# CHAPTER 3:
# EIA METHODOLOGY

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## 3.1 Introduction

3.1.1 This chapter sets out the methodology used to prepare each chapter of the ES and describes the general structure and content of the technical chapters. In particular, it sets out the process of identifying and assessing the likely significant effects of the Proposed Development on the environment.

3.1.2 Further detail on how the assessment methodology is applied to each topic is presented within the respective technical chapter of this ES.

3.1.3 The ES has been prepared to comply with the EIA Regulations[1] which implement European Council Directive 2014/52/EU. The ES has also drawn on current good practice guidance in EIA.

## 3.2 The Requirement for an EIA

3.2.1 The EIA Regulations implement amendments to EU Directive 2011/92/EU contained within the European Directive 2014/52/EU. They apply to the assessment of environmental impacts that are likely to arise from certain types of public and private projects.

3.2.2 EIA is a systematic process during which potential significant environmental effects from a proposed development project are identified and assessed, and the scope for minimising these is presented to the relevant decision maker (in the EU Directives, the 'competent authority') in an ES accompanying a planning application.

3.2.3 The aim of the EIA is to provide the competent authority with the information necessary to consider potential significant environmental effects (both negative and positive), to ascertain whether these are acceptable, and, where appropriate, to secure mitigation measures to minimise negative impacts prior to granting relevant consents.

3.2.4 The requirement for an EIA is either mandatory or conditional, depending on the classification of the development project and in the latter case, this is based, in turn, on the likelihood of significant effects arising. Under the EIA Regulations, an ES must be submitted with planning applications for "EIA Development". EIA Development may be:

- Schedule 1 Development (development of a description set out at Schedule 1); or
- Schedule 2 Development likely to have significant effects on the environment by virtue of factors such as its nature, size or location (where Schedule 2 Development is development of a description mentioned in column 1 of Schedule 2 where the relevant thresholds in Column 2 are exceeded (or any part of the development is in a "sensitive area" (e.g. AONBs, National Parks)).

3.2.5 Schedule 1 Development always requires EIA. Schedule 2 development requires EIA only if it is likely to have significant effects on the environment.

3.2.6 Schedule 3 of the EIA Regulations describes the criteria that must be taken into account in determining whether a development, which falls within the size threshold applicable to Schedule 2 Development, is likely to have significant impacts and hence should be subject to EIA. These include:

[1] The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (SI 2017/571).

- the characteristics of the development;
- the environmental sensitivity of the location; and
- the characteristics of the potential impact.

3.2.7 Where it is determined that a proposed development requires an EIA or where an ES is submitted, the application is known as an 'EIA Development'.

3.2.8 The Proposed Development is not a Schedule 1 Development.

3.2.9 The Proposed Development falls within a description of development listed within Schedule 2 of the EIA Regulations: paragraph 10b Urban Development Projects. The thresholds for developments under paragraph 10b are:

- the development includes more than 1 hectare of urban development which is not dwellinghouse development; or
- the development includes more than 150 dwellings; or
- the overall area of the development exceeds 5 ha.

3.2.10 The Proposed Development will exceed 150 dwellings and the development area exceeds 5 hectares. Therefore, the Proposed Development was considered to be EIA Development and in accordance with Regulation 15 of the EIA Regulations a Scoping Opinion was requested from Reading Borough Council (RBC).

## 3.3 EIA Scoping and Consultation

3.3.1 Potential environmental topics in relation to the Proposed Development were evaluated, having regard to the EIA Regulations, as part of the scoping exercise and key statutory and non-statutory consultees were consulted. This was carried out in order to determine which topics should be included in the EIA, having regard as to their potential to give rise to likely significant effects.

3.3.2 A Scoping Report, **Volume 4: Appendix A.1**, was submitted to RBC on the 11th February 2020 with a formal request for an EIA Scoping Opinion in accordance with Regulation 15 of the EIA Regulations. The Council subsequently issued their Scoping Opinion on the 1st April 2020 commenting on the proposed scope and methodology of the topics for assessment within the EIA, these are listed in **Table 3.1**. A copy of the Scoping Opinion is provided in **Volume 4: Appendix A.2**.

***Table 3.1: Scope of the Reading Golf Course EIA Topic Chapters***

| Scoped In Topic Chapters |
|---|
| Socio-Economics |
| Traffic and Transport |
| Air Quality |
| Noise and Vibration |
| Water Resources and Flood Risk |
| Ecology |
| Archaeology and Built Heritage |
| Climate Change and Greenhouse Gas Emissions |

| Scoped In Topic Chapters |
|---|
| Landscape Visual Impact Assessment |

3.3.3 A summary of the key points raised in the Scoping Opinion in terms of the overarching approach to the EIA, methodology and criteria for assessment are presented in **Table 3.2** including a response as to where the comments have been addressed within the ES or documents supporting the Application. Where the Scoping Opinion refers to specific technical topics these have been dealt with in each respective ES Chapter.

***Table 3.2: Summary of Key Points Raised in Scoping Opinion***

| Topic / Section | Summary of Comment | Location within the ES or Supporting Documents where Comments are Addressed |
|---|---|---|
| All topics | Residential receptors should include Brooklyn Drive | Chapter 2 The Site<br>Relevant topic assessments |
| Air Quality | Clarify the location of the Air Quality Management Area | The AQMA referred to is the Reading AQMA, which covers Reading town centre and major arterial routes. |
| Cumulative effects | A planning search of 2km should be used. | This Chapter (Chapter 3: EIA Methodology)<br>Topic Chapters<br>Chapter 14: Effect Interactions |
| Socio-Economics | Clarify the study area and consider SODC in the study area for education provision. | Chapter 6: Socio-Economics |
| Transport | No comments raised | |
| Water Resources and Flood Risk | Ground water contamination and surface water quality should be addressed. | Chapter 11: Water Resources |
| Water Resources and Flood Risk | Thames Water should be consulted to ensure sufficient foul water capacity | Volume 4, Appendix D2: Utilities Strategy |
| Ecology | A dormouse survey should be undertaken as there are records within 10km of the Site | Chapter 10: Ecology |
| Ecology | A biodiversity net gain assessment should be provided. | Chapter 10: Ecology |
| Ecology | A lighting assessment should be provided. | Chapter 10: Ecology |
| Archaeology and Built Heritage | A geophysical survey is required. | Chapter 12: Archaeology and Built Heritage |
| Climate Change and GHG Emissions | The assessment should address the loss of mature trees. | Chapter 13: Climate Change and GHG Emissions |
| Climate Change and GHG Emissions | Mitigation should be identified to reduce effects on the global climate. | Chapter 13: Climate Change and GHG Emissions |
| Landscape and Visual Impact Assessment | Spring/Summer views should be assessed. An additional viewpoint is required on Kidmore End Road | Volume 3: Landscape and Visual Impact Assessment |
| Ground Conditions | A Mineral Resource Assessment is required. | This chapter. |

### *Topics to be Scoped Out of the ES*

3.3.4 The following topic chapters in agreement with RBC were scoped out of the ES as standalone chapters:

- Aviation;
- Daylight, Sunlight and Overshadowing;
- Ground Conditions and Land Contamination;
- Major Accidents and Disasters;
- Population and Human Health;
- Waste and Recycling; and
- Wind Microclimate.

3.3.5 These topics are not considered likely to give rise to significant effects. Below is further detail and justification for the exclusion from the ES.

#### *Aviation*

3.3.6 The Site is not located near any airports. The closest airport is London Heathrow Airport, approximately 33 km to the east of the Site. The Proposed Development includes low density housing and as the Site is located a significant distance away from London Heathrow Airport, and other airports, it can be concluded that there will be no likely adverse impacts on operations at any airports as a result of the Proposed Development, and as such, this will not be considered further within this ES.

#### *Daylight, Sunlight and Overshadowing*

3.3.7 The Proposed Development comprises of low density housing and does not include any tall buildings, structures or massing that could lead to daylight, sunlight or overshadowing (DSO) effects upon homes either within the Proposed Development or in the surrounding area. The proposed residential homes will be low density and no greater than 2.5 storeys in height with suitable separation distances between the properties therefore we expect compliance with the 25 degree rule of thumb as outlined in British Research Establishment (BRE) guidance. Therefore, it is considered unlikely to have any significant effects on DSO and in line with the EIA Regulations and agreement with RBC it has been scoped out of this ES.

#### *Ground Conditions and Contamination*

3.3.8 A Minerals Resource Assessment (submitted with this application) has been undertaken and concludes that an estimated 171,000 tonnes of Black Park Gravel are located within the Site boundary, although the usable quantity is reduced to 147,000 once buffers and standoffs, and uneconomic reserves less than 1 m thick are excluded. The mineral tonnage would be insufficient to justify on-site processing. Off-site processing is of no commercial interest due to the high silt load; there would be environmental impacts associated with both extraction and the import of materials for restoration, especially given the close proximity of residents.

3.3.9 The baseline conditions at the Site have been established through the findings of a Geo-environmental assessment undertaken by IDOM in November 2019.

3.3.10 A review of historical mapping indicates that the Site was developed as a golf course in the first half of the twentieth century and, prior to this, is presumed to have been farmland. The only structure built at the Site is a club house and accompanying car park located in the south eastern area.

3.3.11 The ground conditions encountered at the Site typically comprised Topsoil over River Terrace Gravel deposits of very clayey sand and gravel or very gravelly clay. The underlying bedrock geology comprised strata inferred as the Lambeth in the eastern and southern areas and Seaford Chalk Formation and Newhaven Chalk Formation in the northern area.

3.3.12 Groundwater was not struck during drilling, but wet gravel layers were noted at some locations.

3.3.13 Solution features within the Chalk Formation have been recorded within the vicinity of the Site, including areas of existing residential development located off-site. The potential presence of solution features at the Site will need to be considered as part of foundation design.

3.3.14 There was no visual or olfactory evidence of contamination within the soils encountered during the intrusive investigation. Chemical testing of soil samples collected from shallow depths did not indicate the presence of concentrations of chemical species that would present potential harm to identified receptors. The conceptual model presented identified a no or low risk to potential receptors, and the report concluded that no remedial measures are required to support a residential development. However, further investigative work is likely to be required in the area of the club house and car park following their demolition.

3.3.15 A single round of ground gas monitoring undertaken did not detect the presence of ground gases at concentrations where precautionary gas protective measures would be required for proposed properties.

3.3.16 The Proposed Development will not include any likely sources of contamination to be introduced into the environment and, from the findings of the Geo-environmental Assessment, it is considered that there will be no significant effects with respect to ground conditions and contamination at the Site.

3.3.17 Therefore, an ES Chapter with respect to Ground Conditions and Contamination in agreement with RBC is not required. However, the potential exists for temporary contamination of the water environment during the construction phase of the Proposed Development and these potential impacts (and mitigation measures) are considered within **Volume 2, Chapter 10 Water Resources and Flood Risk.**

*Major Accidents and / or Natural Disasters*

3.3.18 Under Schedule 3 of the EIA Regulations, the risks of major accidents and natural disasters relevant to the Proposed Development needs to be considered. The Proposed Development would introduce residential properties into an area which currently supports similar land uses.

3.3.19 No structural, geomorphological, or geochemical features are recorded on or near the Site by BGS mapping. The Site is not in an area that could be affected by coal or metalliferous mining activity and there are no Health and Safety Executive (HSE) Control of Major Accident Hazards (COMAH) sites in close proximity to the Site. Therefore, the Proposed Development is not likely to produce an elevated risk of accidents or natural disasters.

3.3.20 A framework CEMP will be prepared for the construction phase, which will include mitigation measures.

3.3.21 The design of the Proposed Development will be in accordance with industry standards including drainage and building regulations to reduce the potential for accidents and natural disasters to impact on the Proposed Development. A Flood Risk Assessment (FRA) has also been prepared **(Volume 4, Appendix D1: Flood Risk Assessment)** which assesses the potential impacts and effects related to flood risk considering both surface water and flooding from Rivers and Sea's at the Proposed Development.

3.3.22 In consideration of the above, there are not likely to be significant effects from major accidents and natural disasters and in agreement with RBC this has been scoped out of this ES.

### *Population and Human Health*

3.3.23 Health is influenced by many factors, including age, gender, ethnicity, education, employment, income, social networks, air, water quality, contaminated land and access to social and public health services.

3.3.24 The Site is currently an operational golf course. Surrounding the Site are residential properties, schools and open green space. It is bound by the wider golf course to the north; Kidmore End Road, with dwellings on Chalgrove Way and beyond to the east; Emmer Green Primary School, Emmer Green Play Fields and a retirement home on Lyefield Court to the south; and dwellings along Eric Avenue and Highdown Hill Road to the west. It is not considered that the Proposed Development comprises uses or activities or is located within the vicinity of any activities or uses that would pose a significant risk to human health.

3.3.25 It is therefore likely that the human health implications of the Proposed Development would be as a result of issues which are already assessed and presented within this ES. This includes noise, air quality, water resources and access to local facilities (e.g. GP, school availability or open space). **Table 3.3** outlines where human health and population are addressed within the Application.

***Table 3.3: Location of Information on Population and Human Health within the ES***

| Application Document | Topic Area Addressed |
|---|---|
| Volume 2, Chapter 6: Socio economics | Access to local facilities e.g. GPs, school availability and open space. |
| Volume 2, Chapter 8: Air Quality | Effects on air quality and human health. |
| Volume 2, Chapter 9: Noise and Vibration | Effects of noise and vibration on human health |
| Volume 2, Chapter 10: Water Resources and Flood Risk | Potential for water pollution. |
| Volume 2, Chapter 13: Climate Change and Greenhouse Gas Emissions | Effects of climate change. |

3.3.26 There may be significant beneficial health effects resulting from the Proposed Development of high-quality residential properties and provision of a new medical centre. There will also be beneficial effects on the population due to the increase in employment during the construction and operational phases of the Proposed Development.

### *Waste and Recycling*

3.3.27 The Proposed Development will give rise to a small amount of demolition waste (associated with the demolition of the golf course club house on Site), construction waste (from excavation and wastage of construction materials) and operational waste.

3.3.28 In accordance with the principles of Waste Management Plan for England (2013) and the National Planning Policy for Waste (2014), a principal aim during construction will be to reduce the amount of waste which is generated and exported from the Site. This will include measures such as 'just in time deliveries', the secure storage of materials and prevention of stockpiling to minimise the potential for waste. This approach complies with managing waste towards the higher end of the Waste Hierarchy, where the intention is to first prevent, reuse, recycle and as a last resort, to dispose of waste off-site as necessary. All relevant construction contractors will be required to investigate opportunities to minimise and reduce waste generation in line with WRAP's 'Halving Waste to Landfill' initiative.

3.3.29 The requirement for Site Waste Management Plans was revoked on 1st December 2013, however it is considered best practice to produce a Construction Resource Management Plan (CRMP). The CRMP outlines the ways in which the Waste Hierarchy will be adhered to and waste will be managed during excavation and construction of the Proposed Development in order to avoid environmental impacts. The CRMP will be prepared during the post-planning phase, once the necessary details concerning excavation and construction are known (such as the detailed construction programme, details of appointed contractors and details of proposed construction methods).

3.3.30 **Volume 2, Chapter 5: The Proposed Development and Construction Overview** includes details regarding construction waste associated with the Proposed Development.

3.3.31 An Operational Waste Management Strategy will be developed to support the future reserved matters planning application. The Operational Waste Management Strategy will outline the relevant legislation and national (England) and district (RBC) waste policy and guidance and how compliance with these requirements will be achieved for the Proposed Development. Consultation will be held with the RBC during preparation of the Operational Waste Management Strategy.

3.3.32 Whilst the Proposed Development will result in an increase in waste arisings when compared to the baseline, in particular through the provision of residential units on the Site, it is considered that RBC will have provisions in place to manage this increase. Due to the residential and commercial land uses proposed, it is not anticipated that the Proposed Development will produce hazardous waste materials (such as chemicals, medical waste, animal by-products etc. Therefore, it is considered that the Proposed Development will not have a significant environmental effect on the RBC waste management infrastructure.

3.3.33 Given the above, as no significant effects relating to waste and recycling are likely as a result of waste arising from the Proposed Development, in agreement with RBC waste management has been scoped out of this ES.

*Wind Microclimate*

3.3.34 The Proposed Development comprises of low density housing and will not include tall buildings, structures or massing that could lead to wind microclimate effects upon homes either within the Proposed Development or in the surrounding area. On this basis it is considered that the Proposed Development would not give rise to any likely significant effects with respect to wind microclimate and therefore in line with the EIA Regulations and agreement with RBC it has been scoped out of this ES.

## 3.4 The EIA Regulations

3.4.1 The EIA Regulations require that an EIA be undertaken for the Proposed Development, and that an ES identifying impacts and associated mitigation measures must be provided to accompany the planning application.

3.4.2 For the purposes of the EIA Regulations, Regulation 18 (3) defines an environmental statement as:

*"…a statement which includes at least:*

*(a) a description of the proposed development comprising information on the site, design, size and other relevant features of the development;*

*(b) a description of the likely significant effects of the proposed development on the environment;*

*(c) a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*

*(d) a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;*

*(e) a non-technical summary of the information referred to in sub-paragraphs (a) to (d); and*

*(f) any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.*

3.4.3 Temple has been commissioned by the Applicant to prepare the EIA in line with the EIA Regulations and the other relevant EIA guidance to produce this ES which will be submitted with the Application.

3.4.4 The Applicant has provided the necessary information to enable preparation of this ES. The ES will ensure that sufficient information is provided to enable the Local Planning Authority (RBC) to make a decision about the Application with due regard to and in the knowledge of any likely significant environmental effects.

3.4.5 Once submitted, RBC are required to publicise the availability of the ES (and any related additional information) to potentially interested parties, such as statutory and non-statutory consultees and the public, so as to enable their opinions on the project and ES to be represented by the planning process.

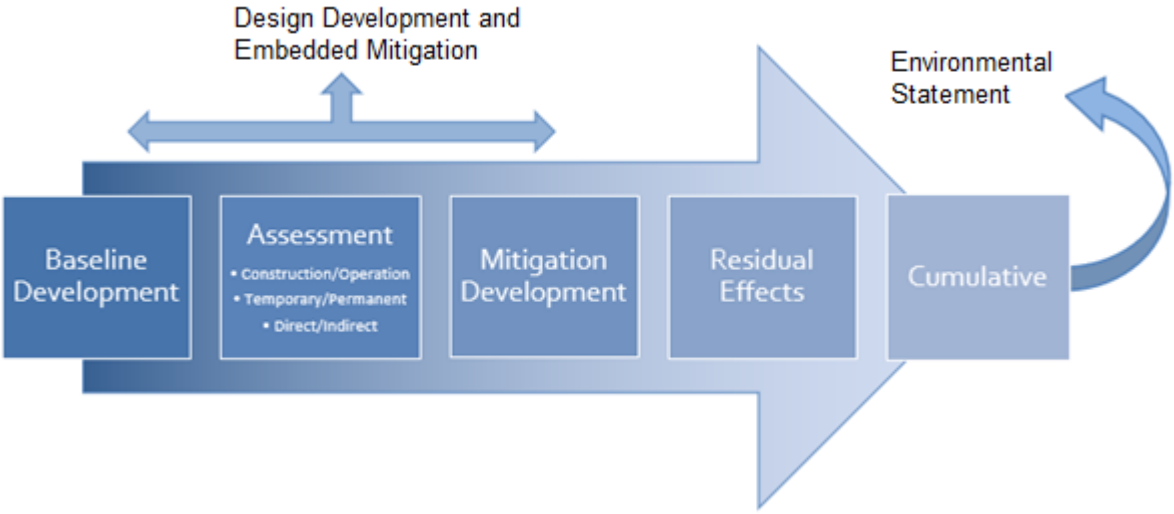
## 3.5 The Environmental Statement Approach

### *Approach to Technical Studies*

3.5.1 The approach taken to the EIA process is shown in **Figure 3.1**. The general approach to the assessment establishes the baseline for each topic. Receptors and resources are identified, and their sensitivity classified. The potential impacts of the Proposed Development on these receptors and resources are assessed for the construction and operational phases of the

Proposed Development, taking into account any embedded mitigation. Subsequently, additional mitigation measures are considered, as appropriate, allowing the likely significant residual and cumulative effects to be identified.

***Figure 3.1: EIA Assessment Process***




3.5.2 In order to inform the design process, the EIA studies commenced at an early stage in the development and design process of the Proposed Development. The studies have been undertaken in accordance with current best practice. Specific guidance used is referenced within each of the respective technical chapters.

3.5.3 The assessments involved consultation with statutory and non-statutory bodies, desk-based research, site inspections and surveys, impact and effect prediction and identification of mitigation measures.

3.5.4 The assessment and conclusions of the ES are based on the Proposed Development applied for and as described in **Volume 2, Chapter 5: The Proposed Development and Construction Overview**.

### *Baseline Development*

3.5.5 The ES primarily describes environmental impacts in terms of the extent of likely change to the baseline environment. Unless stated otherwise, the baseline represents the current environmental conditions at the Site.

3.5.6 For most of the technical ES chapters, this means the baseline has been taken as the existing conditions (2019/2020) at the Site. However, in some circumstances it may be necessary to apply a 'future baseline' to establish what the baseline conditions at the Site would likely be in absence of the development or a more historic one when based on population survey data. Where this has been undertaken this has been explained within the relevant technical ES chapters.

### *Spatial Scope*

3.5.7 The redline boundary of the Proposed Development is shown at the end of this chapter in **Figure 3.3**. Assessment study areas vary by topic areas, according to the baseline information and the nature of likely impacts. These are outlined within each technical chapter.

3.5.8 The Proposed Development is being applied for in outline with all matters reserved other than access. Therefore, an illustrative scheme has been developed to demonstrate a scenario in which the Proposed Development could be delivered and is utilised for assessment purposes where required in this ES to present a reasonable worst-case scenario. Details of the illustrative scheme used for assessment purposes is described in **Chapter 5: The Proposed Development and Construction Overview.**

3.5.9 There are a number of technical aspects of the EIA where scale and layout are of particular relevance for the purposes of the assessment of environmental impacts. These are as follows: Air Quality, Noise, Socio Economics, Traffic and Transport, Landscape and Visual Impact, and Built Heritage, when considering these topic areas, the illustrative scheme has been used for the basis of the assessment.

### *Temporal Scope*

3.5.10 The ES assesses the environmental impacts of the Proposed Development during both construction and operation. The assessment compares the current and future baseline conditions (as appropriate) to those conditions expected with the construction and operation of the Proposed Development. The assessment assumes that construction starts in May 2022, (subject to reserved matters approvals and securing planning consent), and will take approximately 57 months, starting in May 2022 and completing in January 2027.

3.5.11 The assessment considers the totality of the Proposed Development from construction through to operation, using the following assessment scenarios:

- existing baseline;
- future baseline (without Proposed Development);
- assessment of peak construction effects; and
- assessment of operational effects (all construction complete, the Proposed Development fully occupied and operational).

### *Structure of Technical Chapters*

3.5.12 Each technical chapter of the ES **(Volume 2, Chapters 6 to 13)** has been set out broadly in line with structure outlined in **Table 3.4**.

***Table 3.4: Structure of the Technical Chapters***

| Technical Chapter Structure | |
|---|---|
| Scope of Assessment | Each of the technical chapters begins with an introduction to the assessment, explaining its purpose in the context of the Proposed Development and ES, including any key topics / aspects which have been scoped in or out of the assessment. |
| Legislation, Policy and Guidance | This section includes a summary of national, regional and local policies of relevance to the environmental discipline and assessment. Where applicable, relevant legislation has also been summarised. |
| Assessment Methodology and Significance Criteria | This section provides an explanation of methods used in undertaking the study with reference to published standards, guidelines and best practice. Limitations or difficulties encountered are discussed, if any. It also discusses the application of |

| Technical Chapter Structure | |
|---|---|
| | sensitivity, magnitude and significance criteria within the assessments. |
| Baseline Conditions | This section describes and evaluates the baseline environmental conditions i.e. the current situation and anticipated changes over time in the absence of the Proposed Development. This is a critical part of the EIA process as it provides a measure against which the likely significant effects on the environment can be assessed. |
| Assessment of Effects | This section identifies the likely significant effects on the environment resulting from the Proposed Development during construction and operational phases, taking into account the embedded mitigation, as outlined in the topic chapters. A description of the likely effects of the Proposed Development and an assessment of their predicted significance are also provided. |
| Mitigation Measures | One of the main aims of the EIA process is to develop suitable mitigation measures to avoid, reduce or compensate for all significant adverse effects of a project. These measures relate to all phases. This section describes the additional measures which would be implemented to mitigate against potentially significant adverse effects. Where possible, enhancement measures have been proposed. |
| Residual Effects | The residual effects, i.e. the remaining effects of the Proposed Development assuming implementation of the proposed embedded and additional mitigation measures, have been estimated and presented. |
| Cumulative Effects | This section summarises the cumulative effects of the Proposed Development in combination with identified schemes. |
| Summary | Each technical chapter concludes with a brief summary outlining the potential residual effects for the construction phase (short / medium) and operation (long-term) phase of the Proposed Development along with any cumulative effects. |

3.5.13 The LVIA follows the same structure as the technical chapters listed above but is provided as a separate volume in **ES Volume 3: Landscape and Visual Impact Assessment.**

### *Assessment of Effects*

3.5.14 The assessment of significance of effects has been undertaken using appropriate national and international quality standards. Where no such standards exist, the judgements that underpin the attribution of significance are described. The guidelines, methods and techniques used in the process of determining significance of effects are contained within each of the technical chapters presented.

3.5.15 The ES considers the following periods to support the assessment of likely significant effects:

- existing baseline (2019/2020);
- construction phase 2022 to 2027; and
- operational (2027).

3.5.16 The ES identifies the likely significant effects of construction of the Proposed Development against the 2019/20 baseline. The assessment of operational effects is undertaken against the future baseline in 2027 (the ‘without development’/’do nothing’ scenario, see **Chapter 5:**

**The Proposed Development and Construction Overview**), unless otherwise stated in the individual technical chapters.

3.5.17 Certain topics have undertaken an assessment of peak construction effects to ensure a reasonable worst-case scenario is considered and that any conclusions are sufficiently robust to accommodate potential changes in the construction methodology. Where a worst-case scenario has been assessed, this has been set out in the assumptions and limitations section of the technical chapters **(Chapters 6 to 13)**.

3.5.18 The construction of the Proposed Development is expected to take place in one continuous phase, as described in **Chapter 5: The Proposed Development and Construction Overview**. This chapter provides further detail on the proposed construction methodology and outlines the key construction activities that are likely to generate environmental effects.

### *Defining Significance*

3.5.19 The changes generated by a development project may result in outcomes which are considered to be positive or adverse, and in some cases may be considered to be neutral. Examples would include: new scheme-related noise or air pollution, changes in lighting levels, loss of habitat or top soil, new planting and habitat re-provision, changes to the townscape, loss of surface permeability, waste production, etc.

3.5.20 Examples of receptors / resources that might be affected by such changes include people (residents, passers-by, workers etc.), designated sites (Sites of Specific Scientific Interest, Conservation Areas, groundwater protection zones etc.) and non-designated environmental resources of value.

3.5.21 Effects come about as the result of imposing changes on receptors / resources. The physical extent of effects (in terms of the geographical area affects, or the size of the human population affected, or the spatial extent of any protected species or habitats affected) should all be taken into account when assessing the importance of likely changes along with duration, frequency and reversibility.

3.5.22 Step 1 of the process of assessing the significance of an effect (i.e. the imposition of a change onto a receptor / resource) is to identify all relevant combinations of change and receptor / resource which may arise as a consequence of implementing the Proposed Development. This is most easily and clearly done by dividing the assessment by topic area and then further sub-dividing within topic areas the source and type of change (distinguishing between direct, indirect and secondary) and the receptor(s) affected by this.

3.5.23 Step 2 is to use professional judgement and/or appropriate best practice guidance (and taking into account specific statutory or non-statutory values and objectives as may be applicable, for example, in relation to air quality or water quality threshold values) to identify:

- the sensitivity of the receptors / resources concerned;
- the strength (and the geographical scale at which the change is identified), duration and frequency of the likely changes; and
- to score these components of the effect under consideration.

3.5.24 The duration of an effect can be assessed to be:

- temporary (e.g. demolition and construction phase); and

- permanent (e.g. once the Proposed Development is completed and operational).

3.5.25 Where appropriate and greater precision is helpful the following terms can also be used:

- short term (<5 years);
- medium term (5-10 years); and
- long term (>10 years).

3.5.26 Some changes will affect different receptors / resources to different degrees, and some receptors / resources may be affected by a range of potential changes (to which they may well exhibit different sensitivities). Significance must therefore be judged in the context of a specific combination of change and receptor / resource.

3.5.27 Generic criteria for determining the value / sensitivity of a receptor or resource based on its relative importance and its ability to accommodate change and / or recover from impacts is provided in **Table 3.5** below.

***Table 3.5: Methodology for Determining Value / Sensitivity***

| Sensitivity | Examples of Receptor / Resource |
|---|---|
| High | The receptor/resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance. |
| Moderate | The receptor/resource has moderate capacity to absorb change without significantly altering its present character, or is of high importance. |
| Low | The receptor/resource is tolerant of change without detriment to its character, is of low or local importance. |

3.5.28 Generic criteria for determining the magnitude of an impact based on the strength of change the geographical scale at which it is identified, the duration, frequency and reversibility of the change is provided in **Table 3.6** below.

***Table 3.6: Methodology for Determining Impact Magnitude***

| Magnitude of Impact | Criteria for Assessing Impact |
|---|---|
| Major | Total loss or major/substantial alteration to key elements/features of the baseline (pre-development) conditions such that the post-development character/composition/attributes will be fundamentally changed. |
| Moderate | Loss or alteration to one or more key elements/features of the baseline conditions such that post-development character/composition/attributes of the baseline will be materially changed. |
| Minor | A minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible/detectable but not material. The underlying character/composition/attributes of the baseline condition will be similar to the pre-development circumstances/situation. |
| Negligible | Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation. |

3.5.29 Step 3 of the process of assessing the significance of an effect is to describe and document the outcome of Steps 1 and 2, and to judge the significance of each potential effect determined by the interaction of value / sensitivity and magnitude, whereby the effects can be beneficial, adverse or neutral.

3.5.30 A generic Effect Significance Matrix is set out in **Table 3.7** to assist in this judgement of significance, whereby it is generally considered that any effect greater than "minor" is considered a significant effect.

***Table 3.7: Effect Significance Matrix***

| Magnitude | Sensitivity | | |
|---|---|---|---|
| | **High** | **Moderate** | **Low** |
| **Major** | Major Adverse/Beneficial | Major - Moderate Adverse/Beneficial | Moderate - Minor Adverse/Beneficial |
| **Moderate** | Major - Moderate Adverse/Beneficial | Moderate – Minor Adverse/Beneficial | Minor Adverse/Beneficial |
| **Minor** | Moderate - Minor Adverse/Beneficial | Minor Adverse/Beneficial | Minor - Negligible |
| **Negligible** | Negligible | Negligible | Negligible |

3.5.31 However, in all cases the author should exercise professional judgement and take account of all relevant topic specific standards, guidance and threshold in assessing the significance of an effect.

3.5.32 Step 4 is to records those effects which are to be treated as significant, and to identify those effects which, while not in the end deemed to be significant, may well need to be considered further in the context of cumulative impacts.

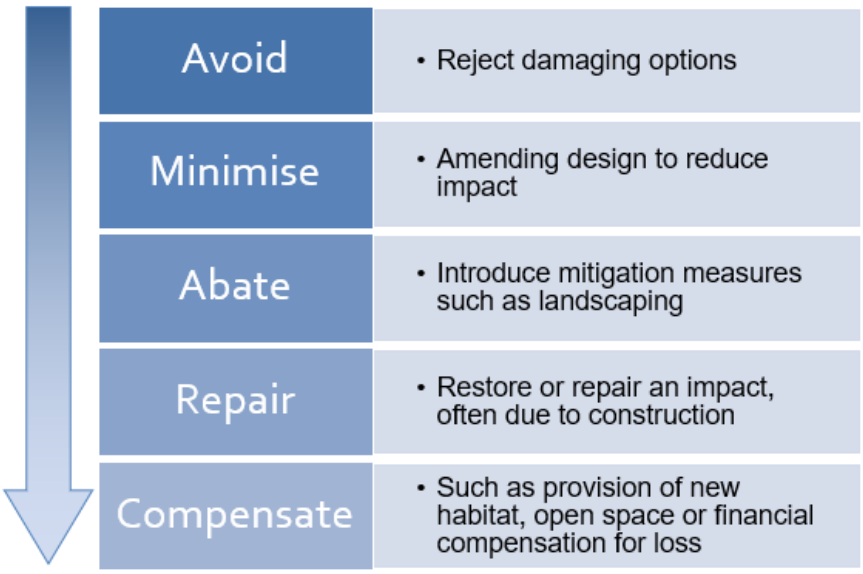
3.5.33 The matrix presented above in **Table 3.7** is widely accepted and used within the EIA industry. The magnitude and significance criteria have been provided as a guide for technical specialists to assess effect significance. Generally, a significant effect in EIA terms is one which is moderate beneficial / adverse or above. An effect which is negligible or minor beneficial / adverse is considered to be not significant in EIA terms.

3.5.34 Where discipline specific methodology has been applied that differs from the generic criteria above, this has been clearly explained within the given chapter under the heading of Assessment Methodology and Significance Criteria.

### *Mitigation Measures*

3.5.35 Any potentially significant adverse effects have been considered for mitigation at the design stage and, where practicable, specific measures have been put forward. Measures have been considered based on the hierarchy of mitigation set out in **Figure 3.2**.

***Figure 3.2: Mitigation Hierarchy***




3.5.36 Where the effectiveness of the mitigation proposed has been considered uncertain, or where it depends upon assumptions of operating procedures, data and / or professional judgement has been introduced to support these assumptions.

3.5.37 Mitigation to be implemented during the construction and operational phases will be secured through planning conditions and obligations.

3.5.38 Two main types of potential mitigation measures have been assessed:

- Embedded Mitigation – embedded mitigation includes design / standard control measures, which have been taken into account in an initial assessment of the effects. The Proposed Development has been developed in such a way that the reduction and, wherever possible, elimination of any associated significant adverse environmental effects is integral to the overall design philosophy. The embedded mitigation measures will be captured and implemented through the provisions of the CoCP (to be provided post submission and prior to construction by the principal contractor) and are also presented within the technical chapters (**Volume 2, Chapters 6 to 13**).

- Additional Mitigation – further additional mitigation measures may be introduced, where appropriate, and are taken into account in the assessment of residual effects. Where it has not been possible to avoid adverse significant environmental effects, such additional mitigation and monitoring measures are discussed as applicable in the relevant technical chapter.

### *Residual Effects*

3.5.39 The likely residual effects on the environment, assuming the successful implementation of the mitigation measures proposed, are identified within each assessment.

3.5.40 The residual effects have been assessed using the same system as described above taking account of any assessment mitigation proposals. Residual effects have then been assessed in terms of significance. Generally, based on the described classification and professional judgement, effects considered to be moderate or major have been deemed significant, and those considered minor, or negligible, have been deemed not significant.

### *Cumulative Effects*

3.5.41 The EIA Regulations specify that the description of the likely significant effects within an ES should include "*the direct effects and any indirect, secondary, cumulative…effects*".

3.5.42 There are two types of cumulative effects: Type 1, intra-project effects which are the combined effects of individual topic impacts on a particular sensitive receptor, and Type 2, inter-project effects which are the combined effects of several development schemes (in conjunction with the Proposed Development) which may, on an individual basis be insignificant but, cumulatively, have a significant effect.

3.5.43 The ES has given consideration to cumulative effects for committed developments located within 1 km radius from the boundary of the Site. Committed schemes slightly beyond 1 km from the Site have also been considered due to the size of these schemes. Using professional judgement, it is considered that this spatial extent represents a suitable area over which any potential cumulative effects may occur. Any variations from this 1 km radius boundary within individual topic assessments are set out in the respective technical chapters. The cumulative schemes considered include:

- approved but uncompleted projects (i.e. unimplemented or under construction); and
- projects for which an application has been made and which are under consideration by the consenting authorities.

3.5.44 The EIA Regulations only require consideration of other existing and or approved projects, however in order for the list to remain up to date at the time of submission we have considered submitted applications up to the time of submission of the Application.

3.5.45 **Table 3.8** sets out the committed schemes for consideration in the cumulative effects assessment. These are also shown spatially on **Figure 3.4** at the end of this chapter.

***Table 3.8: Schemes for Consideration in the Cumulative Effects Assessment***

| No | Development & Planning Application Reference | Summary of Development | Application Validated | Planning Status |
|---|---|---|---|---|
| 1 | SSE, Vastern Road.<br>Ref: 200188 | Land at Vastern Road, Reading, involving demolition of a number of structures on the site and the erection of a new residential scheme (up to 210 units), with a max height of 11 storeys (up to 36m above ground level) including a new north south pedestrian link, connecting Christchurch Bridge to Vastern Road towards the station as well as drainage infrastructure and landscaping. | 09/05/2019 | Appeal |
| 2 | Broad Street Mall, Broad Street, Reading, RG1 7QG.<br>Ref: 182137 | Construction of three residential buildings (Use Class C3) ranging in height from 5 to 22 storeys above Broad Street Mall (Site E to provide up to 50 units, Site B to provide up to 134 Units and Site A to provide up to 164 units) and provision of a podium level amenity area, Construction of a 16 storey building on South Court comprising ground and first floor retail(Use Class | 14/02/2019 | Submitted |

| No | Development & Planning Application Reference | Summary of Development | Application Validated | Planning Status |
|---|---|---|---|---|
| | | A1/A2/A3) and residential over upper floors (Use Class C3, Site C to provide up to 98 units), Creation of ground floor retail units (Use Class A1/A3/A4) fronting Dusseldorf Wayand ground floor retail (Use Class A1/A2/A3) | | |
| 3. | 199-203 Henley Road and land to the Rear of 205-207 Henley Road, Caversham, Reading, RG4 6LJ.<br>Ref: 190835 | Demolition of 199-203 Henley Road and erection of part four, part three and part two storey 82 unit residential care home building (C2 use class) with associated external structures, access from Henley Road, car parking and landscaping. | 19/12/2019 | Granted |
| 4. | St Martins Precinct, Church Street, Caversham<br>Ref: 140997 | Redevelopment for retail restaurant, leisure and residential (40 dwellings) | 20/06/2014 | Granted |

3.5.46 The scheme below was highlighted in the RBC Scoping Opinion. Its reason for exclusion from the ES is outlined in **Table 3.9.**

***Table 3.9 Schemes Excluded from Consideration in the ES***

| Planning Application Reference | Summary of Development | Planning Status | Reason for Non-Inclusion |
|---|---|---|---|
| 180418 | Outline application for the demolition of nos 199-203 Henley Road and erection of 42 dwellings at 199-203 Henley Road and to the rear of 205-207 Henley Road with associated access from Henley Road (considering access, appearance, layout and scale). | Permitted | This planning application is related to the same site as the above permitted application for a senior care home. It is considered that the above application is likely to supersede this application. |

### *Interactive Effects*

3.5.47 Interactive effects are also considered in the ES. Interactive effects arise where effects from one environmental element bring about changes in another environmental element. These effects are also reviewed and form an integral part of the technical chapters.

## 3.6 Assumptions and Limitations

3.6.1 The principal assumptions that have been made and any limitations that have been identified in preparing the ES are set out in each technical chapter. General assumptions include the following:

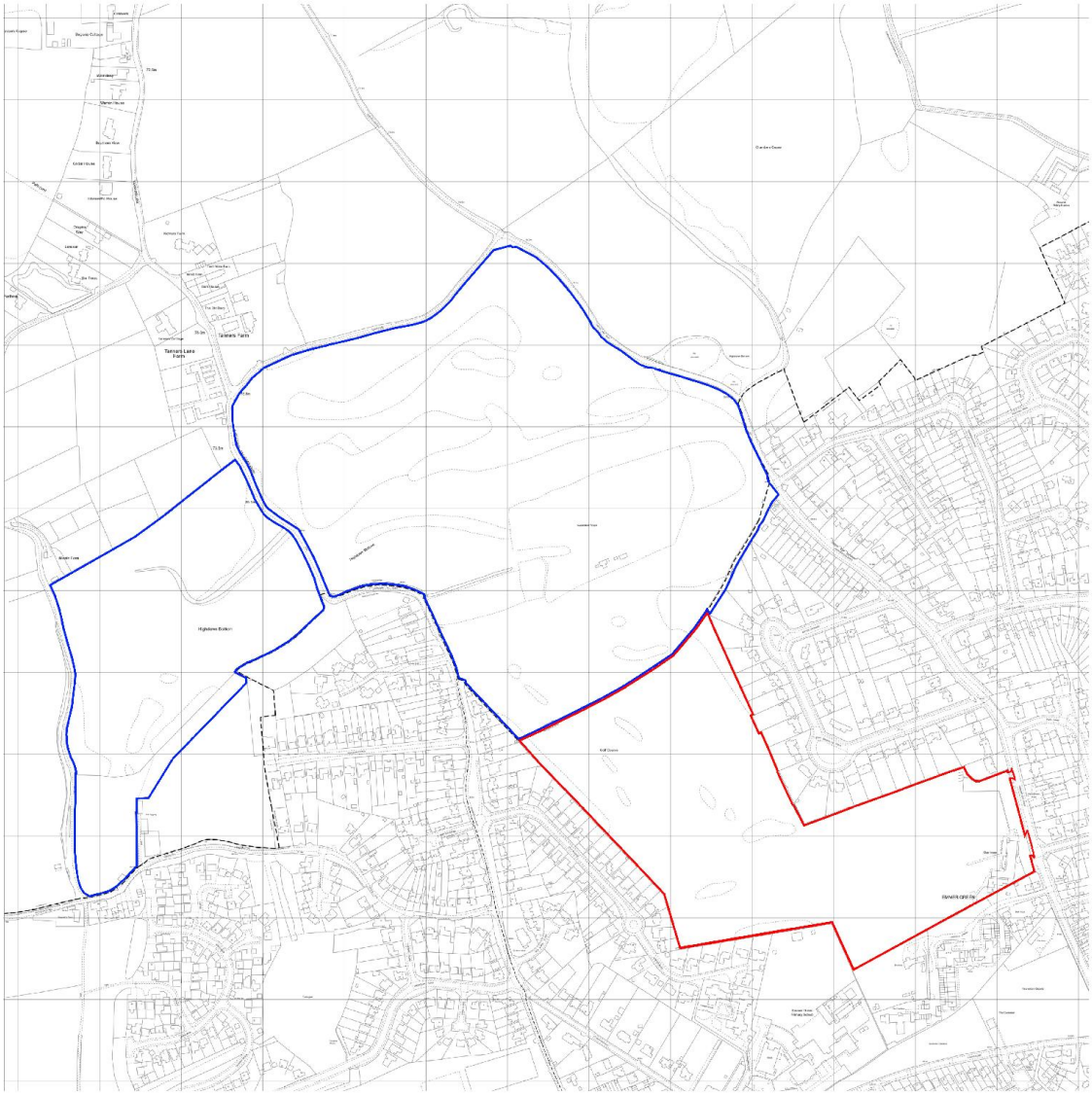
- assessments primarily assume the baseline conditions in 2019/2020 when the majority of the baseline surveys, including noise, air quality and ecology, were undertaken;
- current surrounding land uses do not change, with the exception of the cumulative developments identified;
- assessments are based on published sources of information and primary data collection. Sources are provided as necessary;
- assessments are based on the description of the Proposed Development and the anticipated construction methodology and programme summarised in Chapter 5;
- the design, construction and operation phases of the Proposed Development will satisfy minimum environmental standards, consistent with contemporary legislation, practice and knowledge;
- planning permission, when granted, will contain conditions that will control disturbance during construction and operation, and be sufficient to limit the development to that which has been assessed in the EIA;
- any future development of the Site, beyond the Proposed Development to which this ES relates, will be determined through separate planning applications and is not assessed within this ES; and
- the construction information on which the assessments are derived, are based on the best information available at the time of writing and represent a reasonable scenario of how the Proposed Development may be implemented.

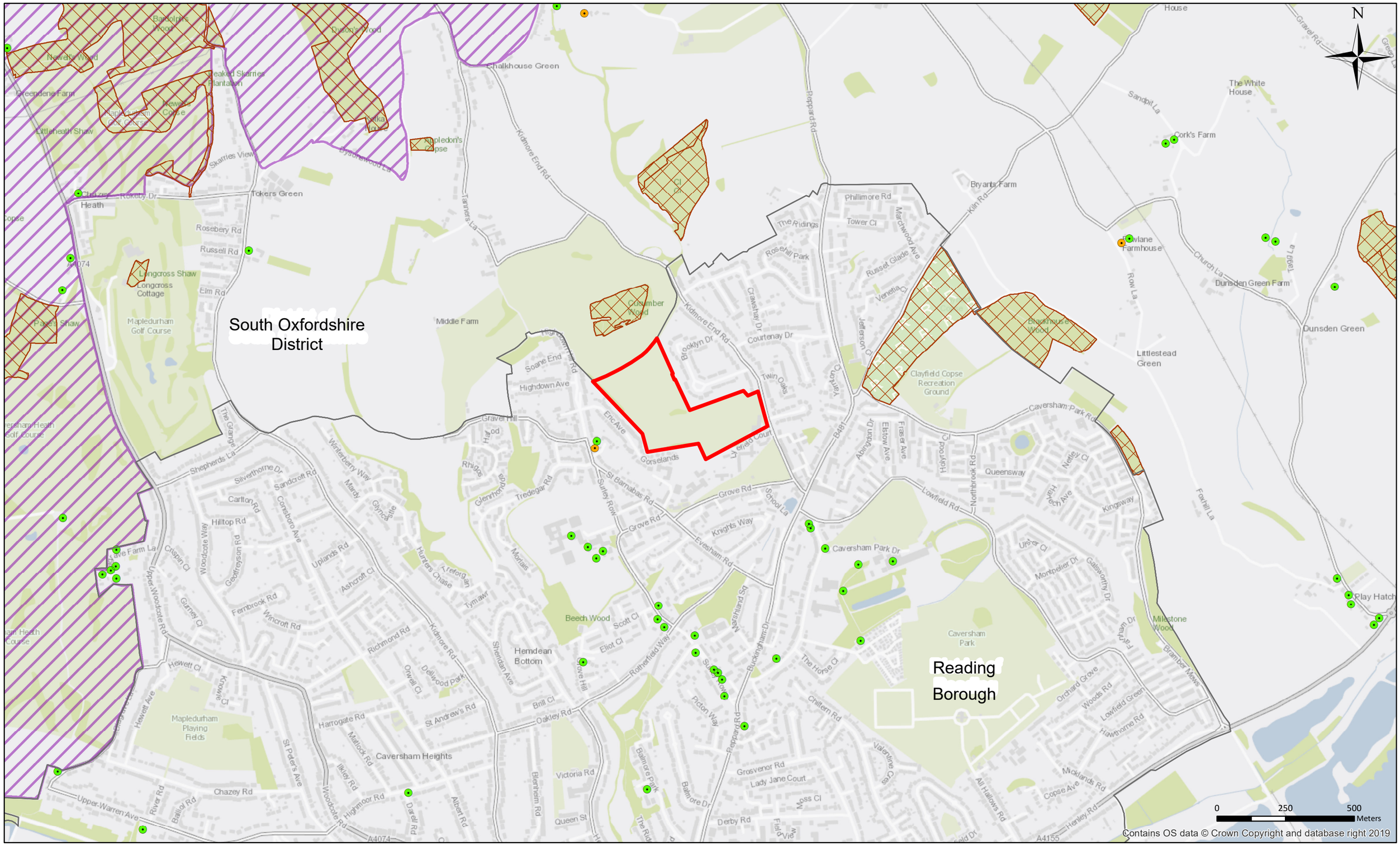
## 3.7 Objectivity

3.7.1 The technical studies undertaken within the ES have been progressed in a transparent, impartial and unbiased way with equal weight attached, as appropriate, to beneficial and adverse effects. Where possible, this has been based upon quantitative and accepted criteria together with the use of value judgements and expert interpretations.

3.7.2 The assessment has been explicit in recognising areas of limitation within the ES and any difficulties that have been encountered, including assumptions upon which the assessments are based. Where appropriate, the assessment of significance has been given confidence levels.

### *Figure 3.3: Redline Boundary*






Map Reference: T4328-0002 | User Name: ronan.corrigan | Date: 17/03/2020

Project: Reading Golf course Development

Client: Fairfax Reading Ltd

# Reading Golf course - Site Constraints

## Legend

- Site Boundary
- District Councils
- Ancient Woodland Inventory
- Area of Outstanding Natural Beauty
- Local Nature Reserves

Listed buildings

- Grade II*
- Grade II

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Temple Group Ltd., The Woolyard, 52 Bermondsey Street, London, SE1 3UD
Tel. 020 7394 3700 Fax. 020 7394 7871