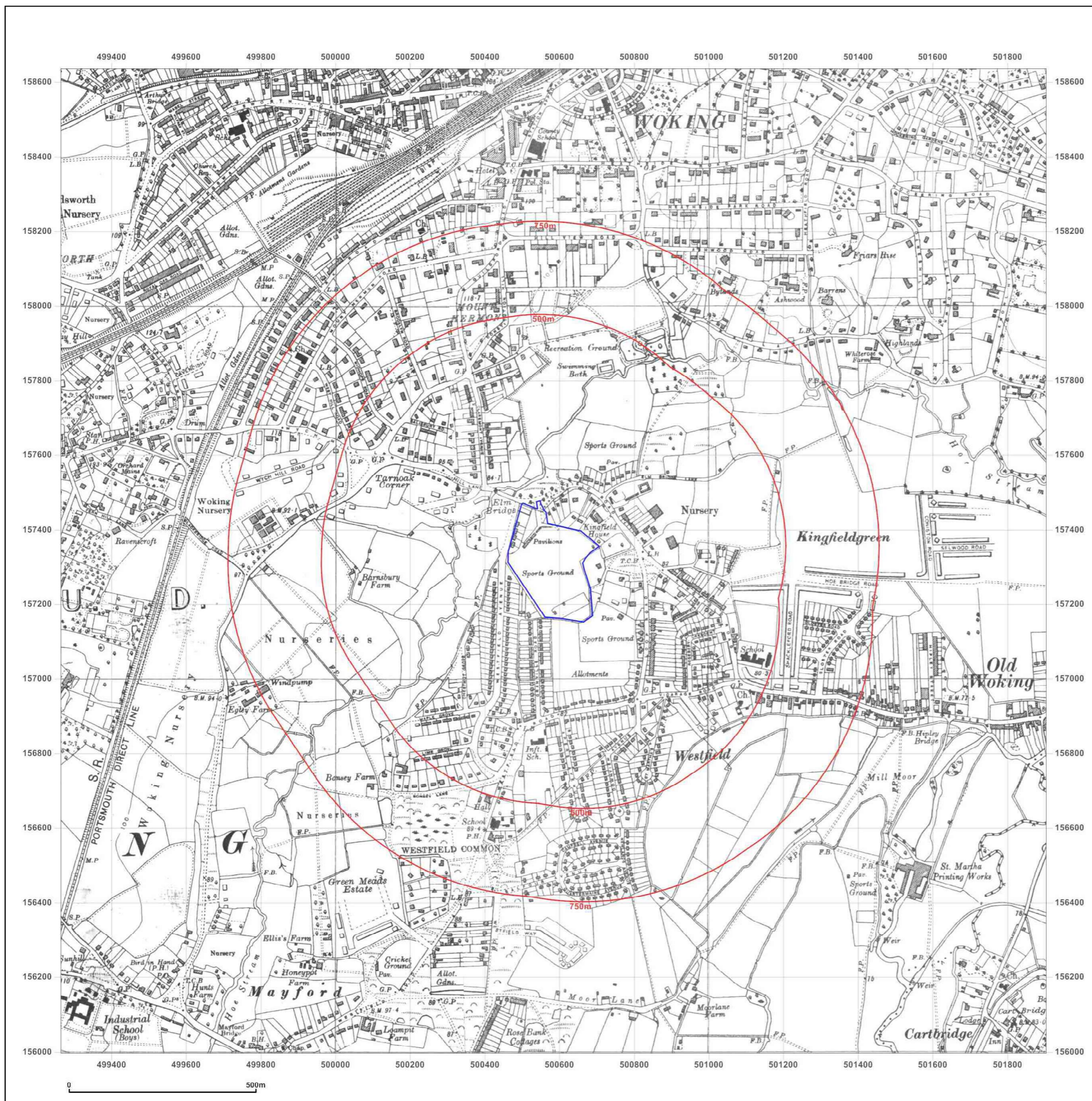
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Client Ref: P1381J1460-1
Report Ref: HMD-377-5286263
Grid Ref: 500583, 157316

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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Surveyed 1870
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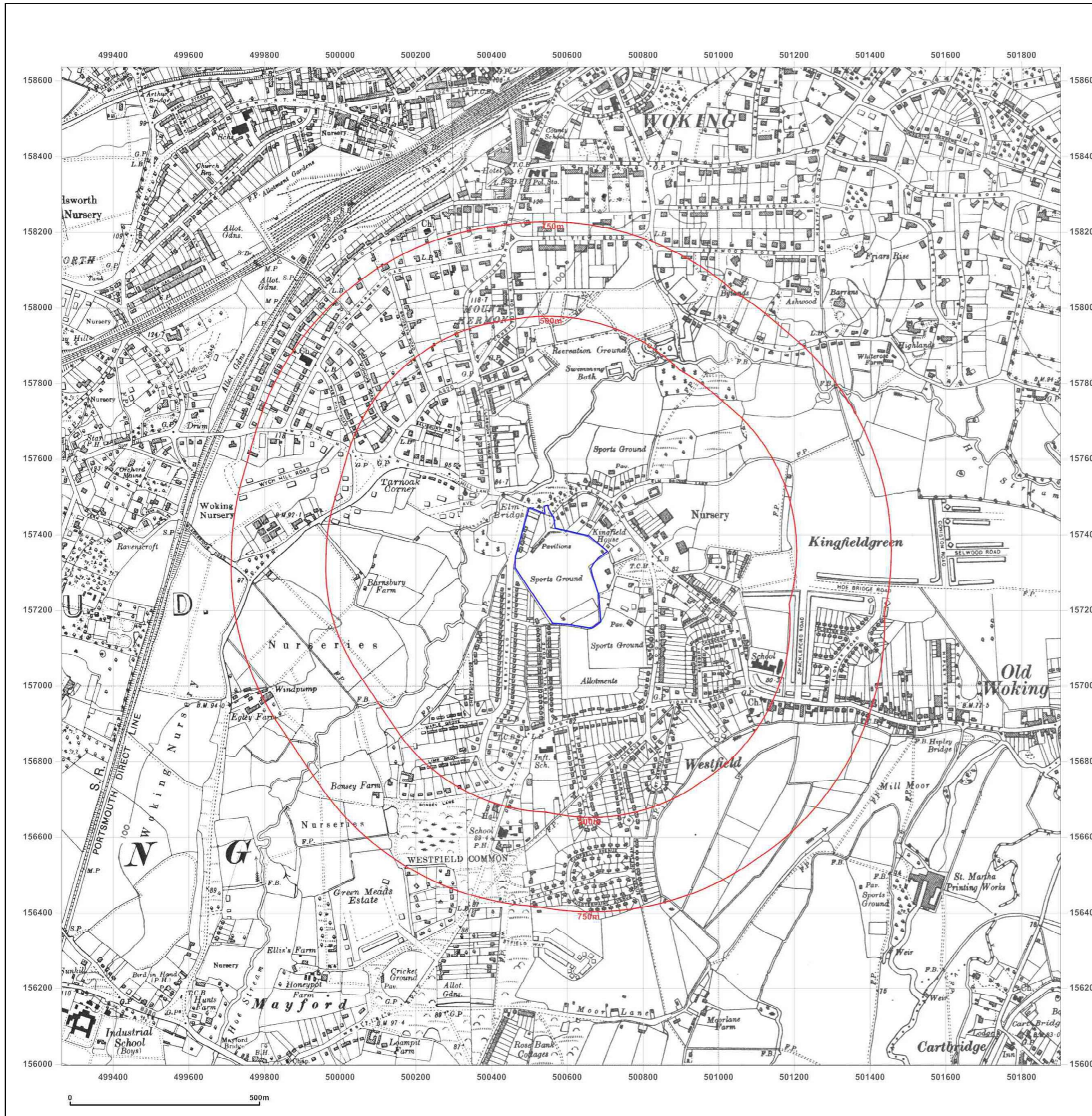
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Client Ref: P1381J1460-1
Report Ref: HMD-377-5286263
Grid Ref: 500583, 157316

Map Name: Provisional

Map date: 1955

Scale: 1:10,560

Printed at: 1:10,560



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Client Ref: P1381J1460-1
Report Ref: HMD-377-5286263
Grid Ref: 500583, 157316

Map Name: National Grid

Map date: 1974-1977

Scale: 1:10,000

Printed at: 1:10,000



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9AA

Client Ref: P1381J1460-1
Report Ref: HMD-377-5286263
Grid Ref: 500583, 157316

Map Name: National Grid

Map date: 1982

Scale: 1:10,000

Printed at: 1:10,000



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Surveyed 1980
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Client Ref: P1381J1460-1
Report Ref: HMD-377-5286263
Grid Ref: 500583, 157316

Map Name: National Grid

Map date: 1989-1992

Scale: 1:10,000

Printed at: 1:10,000



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