

**Environmental Impact Assessment (EIA)**  
**Scoping Report**  
Land East of Warwick Road, Banbury

November 2022

**Turley**

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## Client

Vistry Homes Limited

## Our reference

BOVS3002

2<sup>nd</sup> November 2022

## **List of Figures in Appendix 1**

Figure 1: Site Boundary Plan

Figure 2: Viewpoint Location Plan

# 1. Introduction

## Request for EIA Scoping Opinion

- 1.1 Vistry Homes Limited (the 'Applicant') is working with a project team to design and deliver an outline planning application (the 'Application') for up to 170 residential homes (Use Class C3), new play facilities, public open space, landscaping and vehicular access from the B4100 Warwick Road (the 'Proposed Scheme') on Land East of Warwick Road, Banbury (the 'Site').
- 1.2 The Site comprises two cultivated arable fields (Parcels A and B), divided by Gullicote Lane with Parcel A to the west and Parcel B to the east, which together cover an area of 12.63 hectares (ha) in size and are located within Cherwell District Council's (CDC's) administrative area. The Site boundary is shown in **Figure 1**. At this stage, the Site is considered to be the maximum extent of all temporary and permanent works required as part of the Proposed Scheme.
- 1.3 The Applicant has instructed Turley to lead, manage and control the EIA process. The project team have developed a description of the Proposed Scheme, which is provided in **Chapter 4**. Whilst the Proposed Scheme continues to be refined and the development principles agreed, the description in **Chapter 4** aims to provide factual and sufficient information to inform the EIA Scoping process and the preparation of this Report.

## Next Steps: Receipt of CDC Scoping Opinion

- 1.4 In accordance with Regulation 15 of the Town and Country Planning (EIA) Regulations, 2017 (as amended)<sup>1</sup> (the 'EIA Regulations'), Turley request a Scoping Opinion from CDC, informed by this Report.
- 1.5 Based on your receipt of this Report and in accordance with Regulation 15, it is anticipated that the statutory timescales will be met and that Turley will be in receipt of a Scoping Opinion no later than five weeks from the date of receipt of this request.

## Structure of the Report

- 1.6 The Structure of this Report is outlined in **Table 1.1**.

**Table 1.1: Structure of the Report**

Chapter no.	Title	Description
1	Introduction	Outlines the context in which Turley request a Scoping Opinion; provides an overview of the structure of the Report; outlines our understanding of the requirements for EIA; and stakeholder engagement proposed.

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<sup>1</sup> The Town and Country Planning (EIA) Regulations 2017 No. 571 (as amended).

Chapter no.	Title	Description
2	Approach to EIA	Outlines the objectives and strategy for the EIA to ensure consistency and clarity across the process. Also provides an indication of the methodology and skills adopted within the EIA, the anticipated format of the ES as well as the interaction with other documentation to be submitted in support of the Application.
3	Site Context	Provides a description of the Site and the surrounding environment, which represents the baseline conditions.
4	High Level Development Specification	Outlines the Proposed Scheme as currently understood by the project team. It is this description upon which this Report is based.
5	Environmental Topics which are Not Significant	Outlines the environmental topics for which there are unlikely to be significant effects and therefore will not be considered further as part of the EIA or be reported within the ES.
6 and 7	Likely Significant Environmental Topics	Presents a number of likely significant effects across a range of environmental topics. A separate Chapter is provided for each topic. The Chapters also provide detail on particular effects within each topic which are not considered to be significant and will not be considered further as part of the EIA or be reported in the ES.
8	Methodology for Assessment of Cumulative Effects	Outlines the proposed methodology for the assessment of cumulative effects, comprising both effect interactions and in-combination effects.
9	Summary	Provides a tabular summary of the effects which are not significant and likely significant effects identified at this stage of the EIA process.

## Definition of EIA

1.7 The term 'EIA' has the meaning given by Regulation 4 of the EIA Regulations, as '*a process consisting of -*

*(a) the preparation of an environmental statement;*

*(b) any consultation, public and notification required by, or by virtue of, these Regulations or any other enactment in respect of EIA development; and*

*(c) the steps required under regulation 26 [consideration of whether planning permission or subsequent consent should be granted]'*.

1.8 Under Regulation 4, Paragraph 2 an 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, with particular attention to species and habitats protected under Directive 92/43/EEC(1) and Directive 2009/147/EC(2);*

*(c) land, soil, water, air and climate;*

*(d) material assets, cultural heritage and the landscape; and*

*(e) the interaction between the factors referred to in sub-paragraphs (a) to (d)'.*

1.9 EIA is a procedure that must be followed for certain types of project before they can be given 'development consent'. The procedure is a means of drawing together, in a systematic way, an assessment of a project's likely significant environmental effects. This helps to ensure that the importance of the predicted effects and the scope for reducing or mitigating them are properly understood by the public and the relevant local planning authority (in this case CDC) before it makes its decision.

1.10 The aim of EIA, as defined by national Planning Practice Guidance (PPG), is to *'protect the environment by ensuring that a local planning authority when deciding to grant planning permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision making process.... The aim... is also to ensure that the public are given early and effective opportunities to participate in the decision making procedures<sup>2</sup>.*

### **Requirement for EIA**

1.11 The Proposed Scheme falls within the remit of the EIA Regulations as it exceeds the criteria set out within Schedule 2 Paragraph 10(b) *'Infrastructure projects – Urban development projects'* in that the Proposed Scheme includes more than 150 residential dwellings and the total site area exceeds 5ha.

1.12 The exceedance of the Schedule 2 criteria does not automatically determine the requirements for EIA, but requires a subsequent stage to determine likely significant environmental effects.

1.13 At this stage, a number of likely significant environmental effects have been identified. Therefore, the Application will be supported by an EIA, the outputs of which will be

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<sup>2</sup>Ministry of Housing, Communities and Local Government (MCLG) (now the Department for Levelling Up, Housing and Communities) (2020) PPG Environmental Impact Assessment. Available at: <https://www.gov.uk/guidance/environmental-impact-assessment> [Accessed 17/08/2022].

reported in an ES. The EIA is being used as a tool to identify environmental effects and where possible avoid, reduce, or offset them as part of the design process (see further details in **Chapter 2**).

### **Stakeholder Engagement**

1.14 Stakeholder engagement is an important part of the EIA process. It is the responsibility of CDC to undertake the appropriate level of consultation, including the identification of relevant and applicable statutory and non-statutory consultees, required to inform their Scoping Opinion.

1.15 It is anticipated that CDC will consult, as part of the preparation of their Scoping Opinion, with the following:

- CDC, internal services including Environmental Health, Arboriculture and Development Management;
- Oxfordshire County Council (OCC), including Highways and Transport, Lead Local Flood Authority, Historic Environment Team, Public Rights of Way Team and Public Health;
- Highways England;
- Historic England;
- Environment Agency;
- Natural England;
- Health and Safety Executive (HSE); and
- Thames Water.

1.16 In advance of preparing the Report, consultation with a number of the above consultees has already been undertaken / is being undertaken, to inform specifics of the design of the Proposed Scheme and to ensure early engagement to ascertain their views on likely significant effects, baseline data collection and appropriate assessment methodologies. Full details of consultation will be provided within the ES.

## 2. Approach to EIA

### Overview

- 2.1 This section outlines the objectives of the Report and regulatory compliance; how alternatives will be considered; iterative scoping; the baseline scenario and data collection; how mitigation will be defined and controlled; the information which will inform the ES; interaction with other documents to be submitted with the Application; and provides assurance on competent expertise.
- 2.2 The approach to the consideration of cumulative effects is set out in **Chapter 8**.

### Objectives and Regulatory Compliance

- 2.3 This Report supports a formal request for a Scoping Opinion from CDC as to the scope and methodology for assessment to be adopted in the EIA and reported in the ES. It aims to ensure that there is a clear and agreed scope for the EIA, including all of the relevant baseline studies that will be required to ensure a robust assessment of likely significant effects arising from the Proposed Scheme.
- 2.4 The Scoping Opinion is sought on the technical breadth of the environmental topics to be subject to detailed further assessment with the EIA and also the specific effects within each of the topic areas (as set out in **Chapters 6 and 7**).
- 2.5 The Institute of Environmental Management and Assessment (IEMA) has issued guidance on the interaction of design and EIA as part of 'Shaping Quality Development'<sup>3</sup> and 'Delivering Quality Development'<sup>4</sup>. The principles of these documents have been adopted for the EIA.
- 2.6 The EIA process will demonstrate how technical surveys, desk studies and design advice have influenced the design and the description of the Proposed Scheme upon which the EIA will be based.
- 2.7 By following this process, and where possible, the EIA will demonstrate the resolution and minimisation of environmental effects during design. This should ensure that the ES focuses only on likely significant environmental effects and complies with the need to provide '*a description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment*'<sup>5</sup>.
- 2.8 In accordance with Regulation 15, Paragraph 2 of the EIA Regulations this Report contains the following:
- A plan sufficient to identify the land (**Figure 1**);

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<sup>3</sup> IEMA (2015) EIA Guide to: Shaping Quality Development.

<sup>4</sup> IEMA (2016) EIA Guide to: Delivering Quality Development.

<sup>5</sup> As required under Regulation 18 Paragraph 3 (c) and Schedule 4, Paragraph 7 of the EIA Regulations.



- A description of the Proposed Scheme, including its location and nature (Chapter 3); purpose and technical capacity (**Chapter 4**). This includes an overview of the construction activities, development principles and timescales;
- An explanation of the likely significant effects of the Proposed Scheme on the environment (**Chapter 6 and 7**); and
- Such other information or representations as the person making the request may wish to provide or make.

## Consideration of Alternatives

2.9 Schedule 4, Paragraph 2 of the EIA Regulations states that an ES should include:

*‘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’.*

2.10 The PPG indicates that the EIA Regulations do not require the consideration of alternatives rather than where alternatives have been studied, the ES should report these alternatives in line with Schedule 4, Paragraph 2.

2.11 The EIA Regulations and PPG do not provide a specific methodology for the assessment of alternatives or criteria to be used to inform the assessment of reasonable alternatives.

2.12 The methodology to be adopted for the EIA is based on professional experience from similar projects and an understanding of the Proposed Scheme and its characteristics, as well as a focus on the delivery of a proportionate assessment in line with PPG recommendations. This will involve consideration of ‘factors<sup>6</sup>’ that constitute alternatives. Where further assessment of the ‘factors’ is considered appropriate and applicable, this will include a comparison of environmental effects.

## Iterative Approach to Scoping

2.13 Whilst this Report seeks to establish the overall framework for the EIA in relation to the environmental topics and associated likely significant effects that will be subject to detailed assessment, iterative re-scoping will continue as the design and strategy is refined, plans and principles are developed and additional technical survey / analysis work informs the Proposed Scheme. This iterative ‘re-scoping’ process will continue up until the point when the assessments within the ES are in their first draft.

2.14 Any deviation between the scope of effects considered within this Report and the ES will be clearly communicated in the ES. This is in accordance with Paragraph 038 of the PPG which states that: ‘...where it becomes evident during the assessment process...that a particular environmental factor is absent or unlikely to be significantly

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<sup>6</sup> These are likely to consider alternative designs / layouts and a ‘do nothing’ scenario.

*affected by a proposed development, there should be no need for further assessment of that factor even though it was identified in the scoping process...’.*

### **Study Boundary for Data Collection**

- 2.15 The Site boundary upon which baseline data has been and will continue to be collected is defined in **Figure 1**. As noted in **Chapter 1**, the Site boundary is not necessarily the boundary upon which the EIA and the Application will be based, rather it represents the maximum extent of all temporary and permanent works for the Proposed Scheme identified at this stage.
- 2.16 Where required, technical specific study areas (informed by relevant best practice and guidance) will be based upon the Site boundary (i.e. radius of searches will be from the Site boundary).
- 2.17 The baseline works that have been completed / will be undertaken are noted, where relevant, in **Chapters 6 and 7**.

### **Baseline Scenario for Use in the EIA**

- 2.18 Likely significant environmental effects as a result of the Proposed Scheme will be described in the ES in relation to the deviation from the current baseline environment within the EIA/Application boundary and/or relevant technical study areas<sup>7</sup>. The current baseline environment will comprise the existing characteristics and conditions, based upon studies/surveys undertaken and information available at the time of the assessment.
- 2.19 The data used to inform the baseline environment for the purpose of the EIA will vary dependent upon the timing of the survey/study or the date when data sources are accessed. It is anticipated that the baseline conditions will largely be based upon surveys/studies completed or data accessed between 2018 and 2022.
- 2.20 Where third party data is used, its origins, the dates of surveys and the dates of when data sources are accessed will be clearly outlined within the ES alongside any limitations and assumptions.
- 2.21 As required under Schedule 4, Paragraph 3 of the EIA Regulations a description of the future baseline (i.e. the future conditions accounting for natural changes to the existing conditions) will be provided in the ES. However, the technical assessments in the EIA will only be based on the deviation from the existing/current baseline conditions.

### **Identification of Sensitive Receptors**

- 2.22 Based on baseline information and data, a series of receptors or receptor groups are identified that are subject to likely significant environmental effects arising from a project. These receptors are then subject to detailed assessment within an EIA. The

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<sup>7</sup> The relevant technical study areas will be fully defined within the ES.

sensitive receptors that have been identified to date are outlined within **Chapters 6 and 7**.

## **Defining Mitigation and how this will be Controlled**

2.23 Schedule 4, Part 7 of the EIA Regulations states that an ES should include:

*‘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’.*

2.24 Through the EIA process, there will be different types of mitigation identified and developed. These are<sup>8</sup>:

- **Primary mitigation:** Modifications to the location or design of the Proposed Scheme made during the pre-application phase that are an inherent part of the project;
- **Secondary mitigation:** Actions that will require further activity in order to achieve the anticipated outcome. These would be included within the ES and secured by condition and / or obligation; and
- **Tertiary mitigation:** Actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements or actions that are considered to be standard practices used to manage commonly occurring environmental effects.

2.25 As noted above, the design process has and will continue to be informed by baseline surveys, desktop reviews and technical analysis, so that environmental effects are well understood and appropriate primary and tertiary mitigation can be developed.

2.26 The effects of the Proposed Scheme considered within the EIA and reported in the ES will be based on plans and the information contained within the Development Specification Chapter of the ES, which will outline the relevant primary and tertiary mitigation measures.

2.27 Examples of primary mitigation measures include building heights and surface water drainage strategy principles. Examples of tertiary mitigation measures include the adoption of best practice measures that can be controlled via a Construction Environmental Management Plan (CEMP) or other legislative requirements (e.g. adherence to the Construction (Design and Management) Regulations<sup>9</sup>).

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<sup>8</sup> In line with IEMA (2015). EIA Guide to: Shaping Quality Development.

<sup>9</sup> Construction (Design and Management) Regulations 2015 No. 51. Available at: <https://www.legislation.gov.uk/uksi/2015/51/contents/made> [Accessed 21/09/2022].

- 2.28 Where primary and tertiary mitigation is already understood / known at this stage, these aspects are noted in **Chapter 4** and have informed the identification of likely significant effects at this stage. Where such mitigation is used as an evidence base to 'scope out' environmental topics or specific effects, in order to provide confidence to CDC that such measures can be secured, the ES will be supported by a Schedule of Mitigation which will detail all mitigation outlined within the EIA process (both in this Report and within the ES). The Schedule can then be used by CDC for the preparation of appropriate conditions / obligations attached to any planning permission.
- 2.29 Following the conclusion of the effects based on the Proposed Scheme (inclusive of any primary and tertiary mitigation), any further mitigation (secondary mitigation or enhancement) to further reduce an adverse effect or enhance a beneficial one will be identified and will also be documented in the Schedule of Mitigation.
- 2.30 The application of secondary or tertiary mitigation is only considered appropriate if there is a high level of confidence in the mechanism for implementation (by the Applicant or a third party).

### **Information to Inform the Final Assessments within the ES**

- 2.31 The ES will be based on a series of parameter plans and design principles. These design principles will form part of the Development Specification Chapter in the ES which will provide sufficient information, in line with the requirements of the EIA Regulations, to inform the technical assessments presented within the ES.
- 2.32 The Development Specification will only include the necessary information required to inform a robust assessment of likely significant environmental effects. Further detail may be delivered as part of the Application (e.g. illustrative masterplans, character area plans etc.). However, it is not anticipated that there will be a need to link the ES to this further level of detail. This will avoid the need to revisit the ES in the future when relatively minor changes are made (which are within the parameters outlined within the Development Specification).

### **Assessment Scenarios**

- 2.33 The EIA will report the assessment of the likely effects arising from the Proposed Scheme, taking account of the site preparation, earthworks and demolition and construction (collectively referred to as 'construction') and operational stages.
- 2.34 To provide a robust assessment, many environmental topics will consider the following assessment scenarios:
- **Peak Construction:** This will vary across environmental topics and will not be attributed to a specific year, rather it will be determined at what point the worst-case effect could occur. This will be clearly defined for each assessment in the ES; and
  - **Operation:** 2028, when the Proposed Scheme is anticipated to be fully occupied/operational.

2.35 Where required as part of specific technical guidance, additional assessment scenarios will be considered. All scenarios considered will be documented clearly within the ES.

### Level of Effect and Significance Criteria

2.36 The method for assessing the level of effect varies between environmental topics but in principle will be based on:

- The environmental sensitivity (or value / importance) of a receptor - including aspects such as adaptability, tolerance or recoverability; and
- The magnitude of change from the baseline conditions - including aspects such as probability / likelihood of occurrence, geographical extent, complexity, duration (short – up to 1 year, medium – 1 to 10 years, or long-term – over 10 years), frequency and reversibility (i.e. temporary or permanent).

2.37 Sensitivity (or value / importance) of a receptor will be assessed on a scale of high, medium, low and negligible and magnitude of change will be assessed on a scale of large, medium, small and negligible.

2.38 Where relevant, other factors such as feedback from stakeholders, relevant legislation, international, national, regional and local standards / guidance and the inter-relationship between effects (both cumulatively and in terms of potential effect interactions) will also be considered.

2.39 The interpretation and use of the above criteria / factors will be set out within the respective assessment methodology section for each environmental topic within the ES. Where deviation from the above has already been identified, this is noted in **Chapters 6 and 7**, where applicable / appropriate.

2.40 The assignment and determination of the level of effect will be based on professional judgement with the support of the matrix within **Table 2.1** which is seen as a tool to assist with the process. Whilst the matrix within **Table 2.1** provides ranges, this is to guide the competent expert and a definitive level of effect will be provided for each effect, where appropriate.

**Table 2.1: Matrix to support determining level of effect**

		Sensitivity (or value / importance)			
		High	Medium	Low	Negligible
Magnitude of change	Large	Major	Moderate to Major	Minor to Moderate	Negligible
	Medium	Moderate to Major	Moderate	Minor	Negligible
	Small	Minor to Moderate	Minor	Negligible to Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

- 2.41 The following terms will be used to define the level of effects identified and these can be '*beneficial*' or '*adverse*':
- **Major effect:** Where the Proposed Scheme is likely to cause a considerable change from the baseline conditions and the receptor has limited adaptability, tolerance or recoverability or is of the highest sensitivity;
  - **Moderate effect:** Where the Proposed Scheme is likely to cause either a considerable change from the baseline conditions at a receptor which has a degree of adaptability, tolerance or recoverability or a less than considerable change at a receptor that has limited adaptability, tolerance or recoverability;
  - **Minor effect:** Where the Proposed Scheme is likely to cause a small, but noticeable change from the baseline conditions on a receptor which has limited adaptability, tolerance or recoverability or is of the highest sensitivity or a considerable change from the baseline conditions at a receptor which can adapt, is tolerant of the change and / or can recover from the change; and
  - **Negligible:** Where the Proposed Scheme is unlikely to cause a noticeable change at a receptor, despite its level of sensitivity or there is a considerable change at a receptor which is not considered sensitive to a change.
- 2.42 For some environmental topics, relevant guidance or the nature of the effect requires that differing criteria or scales for determining the level of effect are used. However, for the purpose of consistency within the ES the final 'level of effect' will be reported using the terminology and conclusions set out above. This is to ensure that the conclusions of the different effects can be compared during the decision-making process and robustly considered cumulatively.
- 2.43 For each effect, a statement will be made as to whether the level of effect is 'Significant' or 'Not Significant'. This determination will be based on professional judgement and / or relevant guidance, where applicable. Significance will only be concluded for residual effects (i.e. following the identification of secondary mitigation or enhancement).
- 2.44 Effects will also be described in line with the requirements of Schedule 4, Paragraph 5 of the EIA Regulations (i.e. as direct or indirect, short, medium or long-term and temporary or permanent).
- 2.45 Tables that outline the likely significant environmental effects, receptors, residual effects and whether the effects are considered to be 'Significant' or 'Not Significant' will be provided at the end of each technical Chapter of the ES.
- 2.46 Cumulative effects will be considered as a single co-ordinated assessment as outlined in **Chapter 8**.

## Competent Expertise

- 2.47 Regulation 18, Paragraph 5(a) of the EIA Regulations requires the ES to be prepared by competent experts.
- 2.48 The EIA will be led by Turley. IEMA has awarded Turley the EIA Quality Mark in recognition of our technical quality and commitment to improvement in practice.
- 2.49 All technical assessments will be undertaken by a suitably qualified project team, inclusive of a thorough technical review to assure technical credibility, followed by a subsequent procedural review by the EIA co-ordination team and EIA Project Director.
- 2.50 In line with the EIA Regulations, all contributors to the EIA are competent experts in EIA and this will be demonstrated in the ES with an overview of each key expert's qualifications, professional accreditations and experience.



## Format of the ES

- 2.51 The ES will comprise three volumes:
- **Volume 1: Primary Report and Graphics;**
  - **Volume 2: Appendices;**
  - **Volume 3: Environmental Management Plan; and**
  - **Volume 4: Non-Technical Summary.**
- 2.52 The proposed format and structures of the ES is provided in **Appendix 2**.

## Co-ordination with Habitats Regulation Assessment

- 2.53 Regulation 27 of the EIA Regulations states:
- 'Where in relation to EIA development there is, in addition to the requirement for an EIA to be carried out in accordance with these Regulations, also a requirement to carry out a Habitats Regulation Assessment, the relevant planning authority or the Secretary of State, as the case may be, must, where appropriate, ensure that the Habitats Regulation Assessment and the EIA are co-ordinated'*.
- 2.54 The Site is not located within or within close proximity to either a European designated ecological site or an associated impact risk zone. As such, a Habitats Regulation Assessment will not be completed for the Proposed Scheme.

## Interaction of the ES with Other Application Documents

- 2.55 The Application and ES will be accompanied by a number of documents, some of which will inform the ES (and therefore should be read in conjunction with the ES) whilst others will form standalone Application Documents which provide a greater level of

detail of how the Proposed Scheme is likely to come forward or how it complies with policy. In addition, the ES will be supported by a range of technical appendices.

2.56 **Table 2.2** provides further details based on the current understanding of the Application Documents.

**Table 2.2: List of anticipated supporting Application Documents**

Anticipated Document title*	The Application Document is required to support the ES and will be appended	The Application Document will be standalone but should be read in conjunction with the ES <sup>10</sup>	There are no linkages between the ES and the Application Document
Planning Statement			✓
Design and Access Statement			✓
Statement of Community Engagement			✓
Affordable Housing Statement			✓
Transport Assessment and Framework Travel Plan		✓	
Phase 1 Desk Study Report		✓	
Flood Risk Assessment and Drainage Strategy		✓	
Preliminary Ecological Appraisal		✓	
Arboricultural Impact Assessment		✓	
Landscape and Visual Impact Assessment		✓	
Archaeological and Heritage Assessment		✓	

<sup>10</sup> Aspects which are committed to (and therefore form part of the Proposed Scheme) will be outlined within the Development Specification Chapter of the ES.



Anticipated Document title*	The Application Document is required to support the ES and will be appended	The Application Document will be standalone but should be read in conjunction with the ES <sup>10</sup>	There are no linkages between the ES and the Application Document
Agricultural Land Quality Report		✓	
Noise Impact Assessment		✓	
Air Quality Assessment		✓	
Sustainability / Energy Statement		✓	

*\*Document titles are subject to change.*

## 3. Site Context

### Location and Setting

- 3.1 The Site covers an area of approximately 12.63ha and is located to the northern extent of the town of Banbury, south of the village of Hanwell (as defined on **Figure 1**).
- 3.2 The Site comprises two cultivated arable fields, Parcel A to the west and Parcel B to the east, delineated by hedgerows and the tree-lined Gullicote Lane down the centre of the Site separating the parcels.
- 3.3 The Site is bound by:
- Hedgerows to the north and east;
  - Narrow band of woodland to the south; and
  - A hedgerow along the B4100 Warwick Road to the west.

### Historic Land Uses

- 3.4 The Site is first shown on the Ordnance Survey Warwickshire Sheet LV.NE map surveyed in 1881<sup>11</sup>, comprising three parcels of agricultural land. At this time, Parcel A was split into two field parcels by a tree-lined field boundary which bisected the Parcel in a north-south direction, whilst Parcel B remained as is observed in the present day.
- 3.5 The network of Public Rights of Way (PRoWs) surrounding the Site also resembled those currently observed, including a footpath running through Parcel A in the footprint of the modern-day Footpath 191/6/30. Gullicott Lane is also mapped between the two parcels.
- 3.6 OS mapping and aerial photography shows the field boundary within Parcel A to be present through the 1940s, with no clear imagery available to determine its precise time of removal before its absence is recorded clearly in 2005. No other changes have been observed within the Site in this time.

### Agricultural Land and Soils

- 3.7 The Site comprises two arable fields and is surrounded by arable fields to the north and east.
- 3.8 As summarised by the Agricultural Land Quality Report prepared in support of the Application (**Appendix 4**), an Agricultural Land Classification (ALC) survey was undertaken at the Site by the Farming and Rural Conservation Agency (FRCA) on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF) in 1999 to determine its land quality. The survey classified the agricultural area of the Site (11.6ha) as comprising

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<sup>11</sup> OS (1889) Warwickshire Sheet LV.NE. Surveyed 1881.

approximately 6.1ha of Grade 2 land (in the south/west) and approximately 5.5ha of Subgrade 3a land (in the north/east of the Site).

- 3.9 Land within Grades 1 – Subgrade 3a is categorised as ‘Best and Most Versatile’ (BMV) land in the National Planning Policy Framework, meaning that the Site’s agricultural land is Best and Most Versatile in its entirety.

## **Air Quality**

### **Local Air Quality Management Review and Assessment**

- 3.10 CDC, in fulfilment of statutory requirements, has conducted an on-going exercise to review and assess air quality within their administrative area (Review and Assessment).
- 3.11 Through the annual Review and Assessment process, CDC has consequently declared four air quality management areas (AQMAs) within their administrative area. The nearest AQMAs to the Site are: ‘AQMA No.1’ at an approximate distance of 2.5km to the southeast; and ‘AQMA No.2’ located approximately 2.6km southeast of the Site.

### **Review of Baseline Air Quality Monitoring**

- 3.12 Monitoring data collected prior to the COVID-19 pandemic (i.e. pre-2020) has been used to characterise the baseline environment, as pollutant concentrations monitored during 2020 and 2021 are expected to be atypical, and not representative of the local environment and have therefore not been considered.
- 3.13 No project specific air quality surveys have been undertaken, as it has been agreed with the Environmental Health Officer (EHO) at CDC that baseline air quality data as obtained from publicly available sources are sufficient<sup>12</sup>.

### **Automatic Air Quality Monitoring**

- 3.14 CDC do not undertake any automatic monitoring of pollutants. Furthermore, the closest Automatic Urban and Rural Network (AURN) monitor to the Site is >25km away. Due to the separation distance between the monitor and the Site, comparable pollutant concentrations are not anticipated and were not considered further.

### **Passive Diffusion Tube Monitoring**

- 3.15 Passive nitrogen dioxide (NO<sub>2</sub>) diffusion tube monitoring is currently undertaken by CDC within their administrative area, at numerous locations. The full extent of the details and results for those passive diffusion tube monitoring sites of relevance to the Site are provided within the Air Quality Assessment prepared in support of the Application (**Appendix 5**).
- 3.16 The monitoring locations within proximity to the Site (outside of an AQMA) have all recorded annual mean NO<sub>2</sub> concentrations ‘well below’ the air quality assessment level (AQAL) of 40µg/m<sup>3</sup> between 2015 – 2019.

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<sup>12</sup> Email between SLR Consulting Ltd and the EHO at CDC, dated 1st February 2022.

- 3.17 The diffusion tube closest to the Site (Warwick Road North – approximately 1.6km to the south) recorded an annual mean NO<sub>2</sub> concentration of 20.3µg/m<sup>3</sup> in 2019, representing 50.8% of the AQAL.
- 3.18 Based on the above, the Site is not believed to be sensitive in relation to air quality.

**Defra Mapped Background Concentrations**

- 3.19 A review of annual mean background NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations has been conducted for the Site locale. Annual mean background concentrations were obtained from the Department for Environment, Food and Rural Affairs (Defra) published background maps (2018-reference year), based on the 1km grid squares which cover the modelled domain.
- 3.20 The Defra mapped background concentrations for base year of 2019 and the predicted opening year of the Proposed Scheme (2027) were considered. All of the mapped background concentrations presented are well below the respective annual mean AQALs.

**Biodiversity**

- 3.21 This baseline assessment has been informed by a desk study and Extended Phase 1 habitat survey of the Site as well as further Phase 2 surveys for breeding birds, foraging/commuting and roosting bats and badger. Full details of these surveys are provided in the Ecological Appraisal provided at **Appendix 6**.
- 3.22 No part of the Site is covered by any statutory designation and there are no Internationally designated sites within 10km of the Site. There is a single nationally designated site, Neithrop Fields Cutting Site of Special Scientific Interest (SSSI), located 800m south of the Site which is designated for its geological features.
- 3.23 No part of the Site is covered by any non-statutory designations, though there are five such designations within 2km of the Site as set out in **Table 3.1** below. The closest and most relevant of which is the Fishpond Woods Hanwell Oxfordshire Local Wildlife Site (OLWS), located 0.5km north of the Site and designated for its series of medieval ponds surrounded by woodland.

**Table 3.1: Non-statutory designations within the Site’s Potential Zone of Influence**

Designation	Distance from Site	Interest Feature(s)
Fishpond Woods Hanwell OLWS	0.5km north	A series of medieval ponds surrounded by woodland spread across an 8.17ha site. GCN are not noted to be present.
Northern Valleys Conservation Target Area (CTA)	0.8km west	This 1395ha site encompasses several steep sided valleys supporting acid to neutral grassland, with scattered fens and swamps.

Designation	Distance from Site	Interest Feature(s)
Hanwell Gorse Proposed Cherwell District Wildlife Site (PCDWS)	1.1km north-east	Supporting a variety of habitats, this 3.5ha site includes lowland mixed deciduous woodland, acid grassland and a stream with an associated marsh along the northern site boundary.
Horley Scout Camp PCDWS	1.4km west	A former nature reserve, a small site of 5.3ha including woodland and an old railway embankment.
Horley OLWS	1.5km north-west	A complex 24.35ha site surrounding a disused railway, incorporating limestone grassland, woodland, scrub, fen and several ponds.

- 3.24 Habitats within the Site are dominated by two fields under intensive agricultural management and with narrow (0.5m wide) improved grassland margins, both considered to be of negligible to low ecological value. Informal footpaths have been created by local walkers around the edges of the fields resulting in packed-bare earth tracks along each of the Site hedgerows. The field parcels are bounded by a mixture of species-rich hedgerows and species-poor hedgerows of varying structure, with some lengths becoming gappy and defunct. A hedgerow with trees delineates both sides of Gullicot Lane running north-south between Parcels A and B and a band of immature mixed plantation woodland runs parallel, though separate from, the length of the Site's southern boundary.
- 3.25 Detailed species surveys were completed across the Site in 2021 for breeding birds, bats and badgers (as detailed in **Appendix 6**). Further surveys for dormice, great crested newt, reptiles, otter, water vole, crayfish and invertebrates were scoped out of further assessment due to the paucity of suitable habitat within the Site and the lack of local records of the species. The Extended Phase 1 Habitat survey was also considered to have collated sufficient information with regards to the on-Site habitats and their quality such that further detailed botanical survey was not considered necessary.
- 3.26 The breeding bird survey identified an assemblage dominated by common and widespread farmland species though low numbers of species of conservation concern were present including small numbers of skylark. Based on the species present and the number of each species identified, the overall assemblage was considered to be no greater than Site-level ecological importance.
- 3.27 A preliminary ground level roost assessment of trees identified nine trees with features of medium or low suitability to support roosting bats. Bat activity surveys recorded low to moderate levels of bat foraging/commuting activity across the Site, with typical and widespread species accounting for the vast majority of recordings made, including common and soprano pipistrelle, with noctule and Myotis species also recorded on a regular basis. However barbastelle bat also recorded on two of the survey months. Barbastelle were absent in July and with a very low number of registrations in May, with only four passes across all four detectors for the recording period. Registrations in September reached 48 across the four detectors, though the total number still only accounted for 0.5% of the total bat registrations. Given their preference for woodland

roost sites it is likely that barbastelle roosts are absent from the Site, though the boundary habitats will provide some suitable foraging habitat, albeit likely of only low to moderate value for this species.

- 3.28 Based on the survey findings, the bat population supported by the Site is considered to be of Local-level ecological importance.
- 3.29 Badger presence has been confirmed within the Site, with two setts located on the northern Site boundary, including an active main sett and a partially active annex sett. Further (non-main) setts are located off-Site to the east which are considered to fall within the same territory as the onsite badger clan. Badger are considered to be of Local-level ecological importance.

## **Built Heritage and Archaeology**

### **Designated heritage assets**

- 3.30 There are no designated heritage assets (as defined in Annex 2 of the National Planning Policy Framework) such as world heritage sites, scheduled monuments, listed buildings, registered parks and gardens or registered battlefields, within the Site.
- 3.31 In the wider area, the National Heritage List for England (NHLE) identifies two conservation areas and ten listed buildings within 1km of the Site.
- 3.32 The assets are located in two distinct spatial groups with respect to the Site. The first group of assets are contained within the Hanwell Conservation Area (HCA) approximately c.120m to the north of the Site. The HCA includes 9 locally listed buildings and ten listed buildings, including the Grade I Listed Church of St Peter (NHLE ref. 1216364) approximately 320m northeast of the Site; and the Grade II\* Listed Hanwell Castle (NHLE ref. 1287674) approximately c.380m to the north-east.
- 3.33 The remaining designated heritage asset within 1km of the Site comprises the Drayton Conservation Area, the northern edge of which is located c.800m to the south-west of the Site.

### **Non-designated heritage assets**

- 3.34 Data from the Oxfordshire Historic Environment Record (OHER) records archaeological sites and artefact findspots within a 1km radius of the Site. These sites and artefact findspots are described in full detail within the Archaeological and Heritage Assessment prepared in support of the Application.
- 3.35 No previous archaeological features have been confirmed in the Site. However a geophysical survey undertaken in 2022 to inform the Application has revealed several possible archaeological features within the Site, which include a discrete area of possible Iron Age/Romano British settlement in Parcel B. Such remains would be of varying degrees of archaeological and historical interest, but it is unlikely that they would be of more than low/moderate significance.
- 3.36 Any below-ground deposits that are present are likely to be poorly preserved due to the extensive agricultural activity of the 19<sup>th</sup> and 20<sup>th</sup> centuries, clearly visible on aerial photographs, LiDAR and the geophysical survey results, thereby reducing their

significance. Therefore, there is no reason to believe or expect that the Site will contain archaeology of such significance that it would require preservation in situ.

### **Flood Risk and Water Quality**

- 3.37 The closest waterbodies to the Site are Sor Brook and Hanwell Brook, located approximately 800m west and 1.3km east of the Site respectively. Parcel A falls within the catchment of Sor Brook, whilst Parcel B falls into the catchment of Hanwell Brook.
- 3.38 Based on the Environment Agency long-term flood risk map<sup>13</sup>, the Site in its entirety is categorised as being at very low risk of flooding from fluvial sources (i.e. <0.1% chance of flooding each year).
- 3.39 The majority of the site is shown at very low risk of flooding owing to local topography, however a very small area of the Site at the southern boundary of Parcel A (in the location of PRow Footpath 191/6/30) is shown as being at low risk of surface water flooding. The Site is also at a very low risk of flooding from public sewerage infrastructure.
- 3.40 The Site is mapped by the Cherwell Level 1 Strategic Flood Risk Assessment Update (SFRA) as being at a very low risk of groundwater flooding, and there are no historic records of groundwater flooding having occurred at the Site.
- 3.41 Initial soakaway testing at four trial pit locations across the Site to inform the Flood Risk Assessment (FRA) and Drainage Strategy for the Proposed Scheme (**Appendix 7**) has encountered groundwater at a depth of 2.85m below ground level (bgl). As such, the Site is not considered to be at risk of groundwater flooding.
- 3.42 No existing public drainage infrastructure has been mapped within the Site by Thames Water, the local surface water/foul sewer network operator for the local area.

### **Ground Conditions and Contamination**

- 3.43 The Phase 1 Desk Study Report completed for the Proposed Scheme (**Appendix 9**), informed by British Geological Survey (BGS) mapping<sup>14</sup>, identifies the Site as being underlain primarily by the Marlstone Rock Formation described as sandy, shell fragmental and ooidal limestone interbedded with ferruginous calcareous sandstone, and subordinate ferruginous mudstone beds. This is underlain by the Dyrham Formation, described as pale to dark grey, and greenish grey silty and sandy mudstone, with interbeds of silt or very fine sand. No superficial deposits are indicated on the BGS mapping.
- 3.44 The Marlstone Formation is identified as a Secondary A Aquifer, being defined as *'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'*. Beneath the Marlstone

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<sup>13</sup> <https://check-long-term-flood-risk.service.gov.uk/map>.

<sup>14</sup> <https://mapapps.bgs.ac.uk/geologyofbritain/home.html>.

Formation, soils are classified as having an intermediate leaching potential, however the Site is not located within a Groundwater Source Protection Zone.

- 3.45 In the absence of instructive investigations, ground conditions at the Site are expected to comprise a nominal thickness of made ground/topsoil associated with agricultural use. Shallow groundwater is expected across areas where the Marlstone Formation is present.
- 3.46 The Site, at worst, is considered to have a low subsidence risk relating to shrink-swell clay soils and landslides, whereby the latter is due to topography the Site sloping eastwards.
- 3.47 No history of coal mining has been reported within the Site, although the nearest historic mining activity to the Site is located approximately 815m southeast, resulting from opencast mining of the Marlstone Formation. No history of landfill has been recorded within the Site, with the nearest historic landfill site being located approximately 842m south.
- 3.48 The majority of the Site is located within a higher probability radon area where 10% to 30% of homes are above the action level.
- 3.49 Potential on-Site contamination sources are limited to organic materials in agricultural made ground and from agricultural vehicles (low to moderate/low risk), and off-Site sources are limited to the migration of contamination/ground gases from backfilled quarries and any made ground in the surrounding area (moderate/low risk).

## Lighting

- 3.50 A site visit was undertaken during night-time conditions on the 20<sup>th</sup> September 2022, to assess the general ambience of the site itself. There are no existing buildings on site and consequently the Site does not produce any sky glow.
- 3.51 The Site currently comprises of green fields. The Site is bound by:
- Green fields and the village of Hanwell to the north including the Hanwell Community Observatory, with no major sources of light in the green fields;
  - Green fields to the east, with no main sources of light;
  - Residential properties to the south, with the main source of light from Street Lighting; and
  - Green fields to the west with no main source of light.
- 3.52 Based upon the proximity of the residential developments to the south of the Site and its rural location the environment surrounding the Site is low district brightness, categorised as an E2 Environmental Zone in accordance with the ILP Guidance Notes GN01/21<sup>15</sup>.

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<sup>15</sup> ILP (2021) Guidance Note 01/21 The reduction of obtrusive light.



3.53 Sky glow levels measured onsite did not exceed approximately 17.93SQM (good quality sky for star gazing is noted at being above 20SQM) and noticeable skyglow from the town of Banbury was observed.

### Receptors

3.54 Following the site visit, a desktop survey of the site and having liaised with the project team the following light-sensitive receptors have been identified;

- Residential;
- Ecological; and
- Hanwell Observatory.

3.55 The nearest residential receptors to the north are the Village of Hanwell with the closest of these being over 200m away from the nearest proposed luminaire within the Proposed Scheme. To the south, residential properties off De La Warr Drive with the closest of these being over 70m away from the nearest proposed luminaire with a dense layer of vegetation in-between.

3.56 The nearest ecological receptors are the woodland to the south of the Site and the boundary hedgerow to the north and east of the Site.

3.57 The Hanwell observatory is around 450m north east of the nearest proposed luminaire as part of the Proposed Scheme.

### Noise and Vibration

3.58 The Environmental Health Department at CDC was consulted on 11<sup>th</sup> March 2022 regarding the proposed methodology and assessment. Neil Whitton, Environmental Health Officer confirmed approval with the proposed scope via email correspondence dated 14<sup>th</sup> March 2022.

3.59 Baseline noise monitoring was undertaken from 5<sup>th</sup> – 7<sup>th</sup> April 2022 to inform the Noise Impact Assessment<sup>16</sup> at three locations close to the Site:

- Immediately southwest of the Site, adjacent to the B4100 Warwick Road (Location 1);
- Immediately northeast of the Site, adjacent to the farm buildings (Location 2); and
- Immediately south of the Site, neighbouring existing residential properties on De La Warr Road (Location 3).

3.60 Measured noise levels during daytime (07:00 – 23:00) and night-time (23:00 – 07:00) periods have been replicated within **Table 3.2** below.

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<sup>16</sup> SLR (2022) file 410.06713.00006\_Warwick\_Road\_Banbury\_NIA v3.

**Table 3.2: Derived free-field period average sound levels, dB**

Measurement Details			L <sub>Aeq, T</sub>		L <sub>Amax(F)</sub> *	
Location	Period	Time	Range	Logarithmic Average	Range	10 <sup>th</sup> Highest
1	Day	07:00 – 23:00	60 - 72	70	-	-
	Night	23:00 – 07:00	41 - 69	61	50 - 92	83
2	Day	07:00 – 23:00	40 - 65	58	-	-
	Night	23:00 – 07:00	44 - 68	57	53 - 89	75
3	Day	07:00 – 23:00	41 - 60	52	-	-
	Night	23:00 – 07:00	39 - 62	51	49 - 84	68

\* Not normally exceeded 10 times per night

- 3.61 **Tables 3.2** demonstrates that the highest noise levels were recorded at the western Site boundary, caused by traffic movements on the B4100 Warwick Road. No commercial noise (i.e. from plant activity noise) was observed or measured during the monitoring period. As such, the noise environment of the Site was dominated by traffic on the B4100 Warwick Road.
- 3.62 It has been observed that the nearest existing residential properties to the Site are located along De La Warr Road approximately 70m to the south of the Site and Gullicott Lane approximately 115m to the north of the Site.

### Socio-Economics and Human Health

- 3.63 The Site is located at the north-western extent of Banbury in the district of Cherwell. Cherwell was estimated to accommodate a resident population of approximately 151,800 people in 2020, equating to around 1.65% of the total population of the South East of circa 9,217,300<sup>17</sup>. The working-age cohort of the population (residents aged 16 – 64 years) accounts for 61.3% of Cherwell’s population, similar to the 61.1% recorded in the South East as a whole.
- 3.64 The 2019 Indices of Deprivation<sup>18</sup> identified no Lower Super Output Areas (LSOAs) within Cherwell as falling within the 10% most overall deprived areas in England. However, eight LSOAs fall within the 30% most deprived areas nationally. Conversely, Cherwell has nine LSOAs that are categorised as being in the 10% least deprived of LSOAs nationally.
- 3.65 The Draft CDC Housing Strategy 2018 – 2023<sup>19</sup> sets out a target of delivering 1,140 new homes each year.

<sup>17</sup> ONS via Nomis (2020) Population Estimates: 2020.

<sup>18</sup> Ministry of Housing, Communities & Local Government (2019) English indices of deprivation.

<sup>19</sup> CDC (2018). DRAFT Cherwell District Council Housing Strategy 2018 – 2023: ‘Cherwell – A Place to Prosper’.

- 3.66 Hardwick Primary School is the closest primary school to the Site, lying approximately 1.1km southeast of the Site in Banbury, with further provision in Banbury nearby. The closest secondary education provider, North Oxfordshire Academy, is located approximately 1.2km south of the Site.
- 3.67 In terms of primary healthcare infrastructure, a total of eight General Practitioner (GP) surgeries are located within the 3 miles of the Site<sup>20</sup>. Seven dental practices are identified within 3 miles of the Site, with these largely being located in central Banbury<sup>21</sup>. A number of community facilities are also located within Banbury.
- 3.68 The draft Oxfordshire Pharmaceutical Needs Assessment<sup>22</sup> provides an overview of baseline health outcomes in Cherwell relative to the national average. On the 2011 census measure of disability, 8.0% of people in Cherwell reported being impaired a little and 6.1% reported being impaired a lot, fairly similar to the Oxfordshire levels. Life expectancy at birth in Cherwell in 2017 – 2019 was 81.2 years for men and 84.0 years for women. The respective life expectancies were 81.7 and 85.0 years for Oxfordshire and 81.2 and 84.0 years for England as a whole.

### **Landscape and Visual**

- 3.69 The Site comprises two arable fields (Parcels A and B) on the northern edge of Banbury, alongside the new build Persimmon development of Hanwell Fields to the south. Both are regular in shape and bound by a mixture of tree belt and hedgerow.
- 3.70 Parcel A is quite different from land to the east, as it relates much more to the busy Warwick Road along its western boundary than to the wider vale landscape. Visually, Parcel A is contained (both in terms of views out and in) by the dense plantation mixed woodland buffer to the south, a well-vegetated species rich hedgerow and tree boundary to the east, formed by Gullicott Lane, and a single line of mature trees alongside an outgrown but species-rich hedgerow that forms a buffer to the farmland to the north. The western boundary is delineated by well-maintained native hedgerow which allows clear visual connection with Warwick Road as it passes alongside, however views further west from within the Site are curtailed by the tree belt situated on the opposite side of Warwick Road to the Site.
- 3.71 Parcel B differs from Parcel A due to its topography. From a review of ordnance survey mapping and a site visit, the route of Gullicott Lane forms the point at which landform begins to slope downward into the valley system to the east, sloping from 144m aOD at its west to 140m aOD at its east with landform beyond continuing to slope downwards in this direction. As with Parcel A, no watercourses or waterbodies are present.
- 3.72 As with Parcel A, although there are good footpath connections to the south, the dense plantation mixed woodland buffer to the south and well-vegetated species rich hedgerow and tree boundary to the west formed by Gullicott Lane provide an element

<sup>20</sup> <https://www.nhs.uk/service-search/find-a-gp/results/OX16%201AR>.

<sup>21</sup> <https://www.nhs.uk/service-search/find-a-dentist/results/OX16%201AR>.

<sup>22</sup> OCC (2022). Oxfordshire Pharmaceutical Needs Assessment. Available at: [https://insight.oxfordshire.gov.uk/cms/system/files/documents/FINAL\\_Oxon\\_PNA2022\\_20220401.pdf](https://insight.oxfordshire.gov.uk/cms/system/files/documents/FINAL_Oxon_PNA2022_20220401.pdf) [Accessed 14/10/2022].

of containment in these directions. The change in topography of both the Site itself and the wider landscape to the north-east and east makes this parcel more visually open in comparison to Parcel A. From its high point alongside Gullicott Lane, clear views are available of industrial buildings off Noral Way (circa 1.8km to the east of the Site) and the rising agricultural landscape of the opposite valley side.

- 3.73 The northern boundary of Parcel B is made up of defunct species-rich hedgerow and trees which connects eastwards beyond the Site boundary to a rectangular block of woodland copse. The eastern boundary of Parcel B is similarly made up of defunct species-rich hedgerow and trees which give north-south green infrastructure connection across this arable agricultural landscape. These landscape fabric features, and those within Parcel A, are generally in good condition but are considered to form no more than locally valuable habitat features.
- 3.74 The Site as a whole, as agricultural fields situated between the settlements of Hanwell and the northern edge of Banbury, presently provides physical separation between these two settlements (notably from a visual and sensory perspective when travelling along Warwick Road and the on-Site PRoW).
- 3.75 Landscape-related designations and policy considerations within 2km of the Site include:
- National landscape designations: The site does not lie within a nationally designated landscape. The Cotswolds Area of Outstanding Natural Beauty (AONB) lies approximately 4.5km to the north-west at its closest point and there is no intervisibility with the site. This designation has therefore been scoped out from further consideration;
  - Local landscape designations: The site does not lie within any local designated landscapes, however it is noteworthy that the site used to be located within the Ironstone Downs Area of High Landscape Value defined by the Cherwell Local Plan (1996) but not retained within the within the Cherwell Local Plan (2011 - 2031) adopted in July 2015; and
  - Spiceball Country Park is located circa 2.3km to the south-east of the site, with intervening distance and built form of Banbury providing separation and screening of intervisibility. This designation has therefore been scoped out from further consideration.

#### **Oxfordshire Wildlife and Landscape Study (OWLS) 2004**

3.76 The OWLS 2004 is the most recent Landscape Character Assessment of the entire Oxfordshire County. The Site is located within the Farmland Plateau Landscape Type (LT), which is described as *'a high limestone plateau with a distinctive elevated and exposed character, broad skies and long-distant views. Large-scale arable fields dominate the landscape, with some medium-sized plantations partially obscuring the otherwise open views'*. The key characteristics of the Farmland Plateau LT are listed as:

- *'Level or gently rolling open ridges dissected by narrow valleys and broader vales;*
- *Large, regular arable fields enclosed by low thorn hedges and limestone walls;*

- *Rectilinear plantations and shelterbelts;*
  - *Sparsely settled landscape with a few nucleated settlements; and*
  - *Long, straight roads running along the ridge summits.'*
- 3.77 For the Local Character Area (LCA) of Hanwell in particular (NU/24) it notes that the area is *'characterised by medium-sized, regularly-shaped arable fields enclosed by very low, gappy hawthorn hedges. There is some grassland, particularly where the landform is steeper and more undulating. There are a few small mixed plantations and scattered hedgerow trees of young ash and sycamore.'*
- 3.78 A key recommendation for this LCA, and for consideration as part of future development proposals, is to *'Safeguard and enhance the open, sparsely settled character of the landscape whilst maintaining and strengthening its pattern of hedgerows, stone walls, small woodlands and tree belts'.*

### **Banbury Landscape Sensitivity and Capacity Assessment (Sept 2013)**

- 3.79 The Banbury Landscape Sensitivity and Capacity Assessment defines Parcel B of the Site within the western extent of 'Site A', which comprises a 105ha parcel of primarily arable land divided by mature hedgerows located to the north of Banbury between Dukes Meadow Drive and Hanwell village (north of the new build development residential development of Hanwell Fields Estate), with open countryside to the east and west and Hanwell village to the north.
- 3.80 It notes that Site A forms a buffer to the northern edge of Banbury, with the only development north of Duke's Meadow Drive being *'the presence of the football and cricket pitches with associated club house in the east corner of the site although, due to the use, this does not infringe on the rural appearance in the south-east corner of the site.'* The western part of Site A is *'crossed by a number of public footpaths all of which are well trodden routes'* such as that passing alongside the eastern boundary of Parcel B, and *'middle and long distance panoramic views are available across the valley'* which are again available when stood at the western extent of Parcel B looking east.
- 3.81 In terms of landscape sensitivity this assessment notes that Site A has a *'direct influence upon the setting of the Hanwell Conservation Area located to the north of the site due to the visual association'* which when *'combined with the strong field pattern, important historical hedgerows and association yet separation from Banbury contribute to the historical context of the area'*. The assessment goes on further in terms of Landscape Value, however, to note that the western area of Site A *'forms part of the visual setting for the Hanwell Conservation Area which should be maintained'*.
- 3.82 Overall, the Site is not particularly constrained in terms of its landscape fabric or biodiversity value and is well-bounded and contained within the local landscape, particularly in the case of Parcel A, with Parcel B being more open and contributing to the landscape to the east. It is evident that the Site as a whole contributes towards the prevention of coalescence between Banbury and Hanwell and while the eastern and southern boundaries of Parcel A form visual enclosure by existing built form and mature landscape features respectively, consideration should be given to enhancing

the northern boundary of the Site which is visible in some views from Hanwell and pulling development back from this edge to continue to prevent coalescence.

## Transport

### *Vehicle Links*

- 3.83 The Site is located adjacent to the B4100 Warwick Road which runs on a north-south alignment adjacent to the western Site boundary. The B4100 provides a key link between Banbury to the south and Shotteswell to the north. The B4100 keeps running north up to the M40 to the south of Royal Leamington Spa. In the environs of the Site, the B4100 Warwick Road is single carriageway and of approximately 7.3m in width (i.e. 3.65m running lanes).
- 3.84 The Site is well-related to a range of existing and forthcoming facilities and services in northern Banbury. It is also located so as to benefit from the additional retail amenities that will be delivered within the consented 'Drayton Lodge Farmhouse' development<sup>23</sup>.
- 3.85 The accessibility of the Site for pedestrians is further enhanced by a number of PRoWs that run through the Site and surrounding area, which are discussed below as follows:
- There is a PRoW that provides a connection to the southeast, between the Site and the roundabout junction between Dukes Meadow Drive and Winter Gardens Way. From the southern boundary of the Site, three existing footpaths (120/107/10, 120/107/20 and 120/107/30) combine to provide a link through to the shared-use foot/cycleway that runs to the south of Dukes Meadow Drive, with the crossing of the carriageway facilitated by a refuge island;
  - There is also a PRoW that provides a connection to the south of the Site, by way of an existing footpath (191/6/10). This footpath ties into the pedestrian network that is to be delivered as part of the consented 'Land Off Warwick Road North Of Hanwell Fields' development<sup>24</sup>, which thereafter ties into the wider network of northern Banbury;
  - There is a third PRoW that provides a connection between the Site and the village of Hanwell, which lies to the north. Through a combination of two existing footpaths (239/6/10 and 239/10/10) a link is provided from the northern Site boundary through to the footway network on Main Street; and
  - There are also a number of PRoWs that extend through the surrounding countryside and that provide routes for leisure walks.
- 3.86 Therefore, it is considered that the location of the Site presents the opportunity for journeys, by active modes of travel, to a number of day-to-day needs.

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<sup>23</sup> CDC planning reference 18/01882/OUT for 320 dwellings including affordable housing, together with a local centre of 0.5ha (providing retail and community facilities), landscaping, public open space, playing fields, allotments, access and associated infrastructure.

<sup>24</sup> CDC planning reference 12/01789/OUT for up to 350 dwellings, together with new vehicular access from Warwick Road and associated open space.

### **Cycling**

- 3.87 Whilst there is no existing cycle-specific infrastructure connecting the Site to the northern edge of Banbury, this is not unexpected given its existing undeveloped nature.
- 3.88 Furthermore, as part of the consented 'Land off Warwick Road North of Hanwell Fields' and 'Land For Proposed Development At Drayton Lodge Farmhouse' developments a number of recent cycle links have been created, comprising of 3.0m shared use routes on both sides of the B4100 Warwick Road along with a Toucan crossing. These cycle links connect these developments, of which the 'Land off Warwick Road North of Hanwell Fields' bounds the southern Site boundary, to the existing northern edge of Banbury.

### **Public Transport**

- 3.89 The closest existing bus stops, located on different sections of Dukes Meadow Drive, lie within 700m and 750m from the centre of Site, which equate to an 8-minute and a 9-minute walk respectively.
- 3.90 Furthermore, as part of the consented 'Land For Proposed Development At Drayton Lodge Farmhouse' development it is understood that new bus stops are being proposed on Warwick Road just south of the junction with Nickling Road. This bus stop would be located within 350m of the Site to the south, with an estimated walking journey of 3 minutes and with access to the bus stop facilitated by the provision of a Toucan crossing.
- 3.91 Banbury Railway Station located within 5km southeast of the Site in central Banbury offers regular, frequent services to Oxford, Bicester and Leamington Spa. These are provided on services that reach London (on a frequency of 3 services per hour) and Birmingham (on a frequency of 2 trains per hour).

### **Microclimate (Daylight, Sunlight, and Overshadowing and Wind Microclimate)**

- 3.92 Due to the limited built form on-Site, there are no obstructions for existing residents and amenity spaces in respect to daylight / sunlight amenity levels in the vicinity of the Site.
- 3.93 The direction of prevailing winds varies throughout the year but is predominantly from the southwest. Given the absence of built form in this direction, it is not considered that unusually windy conditions are likely. Wind is considered likely to be strongest at the elevated areas of the Site.

### **Waste**

- 3.94 The existing use at the Site (i.e. arable agricultural land) is anticipated to generate a limited quantity of waste.

### **Climate Change**

- 3.95 The Site is in agricultural use and although direct and indirect greenhouse gas (GHG) emissions may currently be occurring from farm vehicles or other agricultural activities

(e.g. application of fertilizer), such emissions are considered likely to be limited. Similarly, some level of atmospheric carbon sequestration may currently occur on-Site as a result of the growth of trees and hedgerows. However, such carbon reductions are again considered likely to be limited. For the purposes of considerations within this EIA Scoping Report, baseline GHG emissions from within the Site will be assumed to be zero.

### **Utilities**

- 3.96 No underground/overhead utilities including potable or foul water mains, electricity cables or gas pipelines are located within the Site.

### **Hazards**

- 3.97 There are no Control of Major Accident Hazard (COMAH) sites within the Site nor within three miles of it<sup>25</sup>.

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<sup>25</sup> <https://notifications.hse.gov.uk/COMAH2015/Search.aspx>.



## 4. High Level Development Specification

### Introduction

- 4.1 The Proposed Scheme comprises residential uses, open space (including ecological habitats and surface water drainage) and infrastructure works.

### Overview of Site Preparation

- 4.2 All temporary and permanent works will take place within the boundary shown on **Figure 1**. This boundary shows the area within which planning permission will be sought.
- 4.3 It is envisaged that temporary fencing/boarding will be erected around the perimeter of the Site at the outset of construction.
- 4.4 Access to the Site for initial site preparation works will be via the existing gated access from Gullicott Lane at the north-eastern boundary of Parcel A. A new vehicular access point from B4100 Warwick Road at the western Site boundary will be created early in the construction stage, and then used as the primary construction access, before becoming the permanent access for operation.
- 4.5 It is anticipated that the Public Right of Way (PRoW) footpath Drayton (Banbury) 191/6/30 (which currently runs through Parcel A) will be retained and protected during construction with protective fencing. The footpath Hanwell 239/7/20 (which currently forms the eastern boundary of Parcel B) will be retained and protected by protective fencing during construction.
- 4.6 To facilitate the creation of an access point, the loss of approximately 95m of hedgerow will be required on the western Site boundary. This will be mitigated through additional planting of hedgerows throughout the Proposed Scheme and the extension of the existing woodland in the north.
- 4.7 The topography of Parcel A is generally flat but ranging from 148m above ordnance datum (AOD) at its western boundary to 144m AOD in the southeast. Topography at Parcel B slopes from 144m AOD in the west down to 140m AOD in the east towards a valley system.
- 4.8 To obtain appropriate development plateau levels in Parcel A there will be both areas where levels will reduce (areas of cut) and areas where level will increase (area of fill). These are not anticipated to exceed a 2m increase/decrease when compared to existing ground levels. A cut and fill balance will be broadly achieved across the Site and there is no significant import or export of material required.
- 4.9 Given the historic use of the Site for agricultural purposes, the presence of contamination within the Site is not considered likely or minimal at most and as such remedial activities are not considered necessary. Nonetheless, should any contamination be encountered, a Remediation Strategy will be prepared and submitted to CDC for approval and all necessary steps will be undertaken to remediate

the land to required standards for end users. Any hazardous material will be handled and disposed of in line with Hazardous Waste Regulations<sup>26</sup>.

- 4.10 Information regarding the exact foundations has not been finalised<sup>27</sup> and will be subject to final building design and underlying ground conditions. Nevertheless, it is anticipated that Ground conditions are considered likely to be suitable for conventional strip/shallow foundations. As a worst case scenario, however, piled foundations may be required should either the proposed dwellings represent substantial loads or the strength of underlying soils is unsuitable for shallow foundations.
- 4.11 No overhead cables cross the Site and there are not anticipated to be any utilities or services underlying the Site as a result of its history as agricultural land. Although not expected to be encountered, if identified any utilities or services underlying the Site will be diverted or stopped in line with consultation with the relevant Distribution Network Operators.
- 4.12 Welfare facilities and other temporary infrastructure required (i.e. Site Compound, material laydown/storage etc.) will be set up at a designated location within the Site, as determined by the appointed contractor.
- 4.13 Construction working hours<sup>28</sup> would be 08:00 to 17:00 Monday to Friday; 08:00 to 12:30 Saturday; and it is anticipated that there will be no construction on Sundays or Bank Holidays.

### Development Principles

- 4.14 The Proposed Scheme is for up to 170 residential homes, new play facilities, public open space, landscaping and access.
- 4.15 The maximum height of buildings on-site will be up to 2.5 storeys (11.5m above floor levels (AFL)) for the proposed dwellings. Proposed dwellings will be developed at a net density of approximately 35 dwellings per hectare (dph).
- 4.16 One operational access point will serve the Site at the western Site boundary, onto the B4100 Warwick Road. Internal roads within the Site will lead off from this single access point.
- 4.17 Approximately 7.1ha of public open space will include approximately 4.94ha of Wildflower Meadow and Parkland, a Children and Youth Combined Natural Play Space in the west of Parcel B, Informal Sports Provision in the northwest of Parcel A, Mown Grass Trails linking the two Parcels to Gullicote Lane, woodland and Sustainable Drainage System (SuDS) features (see **Paragraph 2.20**). Play spaces have been

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<sup>26</sup> The Hazardous Waste (England and Wales) Regulations 2005, SI. 894.

<sup>27</sup> Subject to further intrusive ground investigations works to fully understand the structural capacities associated with the below ground geology.

<sup>28</sup> In accordance with the Cherwell District Council guidance: 'Construction Work Noise'. Available online: <https://www.cherwell.gov.uk/info/69/pollution/410/noise-nuisance/5>

positioned to create distance from access roads and the built form to improve their safety.

- 4.18 Landscaping and visual screening to be delivered as part of the Proposed Scheme includes the strengthening of the existing vegetation belt at the Site's northern and western boundaries, in addition to the planting of new woodland copses.
- 4.19 PRoW 191/6/30 will be retained in its current alignment as part of a green corridor and be linked to PRoW 239/7/20 by the proposed Mown Grass Trails.
- 4.20 A foul water pumping station is proposed to be constructed to the southern extent of Parcel A, from which the residential development is proposed to be set back by approximately 20m.
- 4.21 To be implemented as part of the Drainage Strategy<sup>29</sup>, SuDS features will respond to the Site's constraints/permeability and include an infiltration basin in Parcel B, fed by drainage swales from dwellings in Parcel A. Other SuDS have the potential to include rain gardens (flanking the primary access road) and permeable paving (used for secondary roads and driveways/parking areas), subject to detailed design. In line with local guidance, the Drainage Strategy will be for the 1% Annual Exceedance Probability (AEP) (1 in 100-year storm) with an uplift in rainfall intensity of 40% in order to mitigate the impacts of climate change, plus a 10% allowance for urban creep.
- 4.22 All future lighting installations will be designed and installed in line with relevant standards and guidance<sup>30</sup>.

## Timescales

- 4.23 Subject to gaining planning permission initial site works and construction is anticipated to commence in 2024 and be completed across a build period of approximately 4 years. The Proposed Scheme will be fully operational in approximately 2028.

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<sup>29</sup> Jubb Consulting Engineers Ltd. (2022). Flood Risk Assessment & Drainage Strategy.

<sup>30</sup> CIE 150: 2017 – Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations, 2nd Edition; ILP GN01 - Guidance Notes for the Reduction of Obtrusive Light 2020; BS 5489-1 : 2020 – Code of Practice for the Design of Road Lighting; BS EN 13201-2:2015 – Road Lighting – Part 2: Performance Requirements; BS EN 12464 – 2 2014 – Outdoor Work Spaces; SLL Guide to Limiting Obtrusive Light 2012; SLL Lighting Handbook 2009; LG 6 (CIBSE) – The Exterior Environment 2016; and ILP Guidance Note 08/18 Bats and Artificial Lighting in the UK.

## 5. Environmental Topics which are Not Significant

5.1 Based on information available to date, there are a number of environmental topics for which it is considered that further assessment as part of the EIA is not justified as no likely significant environmental effects in respect to these topics are anticipated to arise from the Proposed Scheme. These environmental topics will not be considered further within the EIA nor reported in the ES.

5.2 These environmental topics are:

- Agricultural land and soils;
- Ground conditions;
- Water resources, flood risk and drainage;
- Transport and access;
- Air quality;
- Noise and vibration;
- Biodiversity;
- Socio-economics and human health;
- Climate change;
- Obtrusive lighting;
- Microclimate (daylight, sunlight and overshadowing and wind microclimate);
- Waste and resources; and
- Risk of major accidents and/or disasters.

### **Agricultural Land and Soils**

#### **Loss of BMV agricultural land**

5.3 Government guidance<sup>31</sup> focusses on the protection of BMV agricultural land (Grades 1, 2 and 3a), with a 20ha loss of BMV set as a threshold where consultation must occur with Natural England.

5.4 A Soil and Agricultural Land Classification (ALC) survey of the Site undertaken by the FRCA in 1999 categorised the agricultural area of the Site (11.6ha) as comprising

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<sup>31</sup> Natural England (Updated 5 February 2021). Guide to assessing development proposals on agricultural land.

approximately 6.1ha of Grade 2 land (in the south/west) and approximately 5.5ha of Subgrade 3a land (in the north/east of the Site).

- 5.5 Whilst the 11.6ha of agricultural land lost from the construction of the Proposed Scheme would be entirely BMV land, the area of land is substantially below the 20ha consultation threshold set by Natural England. As such, the loss of BMV land is considered unlikely to be significant and will not be considered further within the EIA or reported in the ES.
- 5.6 It is, however, noted that Natural England also require consultation to be undertaken should 20ha of BMV land be lost across multiple phases of a single development. The Proposed Scheme does not include additional phases, although it is acknowledged that the cumulative area of agricultural land lost as a result of the Proposed Scheme and other developments in the local area has the potential to equal or exceed 20ha. To quantify this total loss, the assessment of cumulative effects undertaken as part of the ES will consider the cumulative loss of BMV land by the Proposed Scheme and Approved Projects listed in **Chapter 8**.

#### **Severance and disturbance to surrounding agricultural activities**

- 5.7 The loss of agricultural land within the Site would not affect the cultivation of the surrounding land and there are not anticipated to be severance effects arising from temporary construction activities or from the operational Proposed Scheme. It is assumed that the generation of dust, which can affect arable crops and livestock, will be appropriately managed through the implementation of dust mitigation measures which will be included with the CEMP and the scope of which will be informed by the Institute of Air Quality Management (IAQM) guidance<sup>32</sup> (see Air Quality below). These tertiary mitigation measures would be considered an integral part of the Proposed Scheme and considered as part of the Schedule of Mitigation.
- 5.8 As such, effects in relation to severance and disturbance to surrounding agricultural activities are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Soil compaction and degradation of soil quality**

- 5.9 During the construction stage, there is the potential for soil compaction and the degradation of soil quality due to the movement of plant and earthwork activities. However, it is assumed that movement of materials will be undertaken in line with a materials management plan (as part of a CEMP) which would set out measures to minimise adverse effects to soils in line with the guidance set out in the 'Construction Code of Practice for the Sustainable Use of Soils on Construction Sites'<sup>33</sup> and 'Good Practice Guidance for Handling Soils'<sup>34</sup>. In addition, as noted in for the appraisal of Air Quality below, the CEMP will contain dust and particulate matter management measures which will be informed by the IAQM guidance. Such measures will assist with minimising the degradation of soil quality. These tertiary mitigation measures would be

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<sup>32</sup> IAQM (2014) Guidance on the assessment of dust from demolition and construction (v1.1).

<sup>33</sup> Defra (2008) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.

<sup>34</sup> Defra (2000) Good Practice Guide for Handling Soils.

considered an integral part of the Proposed Scheme and considered as part of the Schedule of Mitigation.

- 5.10 As such, effects in relation to soil compaction and quality are unlikely to be significant and will not be considered further within the EIA or reported in ES.

#### **Loss of agricultural land holdings and impacts on farm businesses**

- 5.11 The Site is currently farmed through tenancy agreements. Both the landowner and tenant own/farm wider land holdings meaning that the loss of the Site is unlikely to impact their ongoing farm businesses.
- 5.12 As such, effects in relation to the loss of agricultural land holdings and impacts on farm businesses are unlikely to be significant and will not be considered further within the EIA or reported in ES.

#### **Ground Conditions**

##### **Exposure/contact with contamination during construction and operation**

- 5.13 The earthwork and excavation activities during construction could potentially expose construction workers (through direct contact/ingestion and inhalation) and existing residents (from dust emissions) to contaminated material associated with agricultural made ground.
- 5.14 The Phase 1 Desk Study Report (**Appendix 9**) indicates that prior to the undertaking of intrusive investigations there is the potential for organic contaminants associated with agricultural activities to be found within topsoil/agricultural made ground.
- 5.15 Should any made ground be identified for removal following intrusive investigations, measures to protect construction workers from exposure to it will be required of the appointed contractor under the Construction (Design and Management) Regulations 2015<sup>35</sup> and other health and safety legislation. Appropriate strategies/protocols will be put in place in line with relevant legislation. Measures will be incorporated into the CEMP, including the use of Personal Protective Equipment (PPE), the preparation of method statements and the provision of environmental awareness training.
- 5.16 Once the Proposed Scheme has been completed, the areas of built development within the Site will be covered predominantly with hardstanding and building slabs, which will break the plausible contamination linkages for future Site users (such as ingestion and dermal contact) in these areas. In addition, any contaminants encountered during the construction stage will be remediated in line with the requirements for the proposed end use. Clean cover layers will also be validated for chemical quality prior to re-use/use on-Site.
- 5.17 Therefore, effects related to exposure / contact with contamination are unlikely to be significant and will not be considered further within the EIA or reported within the ES.

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<sup>35</sup> Construction (Design and Management) Regulations 2015.

### **Release/migration of contamination to controlled waters during construction and operation**

- 5.18 During the construction stage, with the storage of fuel, oil and materials during periods of heavy rainfall, spillages could cause the release/vertical migration of contaminants to underlying groundwater.
- 5.19 To prevent contamination, all on-Site construction activities will be undertaken with the Construction (Design and Management) Regulations 2015 and best practice measures (e.g. tool-box talks, PPE, and method statements, as required) led by the appointed contractor. Guidance will also be adhered to, such as Guidelines for Pollution Prevention (GPP) 2: above ground oil storage tanks<sup>36</sup> and GPP 5: Works and maintenance in or near water<sup>37</sup> (whilst these have been withdrawn, they are widely recognised as accepted best/good practice).
- 5.20 There is also a potential for contamination to be mobilised during the formation of foundations and migration vertically into the underlying aquifers. In addition to adherence to the above measures, a temporary drainage strategy will be implemented, which will reduce the risk of mobilisation of contamination into the underlying groundwater body in the proximity of the Site via overland flow/run-off during construction.
- 5.21 Should piled foundations be required the method of construction will be carefully selected to ensure that the migration of contamination into sensitive resources is kept to a minimum. Such activities will be undertaken in line with guidance, such as the Environment Agency's 'Piling and penetrative ground improvement methods on land affected by contamination: guidance on pollution prevention'<sup>38</sup>. This will be led by the appointed contractor. Where required a piling risk assessment will be completed to understand the risk of piling activities associated with impacted soils and receptors.
- 5.22 During the operational stage of the Proposed Scheme, is there a potential for localised spillages of fuel. Contaminants from fuel spillages are likely to occur on areas of hardstanding (e.g. car parking areas). These areas will be subject to a controlled drainage scheme as part of the drainage strategy, which will include necessary pollution prevention measures including oil interceptors in line with guidance, such as Pollution Prevention Guidelines 3: Use and design of oil separators in surface water drainage systems<sup>39</sup>. This will prevent the release / migration of contamination to controlled waters during operation.
- 5.23 Therefore, effects related to the release / migration of contamination to controlled waters are unlikely to be significant and will not be considered further within the EIA or reported within the ES.

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<sup>36</sup> Guidelines for Pollution Prevention (GPP) 2: above ground oil storage tanks.

<sup>37</sup> GPP 5: Works and maintenance in or near water.

<sup>38</sup> Environment Agency's 'Piling and penetrative ground improvement methods on land affected by contamination: guidance on pollution prevention'.

<sup>39</sup> Pollution Prevention Guidelines 3: Use and design of oil separators in surface water drainage systems

### **Potential risk of ground gases during construction and operation**

- 5.24 The Site lies within a higher probability radon area. In addition, in the absence of ground gas monitoring there is a moderate/low risk of ground gases from backfilled quarries to affect the Site.
- 5.25 During construction, the potential risks from ground gases will be dealt with by the appointed contractor in accordance with health and safety legislation, including the Confined Space Regulations<sup>40</sup>. The CEMP will contain appropriate measures, such as the use of appropriate PPE, monitoring equipment, safe-entry procedures and use of Respiratory Protective Equipment (RPE) where required, to mitigate the potential risk of exposure to hazardous gas and vapours and/or depleted oxygen levels.
- 5.26 Current Building Control Regulations will require radon protection measures (in accordance with BRE211<sup>41</sup> to be installed. These will include the use of 1200 gauge polyethylene radon resistant Damp Proof Membrane/Damp Proof Course, with suspended floors (with sub-floor ventilation) or ground bearing floor slabs with a radon 'sump', continuous membrane across cavity walls, cavity tray in external walls and fully sealed service entries / exits.
- 5.27 All new buildings will be designed in line with CIRIA 'Assessing risks posed by hazardous ground gases to buildings' (C665)<sup>42</sup> and British Standard 8485 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'. In addition, testing and verification of such systems will be completed in line with C735<sup>43</sup>.
- 5.28 Any potential risks associated with ground gas will be appropriately mitigated prior to the completion of the construction stage through the implementation of the above, informed by ground gas monitoring.
- 5.29 Therefore, effects related to ground gases are unlikely to be significant and will not be considered further within the EIA or reported within the ES.

### **Potential risks associated with the presence of unstable and compressible ground during construction and operation**

- 5.30 Based on the Phase 1 Desk Study Report (**Appendix 9**), shallow foundations on the underlying Marlstone Rock Formation and Dyrham Formation will likely be suitable across the majority of the Site, dependent on the depth to underlying bedrock and strength of subsurface soils, to be confirmed via intrusive investigations.
- 5.31 Following intrusive investigations and the detailed design process, should the proposed dwellings prove to be heavy-loading or the underlying soils deemed not suitable for supporting these loads, piled foundations will be required as a worst case scenario.

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<sup>40</sup> Confined Space Regulations.

<sup>41</sup> BRE (2015) Report BR211 Radon: Guidance on protective measures for new dwellings.

<sup>42</sup> CIRIA (2007) C665 Assessing risks posed by hazardous ground gases to buildings.

<sup>43</sup> CIRIA (2014) C735 Good practice on the testing and verification of protection systems for buildings against hazardous ground gases.



- 5.32 Excavations are likely to be feasible using standard mechanical plant with toothed buckets, although should deeper excavations be required, a hydraulic breaker may be required to excavate bedrock to the desired depth.
- 5.33 All earthworks will be designed in accordance with guidance in CIRIA report C572: Treated ground engineering properties and performance<sup>44</sup>, BRE document FB75: Building on Fill - Geotechnical Aspects<sup>45</sup> and British Standard 6031:2009: Code of Practice for Earthworks<sup>46</sup>. As such, ground remediation techniques will be implemented to negate any likely significant effects.
- 5.34 Therefore, effects related to the presence of unstable and compressible ground are unlikely to be significant and will not be considered further within the EIA or reported within the ES.

## **Water Resources, Flood Risk and Drainage**

### **Changes to flood risk during construction and operation**

- 5.35 Flooding events, if significant enough, have the potential to harm construction workers on-Site, particularly if they are working in excavations which have the potential to fill with water, causing temporary or permanent health and safety risks (e.g. injuries).
- 5.36 Construction activities also have the potential to result in increased localised flood risk due to earthworks and excavation activities changing overland run-off routes. In addition, any increases in surface water flows from the Site will lead to changes in run-off volumes and rates discharged to public sewers. Where surface water rates exceed the capacity of the drainage infrastructure, overland flows onto the surrounding road network will be generated, potentially increasing flood risk to surrounding receptors.
- 5.37 Changes to flood risks during the construction stage will be managed through the CEMP and appropriate construction stage drainage strategies, using either existing, temporary or permanent drainage infrastructure and take account of industry best practice and guidance (e.g. British Standard 8582:2013 – Code of practice for surface water management for development sites<sup>47</sup>).
- 5.38 The Proposed Scheme will introduce more impermeable surfaces to the Site, however it will include new surface water drainage infrastructure that will seek to control the discharge from the Site to the equivalent greenfield rate. The Proposed Scheme's Surface Water Drainage Strategy and associated SuDS will include provision for attenuation to modern standards (the 1 in 100-year storm event including a 40% allowance for future climate change) reducing the risk of exceedance overland flows affecting neighbouring developments, and the future Site users.
- 5.39 Subject to detailed design, the SuDS of the Proposed Scheme include an infiltration basin in Parcel B, fed by drainage swales from dwellings in Parcel A, in addition to rain

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<sup>44</sup> CIRIA report C572: Treated ground engineering properties and performance.

<sup>45</sup> BRE document FB75: Building on Fill - Geotechnical Aspects.

<sup>46</sup> British Standard 6031:2009: Code of Practice for Earthworks.

<sup>47</sup> British Standard 8582:2013 – Code of practice for surface water management for development sites.

gardens (flanking the primary access road) and permeable paving (used for secondary roads and driveways/parking areas).

- 5.40 In conjunction with the above, resilience measures, such as the setting of suitable building levels to avoid water ingress and directing overland flows away from buildings to designated areas where some ponding may occur, will be incorporated within the Proposed Scheme.
- 5.41 Therefore, changes in flood risk are not considered significant and will not be considered further within the EIA or reported in the ES.

#### **Changes to surface and ground water quality during construction and operation**

- 5.42 Construction activities have the potential to result in cement and concrete dusts being mobilised in surface water run-off and silt laden run-off arising from on-Site construction activities, resulting in the sedimentation and pollution of watercourses.
- 5.43 It is anticipated that such effects will be controlled through the implementation of a CEMP. The CEMP will contain measures set out within the Pollution Prevention Guidance and CIRIA 'Control of water pollution from construction sites'<sup>48</sup> and include specific working methods/practices and monitoring requirements to minimise the risk of detrimental effects on water quality including:
- Washing down or equipment cleaning associated with concrete or cementing processes and provision of facilities to remove sediment prior to disposal;
  - Use of sediment traps on surface water drains;
  - The safe storage of materials and fuels and oils;
  - Wheel washing facilities;
  - Screening stockpiles and materials;
  - Use of impermeable materials to prevent ingress into the ground;
  - Provision of treatment facilities for runoff from construction areas;
  - Provision of treatment facilities to runoff from construction areas; and
  - Regular sweeping to remove loose sediments.
- 5.44 Once completed, the Proposed Scheme will include new contained surface water drainage infrastructure that will seek to prevent uncontrolled surface water run-off. The Proposed Scheme will include required treatment trains and SuDS will be assessed through the design process and in accordance with the hierarchy of drainage. Appropriate water treatment will be inherent in the drainage design through the

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<sup>48</sup> CIRIA (2001) Control of water pollution from construction sites. Guidance for consultants and contractors (C532).

incorporation of SuDS features and pollution prevention measures (e.g. interceptors). Such measures will avoid reduction in the quality of surface and ground water bodies.

- 5.45 Therefore, changes to surface and ground water quality as a result of the Proposed Scheme is not considered significant and will not be considered further within the EIA or reported in the ES.

#### **Changes to groundwater recharge and water balance during construction and operation**

- 5.46 As noted in **Chapter 3**, the Site is not located within a Groundwater Source Protection Zone and is considered to be at a very low risk of groundwater flooding.
- 5.47 There is the potential for the Proposed Scheme to alter the flow of groundwater through the expansion of existing basements and associated temporary de-watering measures. However, initial results of soakaway testing to inform the FRA and Drainage Strategy (**Appendix 7**) indicates that infiltration methods (e.g. permeable paving and the infiltration basin) are expected to be suitable SuDS features that will not increase the risk of flooding from groundwater sources.
- 5.48 Appropriate controls / management measures will be also implemented during construction and as part of the design, such as adherence to CIRIA C750 Groundwater control - design and practice. Any piling works (if required) would be undertaken in line with Environment Agency's Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention.
- 5.49 Therefore, changes to groundwater recharge and water balance are not considered to be significant and will not be considered further within the EIA or reported within the ES.

#### **Changes to foul water quantity during construction and operation**

- 5.50 Wastewater generation on construction sites includes effluent from sanitary facilities provided on-Site and sediment laden water from washing down and wheel wash facilities. Compared to the current land uses within the Site, the construction stage is expected to have a limited impact on the public foul water sewers associated with foul flows arising from such construction works (with limited foul flows associated with sanitary facilities collected for offsite disposal).
- 5.51 Once completed, the future Site users will potentially increase the load on the local public foul water sewer network and treatment facilities. A new point of connection to the existing Thames Water foul drainage network on Warwick Road will be made as part of the Proposed Scheme. Due to the topography of the Site and surrounding area, a foul water pumping station will be installed at the southern boundary of Parcel A to transport foul flows until a gravity connection can be achieved to the public sewer.
- 5.52 As described in the FRA and Drainage Strategy (**Appendix 7**), consultation with Thames Water has confirmed that peak foul discharge rates will increase to approximately 7.9l/s as a result of the Proposed Scheme, however there has been deemed to be sufficient capacity to accommodate these additional flows.
- 5.53 Therefore, changes in foul water quantity are not considered to be significant and will not be considered further within the EIA or reported in the ES.

### **Increase in potable water demand and supplies during construction and operation**

- 5.54 Processes during the construction stage of the Proposed Scheme, which may require water supply, include sanitary facilities for construction workers and water supply for wheel washing and washing down of construction areas. This will naturally increase the demand on potable water supplies.
- 5.55 Thames Water will be consulted prior to construction to assess the impact of this increase on the water supply surrounding the Site and ensure that the supplies can be met without creating a noticeable effect at local residents or at source.
- 5.56 The environmental effects of any increase in demand for potable water will be controlled through the consents or permits associated with / available to Thames Water, where consents or permits are only issued where environmental effects are suitably controlled. Should any upgrades to the existing public potable network be required, these will be undertaken by Thames Water.
- 5.57 Whilst new and upgraded infrastructure near to the Site may be required to deal with the additional demand from the operational Proposed Scheme, the assessment of environmental effects associated with the implementation of the new infrastructure does not form part of the Proposed Scheme (unless it is within the Application boundary, whereby it will be assessed as part of the Proposed Scheme).
- 5.58 Therefore, changes in potable water demand are not considered to be significant and will not be considered further within the EIA or reported in the ES.

### **Transport and Access**

#### **Severance during construction and operation**

- 5.59 Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. The IEA guidelines<sup>49</sup> point to thresholds related to 30% changes in traffic flow being likely to produce a slight change in severance, with moderate and substantial changes occurring at 60% and 90% respectively.
- 5.60 The Proposed Scheme will result in a maximum 19.7% increase on the B4100 Warwick Road during the weekday PM peak hour period (17:00 – 18:00) when compared to the results of the Automatic Traffic Count (ATC) survey undertaken by the section proposed to provide access to the Site. Details of the traffic count and vehicle trip generation are provided in **Appendix 10**. This percentage increase is below the thresholds identified by the IEA guidance to produce a slight change.
- 5.61 In addition to this, it is worth noting that no footway or crossing facilities are present along the section of the B4100 Warwick Road bounding the Site and therefore there is no population affected by the Proposed Scheme in terms of pedestrian access to local facilities or catchment areas as defined by the severance effect.

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<sup>49</sup> IEA Guidelines for the Environmental Assessment of Road Traffic (1993).

5.62 Therefore, effects related to severance during construction and operation are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Driver delay during construction and operation**

5.63 Delay to drivers generally occur at junctions where opposing vehicle manoeuvres are undertaken with vehicles having to give or receive priority depending upon the type of junction arrangement. The IEA guidelines indicate that the delays are only likely to be significant when the existing highway network is already running at or close to its theoretical design capacity.

5.64 A detailed assessment of the driver delay effect caused by the Proposed Scheme has been undertaken and is included in the **Transport Assessment (TA)** prepared in support of the Application. This is based on the future baseline conditions with and without the proposed development, which provide a worst case scenario in terms of design capacity in the study area identified.

5.65 The results from the junction capacity assessments undertaken are shown in **Appendix 10**. These show that all the junctions operate with wide capacity and with minimal driver delay. A summary of these results is shown below:

- Junction 1: Warwick Road / Nickling Road Junction:
  - Maximum RFC: 0.21 (increase of 0.01 by the Proposed Scheme on this approach); and
  - Maximum increase in driver delay: 0.55 seconds on this approach.
- Junction 2: Warwick Road / Dukes Meadow Drive Roundabout Junction:
  - Maximum RFC: 0.66 (increase of 0.01 by the Proposed Scheme on this approach); and
  - Maximum increase in driver delay: 0.30 seconds on this approach.
- Junction 3: Warwick Road/Stratford Road Signalised Junction:
  - Maximum Degree of Saturation: 0.65 (increase of 0.02 by Proposed Scheme on this approach); and
  - Increase in Total Delay Over All Lanes: 0.43 PCUs/Hr at the junction.
- Junction 4: Warwick Road/Cromwell Road/Ruscote Avenue Twin Roundabout Junctions:
  - Maximum RFC: 0.59 (increase of 0.00 by the Proposed Scheme on this approach); and
  - Maximum increase in driver delay: 0.10 seconds on this approach.
- Junction 5: Warwick Road / Drayton Lodge Farmhouse Access:

- Maximum RFC: 0.01 (increase of 0.00 by the Proposed Scheme on this approach); and
- Maximum increase in driver delay: 0.24 seconds on this approach.
- Junction 6: Warwick Road / Site Access Priority Junction:
  - Maximum RFC: 0.10 with the Proposed Scheme; and
  - Maximum driver delay: 9.48 seconds with the Proposed Scheme.

5.66 It is clear from these numbers that all the junctions will keep operating well within capacity with and without the Proposed Scheme and that the increase in driver delay caused by the Proposed Scheme will not be significant.

5.67 Therefore, effects related to driver delay during construction and operation are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Pedestrian delay during construction and operation**

5.68 The delay incurred by a pedestrian is generally a direct consequence of their ability to cross roads. The IEA guidelines do not recommend establishing a quantitative threshold to assess the level of, and changes in, pedestrian delay, but state that professional judgement should be used to assess this in this instance.

5.69 There are no footways on either side of the B4100 Warwick Road by the section bounding the Site. No pedestrian trips are likely to take place at this section of the road. It is proposed to develop a new shared footway/cycleway bounding the Site to the west which will be connected to the new pedestrian facilities provided by the consented residential developments to the south and which will include the provision of a new Toucan crossing.

5.70 Therefore, effects related to pedestrian delay during construction and operation are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Pedestrian amenity during construction and operation**

5.71 This effect is considered where the increase in transport trips associated with the Proposed Scheme could cause a change to the perceived pedestrian amenity through increased noise, pollution or congestion that may detract from the existing environment. It is noted that the IEA suggests that a tentative threshold for judging the significance of changes in pedestrian amenity would be where traffic flow (or its lorry component) is halved or doubled.

5.72 The Proposed Scheme will result in a maximum 19.7% increase on the B4100 Warwick Road during the weekday PM peak hour period (17:00 – 18:00) when compared to the results of the ATC traffic count undertaken by the section proposed to provide access to the Site.

- 5.73 The nature of the Proposed Scheme means that, in terms of vehicle traffic composition, the percentage of large vehicles will be minimal. The vehicle trip generation shows that the Proposed Scheme would result in an increase of 0.68 large vehicles on average during the AM peak hour (08:00 – 09:00 hours) and 0.34 large vehicles during the PM peak hour (17:00 – 18:00). The increase in the total percentage of large vehicle traffic travelling on the B4100 Warwick Road by the Proposed Scheme to the Site will therefore be negligible at both peak periods.
- 5.74 Details of the traffic count and vehicle trip generation are provided in **Appendix 10** to this Scoping Note.
- 5.75 Further to this, it is worth noting the lack of footways on both sides of the B4100 Warwick Road on the section bounding the Site and where no pedestrian movements are likely to take place along this section of the carriageway (there are alternative pedestrian routes to the east of the Site).
- 5.76 The resulting percentage increases in total vehicles and large vehicle flows are considerably below the thresholds identified by the IEA guidance to produce a significant change in pedestrian amenity.
- 5.77 Therefore, effects related to pedestrian amenity during construction and operation are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Fear and intimidation during construction and operation**

- 5.78 The scale of fear and intimidation experienced by pedestrians 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 as well as factors such as the speed and size of vehicles.
- 5.79 At present, there are no footways along the B4100 Warwick Road on the section bounding the Site. The Proposed Scheme will provide a wide shared pedestrian/cycleway which is likely to result in a beneficial effect on fear and intimidation.
- 5.80 It has been shown that the Proposed Scheme will result in total traffic flows and heavy vehicle flows on the B4100 Warwick Road which are considered not significant. Furthermore, as part of the Proposed Scheme, it is proposed to reduce the maximum vehicle speed limit on the section of the B4100 Warwick Road bounding the Site from the current national speed limit to 40mph. This will also result in a beneficial impact when compared to the existing situation.
- 5.81 Whilst beneficial, effects related to fear and intimidation during construction and operation are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Accidents and Safety**

- 5.82 Based on the relevant EIA guidance, a Personal Injury Collision (PIC) study has been carried out to assess the potential significance of accident risks due to the potential

change in the current composition, volume and speed of the traffic as well as pedestrian activity along the adjoining highway network by the Proposed Scheme.

- 5.83 In this sense, a full review of PIC data has been undertaken and is shown within **Appendix 10** and is also included within the **TA**. This has been carried out for a full five-year period and for a study area surrounding the Site for at least 1km on each direction on the main routes used by the development traffic using the latest information available.
- 5.84 The PIC data review shows that a total of only eight collisions took place during this 5-year period along the wide area assessed. From this, only two collisions took place to the south of the Site and towards Banbury, where most of the vehicle traffic is expected to travel to and from. It is therefore considered that, given the overall dispersed nature of accidents, both in terms of geographical location and timescale, it is reasonable to conclude that the highway network surrounding the Site does not include any geometric features that can be specifically linked to recorded collisions. The incidents were mostly related to driver error or misjudgement and not due to the highway infrastructure or alignment of the local highway network.
- 5.85 It is therefore considered that the potential increase in vehicle traffic generated by the Proposed Scheme on the public highway network during construction and operation are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

## **Air Quality**

### **Nuisance and disturbance as a result of dust from construction activities**

- 5.86 Potential dust impacts arising from construction activities have been assessed qualitatively, using the approach defined in Guidance on the Assessment of Dust from Demolition and Construction published by the Institute of Air Quality Management (IAQM)<sup>50</sup>.
- 5.87 The IAQM construction dust guidance assessment methodology provides a framework to establish the unmitigated risk of construction dust impacts associated with a development at both human and ecological receptors.
- 5.88 This risk is based upon an empirical relationship between the anticipated dust emission magnitude associated with four activities (demolition, earthworks, construction and trackout) and the sensitivity of the surrounding area with respect to:
- Annoyance due to dust soiling;
  - The risk of health effects due to an increase in exposure to PM<sub>10</sub>; and
  - Harm to ecological receptors.

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<sup>50</sup> IAQM, Guidance on the Assessment Dust from Demolition and Construction, v1.1 2016.



- 5.89 Following determination of these risks, proportionate mitigation is recommended, whereby through effective application, residual effects are considered to be 'not significant'.
- 5.90 Anticipated construction activities are found to be at worst 'Low Risk' in relation to dust soiling effects on people and property and in relation to human health impacts. Potential dust effects during the construction stage are considered to be temporary in nature and may only arise at particular times (i.e. certain activities and/or meteorological conditions).
- 5.91 Commensurate with the established dust risks, mitigation measures, as identified by IAQM guidance have been recommended to ensure that any potential impacts arising from the construction stage of the Proposed Scheme are reduced and, where possible, removed.
- 5.92 In accordance with IAQM guidance, providing effective mitigation measures are implemented as part of a CEMP, provided in the Preliminary EMP (**Appendix 3**), construction dust effects are unlikely to be significant and therefore they are not considered further within the EIA or reported in the ES.

**Changes to local air quality as a result of emissions from construction traffic generated by the Proposed Scheme**

- 5.93 Details regarding the extent of vehicle trips generated by construction activities are not known. This is typical of the approach adopted in support of similar residential developments.
- 5.94 To inform whether further (detailed) assessment in relation to road traffic effects is required, screening thresholds provided with the Environmental Protection UK (EPUK) and IAQM Land-Use Planning & Development Control: Planning for Air Quality<sup>51</sup> guidance are used. These thresholds relate to changes of light duty vehicles (LDV) and heavy duty vehicles (HDV) on the local road network, as 24-hour annual average daily traffic (AADT).
- 5.95 The EPUK and IAQM prescribed screening thresholds of relevance to the Site are as follows:
- Within / adjacent to an AQMA:
    - More than 100 LDV AADT trips; and / or
    - More than 25 HDV AADT trips.
  - Outside of an AQMA:
    - More than 500 LDV AADT trips; and / or
    - More than 100 HDV AADT trips.

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<sup>51</sup> EPUK and IAQM, Land-Use Planning and Development Control: Planning for Air Quality, v1.2 2017.

- 5.96 Anticipated construction activities are not expected to result in the generation of 100 HDV and / or 100 LDV AADT trips (specific to a development outside of an AQMA).
- 5.97 It is acknowledged that the two AQMAs are located >2.5km from the Site within Banbury, where lower EPUK & IAQM prescribed screenings thresholds apply (25 HDV and / or 100 LDV as AADT). Despite this, the majority of construction vehicles are not anticipated to route through these AQMAs via central Banbury. Furthermore, given the location, the extent of construction traffic trips are expected to reduce with distance from the Site via distribution – and fall below the EPUK and IAQM screening thresholds.
- 5.98 Despite the absence of supporting traffic data, construction activities are not likely to result in a change in vehicle flows above the EPUK and IAQM screening thresholds.
- 5.99 Furthermore, given the short-term nature of the construction stage, changes to air quality as a result of emissions from construction traffic are unlikely to be significant and therefore, they are not considered further within the EIA or reported in the ES.

**Changes to local air quality as a result of emissions from on-Site operational combustion sources**

- 5.100 No on-Site combustion emissions (e.g. associated with a centralised energy centre) will be introduced as a result of the Proposed Scheme. Therefore, emissions associated with any on-site energy generation during the operational phase have not been considered further within the EIA or reported in the ES.

**Changes to local air quality as a result of emissions from operational traffic generated by the Proposed Scheme**

- 5.101 In order to appropriately assess road traffic impacts associated with the operation of the Proposed Scheme on existing sensitive human receptors, as well as the suitability of the Site for residential purposes, detailed dispersion modelling was undertaken in support of the Air Quality Assessment (**Appendix 5**).
- 5.102 The modelling assessment utilised the Cambridge Environmental Research Consultants (CERC) ADMS-Roads v5.0.0.1 dispersion model, focussing on concentrations of NO<sub>2</sub> and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) for the following scenarios:
- 2019 Base Case (2019 BC) – Base flows for the year 2019;
  - 2027 Future Year Scenarios – Assumed year of opening:
    - 2027 Do Minimum (2027 DM) – Without development flows for the assumed year of opening (2027), inclusive of any relevant committed development flows; and
    - 2027 Do Something (2027 DS) – With development flows for the assumed year of opening (2027), inclusive of any relevant committed development flows.

- 5.103 The modelling assessment was undertaken in accordance with Defra's LAQM Technical Guidance<sup>52</sup> (LAQM.TG(22)). The dispersion model was verified with the use of the latest representative monitoring data of relevance to the Site, as collected by CDC – to ensure local sensitivities are appropriately accounted for.
- 5.104 Significance criteria provided with the EPUK and IAQM guidance document was used.
- 5.105 Road traffic emissions were sourced from the latest Emission Factor Toolkit (EFT) (v11.0) published by Defra. Background concentrations were sourced from the latest Defra background maps (2018-reference year) for the 1km grid squares across the modelled domain.
- 5.106 The impact of the Proposed Scheme on annual mean NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> at all assessed existing receptors was considered to be 'negligible' in the Air Quality Assessment (**Appendix 5**). Unmitigated effects associated with annual mean NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations at all assessed receptor locations were considered to be 'not significant' in accordance with EPUK & IAQM guidance.
- 5.107 The maximum predicted annual mean concentration for the opening year of the Proposed Scheme (2027 DS) at all new receptors introduced by the Proposed Scheme were 'well below' the annual mean AQAL for all assessed pollutants (NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>). As such, the Site is considered to be suitable for the Proposed Scheme.
- 5.108 Furthermore, modelled concentrations at all considered receptors are below the short-term AQALs. Effects associated with likely exposure to short-term averaged pollutant concentrations at all assessed receptor locations are considered to be 'not significant'.
- 5.109 Notwithstanding the above, in consideration of the potential uncertainty in predictions of future year pollutants, as well as the current national and local sensitivities seen in response to elevated roadside NO<sub>2</sub> concentrations, an additional sensitivity assessment was undertaken within the Air Quality Assessment (**Appendix 5**). This assessment utilised 2019 as the proposed year of opening for the Proposed Scheme. This theoretically assumes that there is no improvement in emission factors or background concentrations for the pollutants considered (up to and during 2027) relative to the verified/baseline year (2019). Outcomes of the modelling assessment remain unchanged with consideration of these scenarios, despite the overly assessment methodology applied.
- 5.110 Therefore, effects related to changes to local air quality as a result of emissions from operational traffic generated by the Proposed Scheme are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

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<sup>52</sup> Local Air Quality Management Technical Guidance 22, Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland. August 2022.

## Noise and Vibration

### Noise and vibration on existing sensitive receptors arising from on-Site construction activities on the Site

- 5.111 A Construction Environmental Management Plan (CEMP) will be developed and implemented by the appointed contractor(s) (and sub-contractors). The CEMP will set out all relevant environmental management measures and controls, encompassing noise and vibration. All construction activities will be in accordance with the Consideration Constructors Scheme.
- 5.112 According to acceptable working hours in CDC, construction will take place within the weekday daytime hours of 08:00 – 17:00 Monday to Friday and 08:00 – 12:30 Saturday. There will be no construction on Sundays or Bank Holidays. Any works outside these times will be under exceptional circumstances and will be agreed with CDC in advance.
- 5.113 The proposed key activities during the construction stage have been reviewed based on the standards in size and scale for a residential development of this Site. It is in the realms of 'normal' housebuilding practices and so considered to be not significant in effect, where best practicable means approaches to noise and/or vibration control have been applied.
- 5.114 Information regarding the exact foundations has not been finalised<sup>53</sup> and will be subject to final building design and underlying ground conditions. Nevertheless, it is anticipated that ground conditions are considered likely to be suitable for conventional strip/shallow foundations. As a worst case scenario, however, piled foundations may be required should either the proposed dwellings represent substantial loads or the strength of underlying soils is unsuitable for shallow foundations.
- 5.115 It has been anticipated that construction operations for building foundations would not generate significant amounts of noise or vibration, given that activities such as percussive piling would not be necessary. Therefore, it is proposed that both noise and vibration effects resulting from construction activities could be scoped out of the assessment.
- 5.116 Through the application of the identified mitigation, disturbance associated with noise generated by temporary on-Site activities is considered unlikely to be significant and will not be considered further within the EIA or reported in the ES.

### Construction road traffic noise

- 5.117 The construction stage of the Proposed Scheme will result in additional vehicular movements on the local road network because of movement of plant/machinery, workers (including subcontractors) and deliveries/collections. The number of movements will be less than that during operation. It has been concluded within the TA<sup>54</sup> that the Proposed Scheme will have a minimal impact on the highway network near the Site during the construction stage.

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<sup>53</sup> Subject to further intrusive ground investigations works to fully understand the structural capacities associated with the below ground geology.

<sup>54</sup> Jubb Consulting Engineers Ltd. (2022). Report reference 17279-TA-01/Version 1.

5.118 To reduce adverse impacts associated with construction traffic, the CEMP will include the traffic management measures provided in **Appendix 3**. Traffic management measures to cover areas such as management and proposed routing of construction related traffic, delivery of large oversized plant/machinery and vehicular parking. With the adoption of identified best practice measures in **Appendix 3** in conjunction with the expected relatively low levels of construction traffic, effects are considered unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Suitability of the Site for residential use due to road traffic noise**

5.119 The Proposed Scheme includes sensitive residential uses that are susceptible to road noise impacts. The Noise Impact Assessment prepared in support of the Application considered road traffic noise on the B4100 Warwick Road to be the dominant noise source for the Site. Without mitigation, internal noise levels of dwellings in the west of Parcel A were predicted to exceed daytime and night-time recommended suitability criteria.

5.120 The initial site noise risk assessment has categorised the proposed residential development as being at a 'medium risk' of adverse effects from noise were no subsequent mitigation to be included as part of the development. This is based upon the measurements recorded along the western Site boundary and according to professional practice guidance<sup>55</sup>. This has otherwise been reviewed as 'low risk' in the case of dwellings in the north and south of the Site.

5.121 The Noise Impact Assessment concluded that with the implementation of suitable façade insulation, internal sound levels across the Proposed Scheme can be attenuated to achieve the requisite internal ambient noise level criteria. Details of example glazing and ventilation have been provided within the Preliminary EMP (**Appendix 3**).

5.122 Within private gardens of the Proposed Scheme, the recommended guidelines<sup>56</sup> have been established to provide suitably quiet and tranquil outdoor spaces. Noise levels will not be above the recommended range of 50 – 55 dB  $L_{Aeq, 16hr}$ . No further mitigation or development designs would need to be considered as external areas of the Proposed Scheme comply with the guideline limits of BS8233.

5.123 There have been no significant sources of vibration noted in the surrounding area or around the Site. The Proposed Scheme would not generate any significant vibration once operational due to its residential use.

5.124 With the adoption of these mitigation measures (**Appendix 3**), disturbance to future residents of the Proposed Scheme due to noise or vibration generated by existing off-Site sources is considered unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Suitability of the Site for residential use due to commercial and industrial noise**

5.125 From a review of the audio data collected at the north-eastern corner of the Site, along with the on-Site subjective impression of the Site and its surroundings, it has been

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<sup>55</sup> ProPG: Planning & Noise. Professional Practice Guidance on Planning & Noise. New Residential Development, May 2017.

<sup>56</sup> BS8233:2014 Guidance on sound insulation and noise reduction for buildings.

concluded that road noise dominates the noise climate at Site. Commercial noise and activities, specifically plant and activity noises were neither observed nor could be measured whilst on-Site. As such, it has not been deemed necessary to carry out a BS 4142<sup>57</sup> assessment in the review of Agent of Change against NPPF<sup>58</sup> paragraph 187 and in following of professional planning practice guidance.

- 5.126 The Proposed Scheme has been designed to provide separation between the proposed dwellings and the existing farming activities and movements, furthermore the proposed external amenity areas will be screened from this noise source by the proposed dwellings.
- 5.127 As above, glazing and ventilation requirements have been identified to attenuate road traffic sound levels, being the most influential noise source at the Site. It has been considered that, with the installation of the aforementioned mitigation measures (**Appendix 3**), residents of the Proposed Scheme will be suitably protected against any potential for commercial noise impact.
- 5.128 It has been considered that the Proposed Scheme would not result in *'unreasonable restrictions'*<sup>59</sup> being placed on existing businesses, and that a more detailed assessment would not be required. As such, effects related to the suitability of the Site due to commercial and industrial noise are considered unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Road traffic noise during operation**

- 5.129 The TA modelled the traffic generated by the Proposed Scheme using data scaled from the Banbury Strategic Model (BSM) for the neighbouring consented Drayton Lodge Farmhouse development. This modelling found that during peak AM (08:00 – 09:00) and peak PM (17:00 – 18:00) times a total of 91 and 101 two-way vehicle trips would be made respectively, which is equivalent to less than 2 vehicles per minute. The TA concluded that *'such an increase in traffic flow is not considered material and will fall within the bounds of normal daily fluctuation in traffic flows on the nearby highway network.'*
- 5.130 The TA further explained existing average weekday total movements during peak AM (08:00 – 09:00) and peak PM (17:00 – 18:00) times, of 529 and 623 respectively. With the introduction of operational traffic flows of the Proposed Scheme, the highest (peak) levels of transport flow onto the network would cause less than a 25% increase, or less than 1 dB change when compared with the baseline. In following of DMRB<sup>60</sup>, this would lie below the lowest-perceptible long- or short-term noise change as not be significant on the adjacent highway network.
- 5.131 The introduction of these traffic flows was also analysed in relation to junction capacities. The TA concluded that the Proposed Scheme *'will have a limited and*

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<sup>57</sup> BS4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound.

<sup>58</sup> National Planning Policy Framework, 20 July 2021.

<sup>59</sup> National Planning Policy Framework paragraph 187.

<sup>60</sup> Design Manual for Roads and Bridges, 31 March 2020.

*acceptable impact on all the junctions assessed. Furthermore, the proposed main access is also shown to operate within capacity in all assessed scenarios.'*

- 5.132 With consideration of the above, changes in road traffic noise are considered unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Noise associated with fixed plant during operation**

- 5.133 No requirement for the use or implementation of any fixed plant has been identified for the Proposed Scheme. As a result, associated significant effects will not occur and will not be considered further within the EIA or reported in the ES.

#### **Biodiversity**

##### **Damage or degradation of statutory Designated Sites during construction and operation**

- 5.134 Neithrop Fields Cutting SSSI is the only statutory designated site situated within 10km of the Site. Due to it being designated for its geological rather than ecological interest, despite its proximity to the Site (800m south), neither the construction nor operation of the Proposed Scheme is likely to cause damage or degradation to it.
- 5.135 As such, damage and degradation to statutory designated sites during the construction and operational stages are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

##### **Damage or degradation of non-statutory Designated Sites during construction and operation**

- 5.136 Of the five non-statutory designations identified within 2km, three are located over 1km from the Site. These sites are considered to be sufficiently spatially separated from the Site such that any potential direct or indirect adverse impacts as a result of the Proposed Scheme are considered to be unlikely.
- 5.137 The Northern Valleys Conservation Target Area (CTA) is located 800m west of the Site. A CTA is a landscape scale designation which identifies areas where conservation action will have the greatest benefit. Given the nature of this designation as well as the spatial separation from the Site it is considered that there will be no adverse effects as a result of the Proposed Scheme.
- 5.138 The Fishpond Woods Hanwell OLWS is located 500m north of the Site. Given the spatial separation from the Site it is considered unlikely that there would be any direct impact on the OLWS as a result of the Proposed Scheme. Indirect pollution impacts are also considered unlikely given the separation and the lack of receptor pathways, however there is potential for a slight increase in recreational impacts as a result of the additional residents introduced to the local area by the operational Proposed Scheme. The ponds themselves are not accessible, though a single well-marked footpath cuts through the woodland, with the rest of the woodland signed as private. Whilst there is potential for a slight increase in access to this footpath, the woodland is considered to represent a robust habitat, resilient to such minor increase in recreational pressure and is not considered likely to be adversely affected by residents of the Proposed Scheme. Furthermore, the layout of the Proposed Scheme has demonstrated it has capacity to deliver up to 7.1 ha of public open space including informal sports provision, mown trails and a play area which will provide attractive alternatives to off-Site recreation

and may further attract existing residents to access this space rather than the local formal and informal footpath network.

- 5.139 Given the reasons outlined, damage or degradation to non-statutory designated sites during the construction and operational stages is unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Damage or degradation of important habitats during construction and operation**

- 5.140 The majority of the Site comprises intensively cultivated arable land, which is considered to be of negligible intrinsic ecological value, such that development in these areas would have a minimal impact on biodiversity. However, the hedgerows, scattered trees and plantation woodland are of Local ecological value. These locally valuable habitats do not pose an 'in principle' constraint to the Proposed Scheme, though proposals have sought to retain these features and compensate for any losses, with enhancement and new habitat creation within the Site wherever possible.
- 5.141 As a result of an iterative design process, in which ecological sensitivities were considered, the vast majority of the Proposed Scheme's developed footprint is contained within the habitats of negligible ecological value, predominantly the arable land. The majority of valuable hedgerow, mature tree and woodland edge habitats have been retained and buffered from built development, with unavoidable losses associated with the proposed access point from Warwick Road only.
- 5.142 Impacts on the more valuable habitats have been confined to an essential minimum, with loss of approximately 95m of hedgerow along the western Site boundary, a species-poor hedgerow which has not been identified as 'ecologically important' under the Hedgerows Regulations. The magnitude and extent of direct habitat impacts is, therefore, relatively low. These losses can be mitigated and compensated through the enhancement of the existing hedgerows and additional planting of hedgerows throughout the Proposed Scheme (**Appendix 6**).
- 5.143 Given that the habitats within the Site to be impacted are considered to be of low intrinsic ecological value, there is significant scope for habitat enhancement, restoration and creation within the wider areas of proposed public open space. The proposed layout includes wide areas of connective woodland planting, wildflower meadow and parkland and wet grassland water attenuation features, as well as lengths of new and enhanced hedgerow planting.
- 5.144 Appropriate protection measures would be secured through the planning process including a CEMP to reduce the potential for harm to valuable ecological features during construction (summarised in the Preliminary EMP (**Appendix 3**)). To avoid damage/disturbance of retained features of ecological value during construction an Ecological Protection Zone (EPZ) with an appropriate buffer would be established through co-ordination with tree protection measures required as good arboricultural practice, including temporary protective fencing and signage. The EPZ would include the on-Site hedgerows, trees and woodland and any semi-natural habitat immediately adjacent to the Site.
- 5.145 Given the justification and mitigation measures outlined above it is considered that the damage or degradation of on-Site habitats during the construction and operational



stages is unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Killing or injury of Breeding Birds during construction and operation**

- 5.146 The hedgerows, trees and woodland edges, within the Site provide suitable breeding habitat to support common and widespread species of birds. Owing to the small size and limited diversity of habitats currently present, the Site supports an assemblage of breeding birds that is relatively limited in diversity and abundance and comprising common and widespread generalist species. Retention of the majority of the Site's boundary vegetation will minimise any impacts upon the breeding bird assemblage present.
- 5.147 Inherent mitigation incorporated into the Proposed Scheme at this stage includes the retention, buffering and favourable management of the boundary vegetation wherever possible (**Appendix 6**). Habitat enhancement measures include woodland creation, tree planting and wildflower grassland creation which will enhance the on-Site habitat and provide further buffering to the retained boundary habitats. A new surface water attenuation feature will provide further habitat diversity across the proposed open space. Furthermore, the value of the retained habitats will be increased through more sensitive management practices.
- 5.148 Breeding bird surveys carried out within the Site identified singing skylark on 23 occasions across three transect surveys. Given the nature of the Proposed Scheme and the habitats preferred by this species, it is likely that the Proposed Scheme will displace a breeding skylark from Parcel A of the Site. The current suitability of the Site to support skylark is likely to vary from year to year, depending on the cropping regime, with some crops of greater value than others and as such, it is likely that usage of the Site naturally varies. Therefore, it is expected that the skylark population within the Site are part of a wider network and the habitats within the Site provide a supporting role for a meta-population that use the Site as a part of their range. The loss of one small field from this habitat is not considered likely to substantially reduce their available habitat, as small numbers can be readily accommodated within the field to the east of the Site, in which only one skylark territory was recorded and which likely has capacity to support more territories.
- 5.149 Little or no breeding habitat will be lost as a result of the Proposed Scheme, however, enhancement could increase the nesting and foraging resources within the Site for breeding birds. Provision of suitable bird boxes that can be integrated or erected onto new buildings within the Site (such as house sparrow terraces, swift 'nest bricks' and swallow 'cups'), and on retained mature trees on-Site boundaries. The quantum, design and location of integrated bird nesting features would be designed with reference to CDC guidance note 'Biodiversity in the Built Environment, Good Practice Guide 1'<sup>61</sup>.
- 5.150 Given the protection afforded to all breeding birds, their nests, eggs and young, any removal of or disturbance to vegetation on-site or immediately adjacent to the Site which is considered to offer potential nesting habitat for breeding birds (i.e.

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<sup>61</sup> Biodiversity in the Built Environment, Good Practice Guide 1: Preservation of Existing Sites and Provision of Artificial Nesting Sites (September 2019) Cherwell District Council.

hedgerows, trees and woodland or potential habitat for ground-nesting birds such as skylark), should be undertaken outside of the breeding season, between September and February inclusive (**Appendix 6**). Alternately, if this is not practical, immediately following inspection for active nests by a suitably qualified ecologist. Appropriate protection measures would be secured through a CEMP (or similar document).

- 5.151 With consideration of the above it is considered that the killing or injury of breeding birds during the construction and operational stages is unlikely to be significant and will not be considered further within the EIA or reported in the ES.

**Killing or injury of Bats during construction and operation**

- 5.152 There are eight trees within the Site with features considered to be of medium to low suitability to support roosting bats. The Proposed Scheme has been designed to retain and buffer all of these trees and it is also anticipated that existing flight lines from these features will also be maintained, primarily along the tree lined Gullicote Lane.

- 5.153 Should the proposals change or if a tree will need to be impacted e.g., as a result of an Arboricultural Survey, further surveys may be required, furthermore, the roosting potential of trees can vary over time as a result of storms and natural decay. To mitigate for any unlawful damage or disturbance of a bat roost a CEMP (or similar) will be completed and will set out the required pre-commencement survey work and further aerial inspection surveys, as well as details of the requisite licencing measures to ensure that any works are completed in line with European Protected Species legislation including mitigation for any roost lost.

- 5.154 For foraging/commuting bats all of the hedgerow, trees and woodland bounding the Site will be retained and provided with a buffer from built development, except for small scale, unavoidable loss associated with the proposed access road along the western Site boundary. It is considered that this loss of a small section of this species-poor hedgerow will not result in a significant impact upon the bat assemblage, given that limited bat activity was recorded along this boundary feature. Furthermore, proposed planting has been included along this boundary to enhance the retained vegetation either side of the proposed access point to retain and improve connectivity wherever possible. The magnitude and extent of impacts upon the local bat assemblage is therefore considered to be minor.

- 5.155 Inherent mitigation incorporated into the Proposed Scheme at this stage includes the retention, buffering and favourable management of the vast majority of the boundary vegetation. Mitigation will focus on strengthening the existing retained boundary vegetation with additional tree, woodland extension and species-rich grasslands to create strong green linkages/corridors across the Site. Furthermore, the proposed attenuation pond will provide further habitat diversity across the proposed open space, which will provide additional foraging resources for bats.

- 5.156 Appropriate protection measures would be secured through a CEMP (or similar document) to reduce the potential disturbance to bats during construction. This would include the siting of illuminated Site compounds away from all retained features of ecological interest described in this document, namely the tree lined Gullicote Lane, woodland edges, mature trees, and hedgerows. Where required, the times that lights

are would be controlled to avoid lights being illuminated between and including dusk and dawn hours, allowing some dark periods for bats and other wildlife.

- 5.157 A wildlife-sensitive lighting scheme would be adopted during operation to avoid or minimise light spill, thereby creating 'dark zones' where built development is located in close proximity to retained/created linear foraging habitats and/or roosts, especially along Gullicote Lane and woodland edge habitats of the Site, which was identified as a commuting and foraging corridor for bats during the activity surveys. This is particularly pertinent given the presence, albeit in very low numbers, of barbastelle bat which is a particularly 'light sensitive' species. A sensitive lighting strategy would be designed with reference to the best practice guidance for bats and lighting<sup>62</sup>, with lighting used where possible which has a warm white output (2700K or less), with directional capacity such as LED and with no UV component. In addition, optics would be used to increase lighting directionality. Additional mitigation should include shielding of lights with accessories such as hoods, covers, louvres and shields where appropriate.
- 5.158 No bat roosts are likely to be impacted by the Proposed Scheme however bat roosting opportunities would be increased once operational through the installation of a range of good quality bat boxes across the Site. This would be achieved through the incorporation of features such as access tiles, gaps under fascia boards, or bat bricks into selected new dwellings situated in closest proximity to suitable foraging habitats, and through the erection of a variety of artificial bat roost boxes on suitable retained trees within the Site. The quantum, design and location of integrated bat roosting features would be designed with reference to CDC's 'Biodiversity in the Built Environment, Good Practice Guide 1'<sup>61</sup>.
- 5.159 These enhancement measures would increase the roosting and foraging resources within the Site for bats. With these measures in place, there will be a beneficial effect on the roosting and foraging opportunities for bats however this is unlikely to be significant and the effect will not be considered further within the EIA or reported in the ES.

#### **Killing or injury of Badgers during construction and operation**

- 5.160 The Proposed Scheme has been designed to retain and buffer the badger setts identified along the northern Site boundary from the built development by at least 30m. It is not considered that the loss of a single arable field resulting from the Proposed Scheme would significantly impact the foraging available to the local badger population. Furthermore, the Proposed Scheme has been designed to create large areas of open grassland and woodland belt habitat along the northern boundaries of both Site parcels, maintaining and enhancing movement corridors to increase local landscape connectivity. The creation and enhancement of habitats within the Site would also compensate for foraging habitat losses and maintain movement corridors.
- 5.161 During construction a CEMP (or similar) would outline any mitigation required to prevent disturbance of the badger setts during construction. To include:

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<sup>62</sup> Bats and Artificial Lighting in the UK (08/2018). *Bats and the Built Environment Series*. The Bat Conservation Trust, London

- Completion of a pre-commencement walkover survey across the Site to identify any new badger activity;
- Provision of an ecological buffer zone to the sett(s), to be delineated with appropriate fencing, to prevent any accidental incursion of vehicles near to the sett;
- Measures to complete should an active badger sett be identified which would require a level of disturbance during construction; and
- Standard measures to prevent harm to badger should they venture into the construction Site, such as covering of trenches overnight and daily pre-commencement checks.

5.162 In addition, the lighting recommendations above in relation to foraging and commuting bats both during construction and operation will also benefit other nocturnal species such as badgers. The proposed lighting would be designed to avoid or minimise light spill onto known badger setts and foraging corridors.

5.163 With these measures in place, and with legislative compliance, the killing or injury of badgers during construction and operation is unlikely to be significant and the effect will not be considered further within the EIA or reported in the ES.

## **Socio-Economics and Human Health**

### **Employment opportunities generated during construction**

5.164 The Proposed Scheme is expected to create demand for a number of temporary construction workers per annum over the 4-year construction period. Works would likely be drawn from Cherwell and across the wider area. Given the modest scale of the Proposed Scheme and duration of construction, the temporary employment during construction is likely to represent a minimal change in total Cherwell and wider area construction employment.

5.165 Therefore, whilst beneficial, temporary construction employment creation is unlikely to be significant and will not be considered further within the EIA or reported in the ES.

### **Demands on community and social infrastructure during operation**

5.166 Strong, vibrant, sustainable and cohesive communities require good quality, accessible public services and community infrastructure. Access to healthcare and education facilities has a direct positive effect on human health and is vital towards ensuring employment prospects, personal and social development and strong communities.

5.167 The Proposed Scheme is modest in scale, with up to 170 residential units proposed. Given the number of homes proposed, the total estimated population yield is 470<sup>63</sup>.

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<sup>63</sup> Based on the Proposed Scheme comprising an average of 3 beds per dwelling, and using the person yield per dwelling for developments below 400 dwellings from The Oxfordshire Country Council Guide to Developer Contributions.

- 5.168 There are 18 primary schools within 3 miles of the Site with a combined capacity of 667 pupils, indicating that there is sufficient capacity for additional children of primary school-age from the Proposed Scheme. There are also 4 secondary schools within 3 miles of the Site, with capacity for 693 secondary school-age children, indicating sufficient capacity to absorb additional children of secondary school-age generated by the Proposed Scheme. Should the need for additional capacity be identified following consultations with the local education authority, then this is likely to take the form of a Section 106 agreement specifying developer contributions.
- 5.169 There are eight GP practices located within 3 miles of the Site. All but one of these surgeries are currently accepting new patients, suggesting that there is capacity for local practices to absorb the residents of the Proposed Scheme. Should the need for additional capacity be identified following consultations with the NHS and individual practices, then this is likely to take the form of a Section 106 agreement specifying developer contributions.
- 5.170 There are also a range of community halls, libraries and leisure centres Banbury and the surrounding area, which are considered to have sufficient capacity to absorb the increased demand from the future residents of the Proposed Scheme.
- 5.171 Therefore, effects related to demands on social and community infrastructure are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Provision of new housing**

- 5.172 The Proposed Scheme is modest in scale, with up to 170 residential units proposed. Compared with the total housing target within Cherwell of 1,140 per year across the district, and considering that the Proposed Scheme will be delivered across 4 years (an average of 42.5 homes delivered per year), the Proposed Scheme will contribute an average of 3.72% to CDC's housing delivery target annually. When compared with the overall housing delivery across the district, this is not considered to be significant.
- 5.173 Therefore, effects related to the provision of new housing, whilst beneficial, are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Crime reduction and community safety**

- 5.174 Site security arrangements during the construction stage will be in line with the requirements set out in the Construction (Design and Management) Regulations 2015. The design of the Proposed Scheme will be informed by 'Secure by Design' principles and appropriate design and site management measures will be implemented through consultation with the local Police constabulary's Secure by Design officer to ensure that the potential for crime and anti-social behaviour is minimised.
- 5.175 Therefore, effects related to crime reduction and community safety are unlikely to be significant and will not be considered further in the EIA or reported in the ES.

#### **Access to open space during operation**

- 5.176 Providing secure, convenient and attractive open / green space, public amenity space and facilities for sports and leisure activities can lead to increased levels of physical

activity and reduce levels of heart disease, strokes and other ill-health problems that are associated with both sedentary occupations and stressful lifestyles. There is also a growing body of evidence that access to open spaces and facilities for exercise is important in helping to maintain and / or improve mental health<sup>64</sup>.

- 5.177 Recreational resources are currently provided within/surrounding the Site via the PRow network of footpaths, with access through Parcel A provided by Footpath 101/6/30 and along the eastern boundary of Parcel B via Footpath 239/7/20.
- 5.178 The Proposed Scheme will retain and enhance these PRowS, with Footpath 101/6/30 being incorporated into a green corridor through Parcel A, and a network of mown grass trails creating a recreational access route through both Parcels. Natural Play Space will be provided adjacent to these trails in Parcel B, whilst Informal Sports Provision will be available in the northwest of Parcel A.
- 5.179 Whilst the Proposed Scheme will have beneficial effects in comparison with the Site in its current form in terms of access to open space – particularly for new residents, but also other future site users – these are likely to impact only a relatively small number of people in the context of the population of the local impact area and the existing baseline provision of open space in the locality.
- 5.180 Therefore, effects related to access to open space are unlikely to be significant and will not be considered further in the EIA or reported in the ES.

#### **Social cohesion and inclusive design during operation**

- 5.181 Developments should connect with existing communities (for example through layouts and access points which avoid physical barriers and severance) and land uses and spaces should encourage social interaction, taking into account principles of inclusive and age-friendly design.
- 5.182 Located on previously undeveloped land, the Proposed Scheme will not result in the displacement of existing residential communities or community facilities. The Site's location adjacent to the northern extent of Banbury will also enable coherent integration with existing residential and commercial areas and transport links, which will therefore be accessible for future site users (e.g. residents, visitors and employees).
- 5.183 Public realm at the Proposed Scheme will also be implemented with a strong consideration of principles related to inclusive design, taking into account the PPG<sup>65</sup> outlining best practice for ensuring that developments can be accessed and used by all in a way that effectively fosters social connections, recognising and accommodating differences in the way people use the built environment as a result of factors such as age and disability.

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<sup>64</sup> NHS Healthy Urban Development Unit (2019) Rapid Health Impact Assessment Tool (4<sup>th</sup> Edition).

<sup>65</sup> Department for Levelling Up, Housing & Communities (2019). PPG: Housing for older and disabled people.

5.184 Whilst the Proposed Scheme will have beneficial effects in terms of social cohesion and inclusive design, these are likely to impact only a relatively small number of the people living in the local impact area, and existing baseline provision of community services in the locality.

5.185 Therefore, effects related to social cohesion and inclusive design are unlikely to be significant and will not be considered further within the EIA or reported in the ES.

#### **Access to healthy food during operation**

5.186 Access to healthy and nutritious food can improve diet and prevent chronic diseases related to obesity. Healthy food options should be available and easily accessible to those using and working at new developments to enable and promote healthy lifestyles.

5.187 A range of existing healthy food options will be accessible from the Proposed Scheme as a range of options in terms of supermarkets and foodstores are available in Banbury.

5.188 Therefore, effects related to access to healthy food are unlikely to be significant and will not be considered further in the EIA or reported in the ES.

#### **Access to active travel and sustainable transport options during operation**

5.189 Active travel and sustainable travel options should be accessible to those living and working at and otherwise using new developments to enable and promote healthy and sustainable lifestyles, through facilitating physical activity and zero / low emissions transport, such as walking, cycling and public transport options.

5.190 The Proposed Scheme will be linked to development south of the Site and Banbury beyond via a footpath/cycle path. Residents will have good access to local bus services with bus stops located on Dukes Meadow Drive, approximately 700m and 750m from the centre of Site.

5.191 The Proposed Scheme's impact on accessibility and active travel connections is also be assessed within 'Transport and Access' (above) and through the **TA** and linked **Travel Plan**.

5.192 Therefore, effects related to access to active travel and sustainable transport options are unlikely to be significant and will not be considered further in the EIA or reported in the ES.

### **Climate Change**

#### **Climate change resilience during construction and operation**

5.193 Projected extreme weather events have the potential to impact the construction and operational stages of the Proposed Scheme with cost and time implications, as well as impacting building elements and the health of construction Site workers and future Site residents/users. Such impacts include overheating in homes and urban heat island effects in public areas, increased energy needs for cooling in buildings, increased flood risk to public realm and ground floor properties, water shortage for public use and landscaping and building damage due to droughts.

5.194 During construction, a CEMP will be implemented with measures to ensure resilience to climate change, including the following actions:

- Ensure the Site construction compound(s) drainage has sufficient capacity to cope with heavy rainfall events;
- Cover spoil and material heaps during periods of high rainfall or high winds;
- Spray spoil and material heaps during dry periods to reduce dust;
- Regularly inspect materials stockpiles and structures with additional inspections during and following extreme weather events (e.g. floods, heatwaves, storms); and
- Provide adequate rest, shade and PPE (e.g. hats and sunscreen) for workforce during periods of high temperature and sunshine.

5.195 Climate change during the lifespan of the Proposed Scheme has been considered within the Flood Risk Assessment and Drainage Strategy (**Appendix 7**), including a suitable allowance for increased rainfall associated with climate change through the provision of SuDS to sustainably manage surface water runoff in line with best practice (as noted in **Chapter 4**). The water company's (Thames Water) strategic planning and the Proposed Scheme's compliance to Building Regulations on water efficiency as well as actions to promote reuse and recycling of water, form additional resilience measures to future water shortage issues.

5.196 It is also expected that the Proposed Scheme will incorporate passive measures to reduce internal and external heat gains including highly efficient lighting systems, external shading, natural ventilation, low u-values, avoiding unwanted infiltration of heat and hot air. In addition, other expected measures include identifying spaces with high overheating risk (via an overheating risk assessment at detailed design) and mechanically ventilating them with low-energy cooling systems. Green infrastructure and landscaping will also provide natural cooling to the whole Proposed Scheme.

5.197 It is anticipated that the proposed planting scheme for the Proposed Scheme will be designed to provide not only shelter for the occupants, but also shading for the soil to reduce evaporation and keep it moist. This is in addition to any maintenance strategies in place for all areas of soft landscaping will ensure resilience to extreme weather events. It is anticipated that the species selected for the landscaping and other planting across the Site will be tolerant of a changeable climate.

5.198 Therefore, effects related to climate change resilience are unlikely to be considered significant and will not be considered further within the EIA or reported in the ES.

#### **GHG emissions associated with the construction and operational stages**

5.199 GHG emissions associated with the embodied carbon of materials including material extraction, the transportation and manufacturing of construction products, the product delivery to Site and installation process, the refurbishment/replacement of the building elements and waste processing through to disposal have the potential to increase the atmospheric GHG concentrations. Other effects arising from the Proposed Scheme



include GHG emissions associated with the energy used for heating, cooling, ventilation, hot water and lighting (regulated emissions) and equipment (unregulated emissions), as well as vehicles/people trips.

- 5.200 The exact likely emissions from construction are unclear without full knowledge of materials, their origins and machinery/plant being used. The possible emissions can be mitigated through careful sourcing of construction materials, as part of a Life Cycle Assessment to reduce the embodied carbon associated with such materials, as well as direct emission reducing practices on-Site. Such measures will be detailed within the CEMP, which will outline carbon reduction targets/practices to be adopted throughout this stage. In addition, the levels of construction traffic are anticipated to be limited in the context of existing traffic flows on the local road network.
- 5.201 Overall, direct and indirect GHG emissions during construction are not clearly understood, though considering the scale of the Proposed Scheme and measures to be included in the CEMP, they are unlikely to be significant and will not be considered further within the EIA or reported in the ES.
- 5.202 During the operational stage, GHG emissions will be released as a result of energy used for heating and lighting etc., within the Proposed Scheme, as well as transportation.
- 5.203 Residential dwellings are required to meet specific standards covered within Building Regulations (Part L1A), including the Future Homes Standard which requires a reduction in carbon emissions of at least 75% by 2025 as well as an interim target of 31%. Part L1A is focused on the conservation of fuel and power in order to improve dwelling efficiency (and therefore require less energy and indirect GHG emissions). As such, the Proposed Scheme will include dwellings built in line with such standards as a minimum in order to reduce the adverse effects associated with operational phase GHG emissions.
- 5.204 Regarding the transport related emissions, an operational Travel Plan will be implemented to encourage the use of more sustainable modes of transport such as walking, cycling and use of public transport by improving facilities and providing information to occupants, cycle parking and storage provision. A Travel Pack issued to occupiers of the Proposed Scheme with a designated co-ordinator with the aim to move towards modal shift and sustainable transport choices.
- 5.205 The exact operational GHG emissions are not clearly understood, nor how these emissions would compare to that of regional and national budgets. However, the scale of the Proposed Scheme is relatively small in the context of regional development proposed. The measures outlined above will reduce GHG emissions in-combination with the continued decarbonisation of the UK electricity distribution network through the national strategy for electricity reform and grid decarbonisation.
- 5.206 Therefore, effects related to GHG emissions during operation are unlikely to be considered significant and will not be considered further within the EIA or reported in the ES.

## **Obtrusive Lighting**

### **Obtrusive lighting affecting residential receptors during construction and operation**

- 5.207 As mentioned in **Section 3**, the nearest residential receptors to the north are over 200m away and the nearest residential receptors to the south are over 70m away and have the mitigation of a substantial boundary of vegetation between them and the nearest proposed luminaire.
- 5.208 Considering this and the mitigation measures mentioned above it is not anticipated that lighting from the Site will cause a significant impact to surrounding residential properties and therefore can be scoped out of the EIA.

### **Obtrusive lighting affecting ecological receptors during construction and operation**

- 5.209 The proposed lighting design will comply with the mitigation measures given in Guidance Note 08/18 Bats and Artificial lighting in the UK ILP 2018 and those presented in the Preliminary EMP (**Appendix 3**). therefore, it is not anticipated that lighting from the Site will cause a significant impact to surrounding ecological receptors and therefore can be scoped out of the EIA.

### **Obtrusive lighting affecting Hanwell Observatory during construction and operation**

- 5.210 The Observatory's ability to observe the night sky can be impacted by skyglow (light being emitted into the night sky either directly from light fittings or from reflections) brightening the night sky.
- 5.211 The ILP's GN01/21 Notes for the reduction of Obtrusive Light states that lighting installation of more than 4 luminaries should undertake an Upward Flux Ratio. The proposed lighting design will comply with this guidance and include the mitigation presented in the Preliminary EMP (**Appendix 3**) including part night dimming, changing lighting colour and using specific dark sky appropriate luminaries to reduce sky glow.
- 5.212 Given the above mitigation measures to be included within the lighting design and the distance between the Site and the Observatory it is not anticipated that lighting from the Proposed Scheme will cause a significant impact Hanwell Observatory and therefore can be scoped out of the EIA.
- 5.213 Based upon the information above, lighting can be scoped out of the EIA. However, a technical report showing compliance with the guidance mentioned above will be submitted alongside the planning application.

## **Microclimate (Daylight, Sunlight and Overshadowing and Wind Microclimate)**

- 5.214 The Proposed Scheme is unlikely to result in significant massing to materially change the existing microclimate experienced by the existing nearby receptors or that of the future users of the Proposed Scheme. Given this, it is considered the Proposed Scheme is unlikely to give rise to significant environmental effects in relation to Daylight, Sunlight and Overshadowing and Solar Glare and will not be considered further as part of the EIA.
- 5.215 Potential effects of a changing wind environment on future users on the Site can be caused by a combination of new buildings but is very much dependent on the height,

massing and layout. The Proposed Scheme will have minor variations in height with a maximum of 2.5 storeys from ground level for residential dwellings. As such, it is unlikely that the wind conditions generated are to cause significant effects on pedestrian safety and comfort.

5.216 Based on the above, effects related to wind are not considered to be significant and will not be assessed within the EIA.

## **Waste and Resources**

### **Increase in waste to landfill or other waste treatment facilities during construction**

5.217 Earthworks and reprofiling will be required to form proposed drainage features and to create development plateau levels. As noted in **Chapter 4**, at this stage, it is assumed that levels may vary from between approximately +2m and -2m when compared to existing ground levels. It is assumed that a general cut and fill balance will be broadly achieved within the Site, with only a minimal amount of excess cut across the Site. On this basis there is not anticipated to be any significant import or export of material required.

5.218 The agricultural nature of the Site means that there will be a need to strip topsoil, a proportion of which will be re-used on Site for strategic landscaping areas. Given this, to ensure the topsoil is appropriately handled and to minimise the loss of resource, the principle contractor (when appointed) will be responsible for the production of a Soil Management Plan (SMP) which will form part of the CEMP which will include, as a minimum:

- Maps showing topsoil and subsoil types and areas to be stripped;
- Methods for stripping, stockpiling, re-spreading and improving the soils;
- Haul routes;
- Location and content of each soil stockpile;
- Schedules of volumes for each material;
- Expected after-use for each material; and
- Who is responsible for supervising soil management.

5.219 Other sources of waste during the construction stage are assumed to relate to construction materials (including packaging). It is anticipated that waste produced during construction would be controlled through the implementation of a CEMP. The CEMP will be informed by the waste provisions of the Environmental Protection Act 1990<sup>66</sup> and the Environmental Protection (Duty of Care) Regulations 1991<sup>67</sup> and will set

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<sup>66</sup> Environmental Protection Act 1990 No. 43 Available at: <https://www.legislation.gov.uk/ukpga/1990/43/contents> [Accessed: 22/11/2021].

<sup>67</sup> Environmental Protection (Duty of Care) Regulations 1991 No. 2839. Available at: <https://www.legislation.gov.uk/uksi/1991/2839/made#:~:text=The%20duty%20requires%20such%20persons,person%20or%20to%20a%20person> [Accessed: 22/11/2021].

out the principles and legal requirements relating to waste (including hazardous waste).

- 5.220 The CEMP will also describe how materials will be managed efficiently and disposed of legally during construction. It will also outline the aims, objectives and ongoing management responsibilities to be implemented during the construction stage as well as containing targets for the reduction / diversion from landfill and reuse of waste.
- 5.221 These mitigation measures would be considered an integral part of the Proposed Scheme and considered as part of the Schedule of Mitigation.
- 5.222 Therefore, effects related to waste generated during construction are unlikely to be significant and will not be considered further in the EIA or reported in the ES.

**Increase in waste to landfill or other waste treatment facilities during operation**

- 5.223 Once operational, a quantity of residential and green waste will be generated by the Proposed Scheme. However, the Proposed Scheme will not include for any land uses or activities that will give rise to particularly contaminative or hazardous waste materials.
- 5.224 The Proposed Scheme will include provisions for the disposal of waste, which will include facilities for the separation of waste for recycling purposes. This will be in accordance with OCC/CDC policy. A waste strategy (to be secured by planning condition) will be developed for the Proposed Scheme, which will set out the principles and strategy for the management of waste and recycling.
- 5.225 These mitigation measures would be considered an integral part of the Proposed Scheme and considered as part of the Schedule of Mitigation.
- 5.226 Therefore, effects related to waste generated during operation are unlikely to be significant and will not be considered further in the EIA or reported in the ES.

**Risk of Major Accidents and/or Disasters**

- 5.227 As detailed within Schedule 4, Paragraphs 5 and 8 of the EIA Regulations there is the requirement to consider the risk of major accidents and / or disasters relevant to the Proposed Scheme.
- 5.228 A qualitative appraisal of major accidents and/or disasters considered relevant to the Proposed Scheme is presented in **Table 5.1**. Based on the evidence provided within **Table 5.1**, although there is the potential for a wide range of major accidents and disasters that could occur, the probability, likelihood and frequency is very low, often due to the management of a risk under established legislative requirements.

**Table 5.1: Appraisal of the risk of major accidents and / or disasters**

Effect	Appraisal
Major accidents associated with nearby COMAH sites	There are no Control of Major Accident Hazard (COMAH) sites within the Site nor within three miles of it.

Effect	Appraisal
Major accidents associated with underground utilities	During the construction stage, working areas will be secured with restricted access so only suitably qualified personnel are present. As part of the CEMP, good practice working measures, such as ensuring construction workers are briefed on the appropriate methods of working and the easements, will be put in place in accordance with the Construction (Design and Management) Regulations 2015. The Proposed Scheme will be designed in accordance with relevant guidance <sup>68</sup> and in consultation with the HSE. With such measures, the risk is considered to very low.
Major accidents associated with the underlying high pressure gas pipeline	As above, good practice working measures will be adhered to when working in the vicinity of the Site's underlying high pressure gas pipeline. Appropriate standoffs will be enforced and HSE protocols will be adhered to in order for works to avoid close contact with the pipeline. With such measures, the risk is considered to very low.
Major accident associated with overhead power lines	The Site is not crossed by any overhead powercables, as a result the risk of damage of any overhead power cables during construction or operation is considered very low.
A major accident caused by ground subsidence and associated structural / building collapse	As part of the CEMP, good practice working measures and emergency measures will be put in place in accordance with the Construction (Design and Management) Regulations 2015. All earthworks and foundation design will be in accordance with relevant industry guidance, including but not limited to CIRIA Report C572: Treated ground engineering properties and performance, British Research Establishment document FB75: Building on Fill - Geotechnical Aspects and British Standard 6031:2009: Code of Practice for Earthworks, thereby negating the probability and likelihood of any significant effect.
Major flood event caused by an extreme weather event	As described under 'Water Resources, Flood Risk and Drainage' above, effects associated with flood risk are not considered to be significant (primarily due to the controlled drainage strategy to be implemented as part of the Proposed Scheme).  The Proposed Scheme has been designed and will be constructed in line with relevant standards and guidance. Adherence to such guidance, which accounts for possible extreme events, is considered sufficient to negate the probability and likelihood of any significant effect.
Major accidents associated with fire	The Proposed Scheme will be subject to Building Regulations and standards in order to be classified as safe for use, inclusive

<sup>68</sup> Including the HSE's Land Use Planning Methodology available at: <https://www.hse.gov.uk/landuseplanning/methodology.htm>

Effect	Appraisal
	of fire safety standards. With such measures, the risk is considered to very low.
Major accidents on the local road network	<p>The potential for major transport accidents during construction stage will be mitigated for within a construction logistics / traffic management plan as part of the CEMP, which will include measures such as a planned route for construction traffic to reduce the risk to road users, restricting deliveries to certain periods and ensuring the vehicles are well maintained. With the implementation of these measures, the risk is considered to be very low.</p> <p>Highways works, including the new vehicular access and new vehicle circulation routes around the Proposed Scheme, will all be designed in accordance with relevant guidance / standards. These measures are anticipated to reduce the potential frequency and likelihood of accidents to a very low level.</p>
Major accidents associated with risk of UXO on-site	<p>The Site has not been identified as being at risk of previously undiscovered UXO being present. It is considered that through the implementation of mitigation measures, such as the attendance of UXO supervisors during the groundworks (if appropriate), the potential risks will be very low.</p>
Accidents arising from vandalism, arson or terrorism	<p>The risks associated with technological failures and accidents will be reduced through appropriate design of the Proposed Scheme, including the use of fire alarms.</p> <p>Target acts of vandalism, arson or terrorism cannot be fully mitigated, but the adoption of appropriate security measures at the construction and operational stages, such as security lighting, will help to minimise the likelihood of such events occurring.</p> <p>Given this, the potential risks will be very low.</p>

5.229 The EIA Regulations do not specify the need for the consideration of natural disasters. However, for completeness, this has been considered. The probability, frequency and likelihood of natural disasters arising from climatic occurrences (i.e. hurricanes) are considered to be very low due to the natural climatic condition of the UK within the global climate system. Specific geological events (i.e. earthquakes, tsunami, volcanic incidents etc.) are also considered to be very low due to the general absence of required geological conditions (i.e. area of tectonic plate interaction) within or in proximity to the UK. Although earthquakes have occurred within the UK, the magnitude of such events has generally been low.

## 6. Built Heritage and Archaeology

### Identification of Effects which are Not Significant

- 6.1 The following effect is considered unlikely to be significant and therefore will not be considered further within the EIA or reported in the ES. A factual evidence base has been provided below to support this. Where mitigation has been used to inform this judgement, the identified mitigation has been captured within the Preliminary EMP provided in **Appendix 3**.

#### Change to the setting of Drayton Conservation Area

- 6.2 Drayton Conservation Area is located approximately 800m to the south of the Site. In this instance, the conservation area is separated from the Site by the intervening settlement of Banbury, as well as topographic and landscape features. As such, the Proposed Scheme is considered to have no potential to affect this designated heritage asset or any other assets and they will not be considered further or reported in the ES.

### Identification of Sensitive Receptors and Likely Significant Effects

- 6.3 **Table 6.1** outlines the effects (and associated receptor[s]) that are considered to be likely and significant and therefore will be assessed within the EIA and reported in the ES.

**Table 6.1: Potential Likely Significant Effects and Sensitive Receptors**

Effect	Receptor	Applicable Stage
Change to the setting of Designated Heritage Assets	Hanwell Conservation Area and heritage assets within it (including listed buildings)	Operation
Physical impacts on archaeological remains	Non-designated heritage assets within the Site.	Construction

### Assessment Methodology of Likely Significant Effects

- 6.4 The ES Chapter will identify and describe the nature and significance of the effects likely to arise in relation to built heritage and archaeology receptors within a defined study area of 1km from the Site boundary.
- 6.5 Cumulative effects, arising from the effect of the proposed development in conjunction with other developments, will also be considered.
- 6.6 The scope of the assessment will include the following:
- The potential direct impacts of the Proposed Scheme on previously recorded heritage assets located within the Site;

- The potential direct impacts of the Proposed Scheme on hitherto unknown or unrecorded heritage assets located within the site; and
- The potential indirect impacts of the Proposed Scheme on heritage assets, outside the Site, through change within their setting.

### **Policy and Guidance**

6.7 Both the proposed heritage baseline assessment and the ES chapter will, where relevant, be informed by the following legislation and national and local planning policy:

- Planning (Listed Buildings and Conservation Areas) Act 1990;
- Ancient Monuments and Archaeological Areas Act 1979;
- The National Planning Policy Framework (NPPF, 2021<sup>69</sup>); and
- The saved policies of the Cherwell Local Plan 1996 and the Cherwell Local Plan 2011-2031.

6.8 The heritage baseline assessment and the ES chapter will follow, where relevant, the heritage-specific guidance documents listed below:

- The baseline review of archaeological and heritage issues will be completed with recourse to the Chartered Institute for Archaeologists' Standard and Guidance for Historic Environment Desk-based Assessment (CIfA 2020<sup>70</sup>);
- The identification and assessment of potential 'setting' effects, heritage receptors, will be undertaken with regard to Historic England's Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (Second Edition) (HE 2017<sup>71</sup>); and
- The assessment of the significance of heritage assets will reference Historic England's Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment: (HE 2015<sup>72</sup>).

### **Baseline data**

6.9 The following studies will be prepared in order to inform the ES Chapter:

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<sup>69</sup> Ministry of Housing, Communities and Local Government (MHCLG), 2021. The National Planning Policy Framework. London.

<sup>70</sup> Chartered Institute for Archaeologists (CIfA) 2020 *Standard and Guidance for Historic Environment Desk-based Assessment, Reading*.

<sup>71</sup> Historic England (HE) 2017 *Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets*

<sup>72</sup> Historic England (HE), 2015. *Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning Note 2*. London.



- Archaeological and Heritage Desk-Based Assessment (EDP 2022) - This assessment will present a baseline of historic environment information for the site and its environs (as required by NPPF, 2021), and in accordance with the Chartered Institute for Archaeologists' Standard and Guidance for Historic Environment Desk-based Assessment (CIfA 2020)). With recourse to desk-based sources of historic environment data (inclusive of the Oxfordshire HER), and a site walkover, it will define the site's potential to contain potentially significant archaeological remains utilising a 1km radius study area. It will also identify any designated heritage assets within a 1km study area, describe their setting and its contribution to their heritage value, and whether and to what degree the site also contributes in order to inform the operational development assessment.
- Trial Trench Evaluation - Following discussion with the Archaeological Advisor to Oxfordshire County Council informed by the results of the geophysical survey undertaken in 2022 (AOC 2022), a trial trench evaluation will be carried out. This will follow a methodology and scope agreed with the Archaeological Advisor to Oxfordshire County Council, set out and agreed through the submission of a Written Scheme of Investigation/Method Statement (MOLA<sup>73</sup> 2022).

***Assessment thresholds/ Magnitude of Effects/ Significance of Residual Effects***

- 6.10 The assessment of likely significant effects to sensitive receptors will consider the sensitivity of the receptor (on a scale of high, medium, low and negligible) and the magnitude of change (on a scale of large, medium, small and negligible) to determine the level of effect on a scale of major, moderate, minor and negligible. Significant effects will be determined following this through professional judgment.
- 6.11 The above approach is consistent with the criteria established by National Highways (NH) in its Design Manual for Roads and Bridges (2020). This document sets out the requirements for assessing and reporting the effects on cultural heritage as part of the environmental assessment process, and is the only such document adopted by a government agency.

**Limitations and Assumptions**

- 6.12 Specific assumptions and limitations of the assessment can be found in the supporting technical documents of the chapter. In summary, there are no assumptions or limitations that will overtly affect the quality or robustness of the assessment.
- 6.13 The analysis of potential buried archaeological remains includes an inherent degree of predictive modelling, as is an industry accepted approach, but is informed by primary data gathered through a geophysical survey and the analysis of available data (i.e., Historic Environment Record, LiDAR, aerial photography and historic cartography, etc). Whilst the results of the trial trench evaluation are not yet available, this additional fieldwork is forthcoming and will further inform the conclusions of the ES chapter.

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<sup>73</sup> MOLA 2022 Land East of Warwick Road, Banbury – Written Scheme of Investigation for an Archaeological Evaluation.

## 7. Landscape and Visual

### Identification of Effects which are Not Significant

- 7.1 The following effects are considered unlikely to be significant and therefore will not be considered further within the EIA or reported in the ES. A factual evidence base has been provided below to support this. Where mitigation has been used to inform this judgement, the identified mitigation has been captured within the Preliminary EMP provided in **Appendix 3**.

### Changes to landscape character of landscape designations during construction and operation

- 7.2 The Site does not lie within a nationally designated landscape. The Cotswolds AONB lies approximately 4.5km to the north-west at its closest point and there is no intervisibility with the Site. Nor does the Site does lie within any local designated landscapes.
- 7.3 Spiceball Country Park is located circa 2.3km to the southeast of the Site, with intervening distance and built form of Banbury providing separation and screening of intervisibility.
- 7.4 Owing to the above, effects related to landscape designations during construction and operation are considered unlikely to be significant and will not be considered further within the EIA or reported in the ES.

### Changes to landscape character of the Farmland Plateau Landscape Type during construction and operation

- 7.5 The Proposed Scheme is relatively small in relation to the wider Plateau Farmlands LT and would not have a material effect on its key characteristics. Although there would be localised excavation and slight alteration within the Site during construction, this would not affect the key characteristics identified within published documentation. Wildlife and ecological features of value would be retained and improved. Quiet enjoyment of the countryside would remain possible from PRow within the local context due to very little intervisibility with the Proposed Scheme.
- 7.6 Upon completion, at Year 1, due to the retention of the existing mature landscape fabric and the proposals for any built form to be located within a well-contained field parcel, it is not considered that the local landscape character would be dramatically altered by the operational Proposed Scheme. The Proposed Scheme would not obscure views of the wider landscape and, although views of the Site are very limited, where any viewing opportunities are available looking towards the Site from the wider setting, the Proposed Scheme would largely be seen with the backdrop of, or a relationship with, existing development within Banbury.
- 7.7 Considering the above, effects related to the Farmland Plateau Landscape Type during construction and operation are considered unlikely to be significant and will not be considered further within the EIA or reported in the ES.

**Changes to the visual amenity of visual receptors beyond 1km from the Site during construction and operation**

- 7.8 During the construction of the Proposed Scheme, construction activities requiring taller machinery could be visible in longer views. Geographically, these changes would generally be experienced at the Site level and its immediate context only, although longer filtered views from within some areas of the Farmland Plateau LT may be possible during winter months. In the wider context, high-level construction activities would potentially be visible above the skyline in long views across the LCA, but significant effects would likely be limited to within 1km of the Site.
- 7.9 The greatest effects upon visual amenity resulting from the completion of the Proposed Scheme are likely to be focused within a 500m radius of the Site, including walkers travelling along PRow 191/6/30 as it passes through the Site, PRow 239/7/20 alongside the Site’s eastern boundary, PRow 239/7/10 to the north-east of the Site at the southern-most edge of the Hanwell Conservation Area and vehicle users travelling along Warwick Road at the Site’s western boundary. As distance between receptors and the Site increases and the presence of intervening rolling landform and field boundaries cumulate, the extent of intervisibility (especially given Parcel A’s contained nature) and therefore perceived effect diminishes.
- 7.10 As such, effects to visual receptors beyond 1km of the Site during construction and operation are considered unlikely to be significant and will not be considered further within the EIA or reported in the ES.

**Identification of Sensitive Receptors and Likely Significant Effects**

- 7.11 **Table 7.1** outlines the effects (and associated receptor[s]) that are considered to be likely and significant and therefore will be assessed within the EIA and reported in the ES.

**Table 7.1: Potential Likely Significant Effects and Sensitive Receptors**

Effect	Receptor(s)	Applicable Stage(s)
Changes to landscape character	The character of the Site	Construction / Operation
	The character of the site context, including relationship between Banbury and Hanwell	Construction / Operation
Changes to the visual amenity experienced by receptors	Visual receptors within 1km of the site	Construction / Operation

**Assessment Methodology of Likely Significant Effects**

- 7.12 The assessment of Landscape and Visual effects in the ES will follow the guidelines set out in the third edition of Guidelines for Landscape and Visual Impact Assessment

(GLVIA)<sup>74</sup>. This will be used as a basic approach and amended as necessary to cover specific Site issues. This same methodology has been used to inform the Landscape and Visual Impact Assessment completed in support of the Application, which is provided as **Appendix 8**.

7.13 To establish the baseline and potential limit of material effects a broad study area will be adopted, enabling the geographical scope of the assessment to be defined, and to provide the wider geographical context of the study. The first stage of the assessment is to establish the baseline conditions of the Site and surrounding area, which would include identifying the landscape character and key features of the landscape and whether any landscape designations affect the Site. Sources examined for the desktop study will include:

- Local Planning Policy;
- Landscape and Heritage Designations;
- Natural England's National Character Areas;
- District and local level Character Areas;
- Natural England's Natural Area Profile;
- Public Rights of way;
- Local OS Maps; and
- Aerial Photographs.

7.14 Site appraisals have already been undertaken to inform the LVIA (**Appendix 8**), the purpose of which was to:

- Confirm the extent of study areas for the landscape and visual assessments respectively. Following initial analysis and subsequent fieldwork, the broad study area was refined down to the land that is most likely to experience landscape effects. The extent of this detailed study area is 2km from the site boundary, although occasional reference may be made to features beyond this area where appropriate;
- Confirm status of baseline conditions identified by the desktop assessment;
- Confirm the landscape character areas within the study area and compare these to the actual baseline condition. This will also include consideration of the findings of the Archaeological and Heritage Assessment and Preliminary Ecological Appraisal (**Appendix 6**) and Arboricultural Impact Assessment<sup>75</sup> which present findings on features within the study area; and

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<sup>74</sup> Landscape Institute and Institute of Environmental Management and Assessment, 2013.

<sup>75</sup> The Environmental Dimension Partnership (2022), Arboricultural Impact Assessment (edp3253\_r009).

- Identify the Primary Visual Envelope of the Site and record key viewpoints from within this, which will be used to inform the assessment of landscape and visual effects of the Proposed Scheme.

7.15 The preliminary visual baseline has identified existing views and the ‘receptors’ likely to experience visual change, it has been conducted in three steps described in turn below:

- Step One: Defining Zones of Theoretical and Primary Visibility:
  - The starting point for an assessment of visual amenity is a computer-generated ‘zone of theoretical visibility’ (ZTV). The ZTV is derived using a digital surface model to give a prediction of the areas that, theoretically, may be able to experience visual change; it thus provides the basis for more detailed field assessment;
  - The ZTV is then refined by walking and driving local roads, rights of way and other publicly accessible viewpoints to arrive at a more accurate, ‘field-tested’ zone of primary visibility (ZPV). The ZPV is where views of the Proposed Scheme would normally be close-ranging and open, whether in the public or private domain, on foot, cycling or in a vehicle; and
  - Beyond the ZPV lies a zone of visibility that is less open, being either partly-screened or filtered. Views from within this zone would include the Proposed Scheme – it may not be immediately noticeable, but once recognised could be a perceptible addition to the view.
- Step Two: Defining Receptor Groups:
  - Within the ZPV and wider area, the receptors likely to experience visual change have been identified and categorised into a number of discernible groups.
- Step Three: Defining Representative Viewpoints:
  - Within the ZPV, there are many individual points at which views towards the Site are gained. A number of viewpoints that are considered representative of the nature of the views have been selected from each of the receptor groups. The selection of the representative viewpoints is based on the principle that the assessment needs to test the ‘worst case’ scenario, and in selecting these viewpoints, the following will be included:
    - A range of viewpoints from all points of the compass, north, south, east and west;
    - A range of viewpoints from distances at close quarters at the Site boundary and up to distant viewpoints at 2km and more from the Site; and
    - Viewpoints from identified receptor groups.

- 7.16 The Site was visited between 2019 and 2022 by a qualified landscape architect, with the most recent visits being undertaken in clear weather conditions over two visits during February 2022, with photography taken from selected viewpoints. The location of 15 proposed representative views on which the assessment of visual effects will be based is illustrated on **Figure 2**.
- 7.17 The second stage of the landscape and visual assessment will seek to describe and make a judgement on:
- Effects on the Landscape Character: The effects which may arise as a result of the Proposed Scheme on discrete character areas and/or character types comprising features that may possess a particular quality or merit. In this case, the effects on the historic landscape will be considered and cross referenced with the Built Heritage and Archaeology chapter of the ES; and
  - Visual Effects: Effects that may arise as a result of the Proposed Scheme on views from visual receptors, such as users of local PROWs, and upon the amenity value of the views from surrounding uses.
- 7.18 The detailed methodology for the assessment of effects is included at **Appendix 8**.
- 7.19 As part of the Proposed Scheme, measures to mitigate any visual impacts and enhance the landscape value and visual quality of the Site are integral to architectural and landscape design work and particularly pertinent to the Proposed Scheme. The Proposed Scheme will be of high architectural and landscape quality and design, taking full account of the setting of the Site, particularly the Site's relationship with the wider rural landscape to the east. If any adverse visual impacts are identified through the assessment, mitigation measures will be considered such as through choice of scale, massing, materials and finishes; landscape strategy; and screening construction.
- 7.20 Finally, an assessment of any residual effects following the application of mitigation measures will be undertaken. The evaluation of residual effects will be considered for Year 1 and Year 15 and allows for the consideration of the screening effects of screen planting that will be incorporated as mitigation for the development.

### **Limitations and Assumptions**

- 7.21 No limitations relating to the assessment of landscape and visual effects that affect the robustness of the assessment of the potential likely significant effects of the Proposed Scheme.

## 8. Methodology for the Assessment of Cumulative Effects

### Overview

- 8.1 Cumulative effects comprise the combined effects of reasonably foreseeable human induced changes within a specific geographical area and over a certain period of time, and can be both direct and indirect. An assessment of the significance of cumulative effects needs to be undertaken in the context of the characteristics of the existing environment.
- 8.2 To accord with the EIA Regulations and best practice guidance, the following types of cumulative effects will be considered within the EIA and reported in the ES:
- **Effect interactions:** Different effects within the Proposed Scheme itself affecting the same receptor, either within the EIA Study Area or in the local area; and
  - **In-combination effects:** Effects with other projects planned in the wider area.

### Assessment Methodology

- 8.3 At present, there is no widely accepted methodology or best practice for the assessment of cumulative effects although there are a number of guidance documents available. The following approach that will be adopted is based on previous experience at Turley, the types of receptors being assessed and the nature of the Proposed Scheme being considered.
- 8.4 The assessment will principally be a qualitative assessment based on the available information. For some environmental topics, relevant data may be available (i.e. where modelling work is undertaken) to facilitate a quantitative analysis of cumulative effects, which will be fully set out within the assessment within the ES. Where information is not available, assumptions will be made based on professional judgement and clearly stated alongside any uncertainty as part of the assessment.

### Effect Interactions

- 8.5 The approach to the assessment of effect interactions considers the changes in baseline conditions at common sensitive receptors due to overlapping effects arising from the Proposed Scheme. The assessment is based upon residual effects only (i.e. following the implementation of secondary mitigation or enhancement). The common sensitive receptors considered within this assessment are those which are assessed within two or more of the technical assessments within the ES.
- 8.1 A matrix of residual effect interactions will be formulated in the ES corresponding to the construction and operational stages of the Proposed Scheme.
- 8.2 An overall qualitative assessment of the cumulative effect on the common sensitive receptors identified will be made using professional judgement and informed by the technical information provided in the ES and supporting appendices.

8.3 A qualitative evaluation at the receptor level will be undertaken and will consider the following:

- Combined magnitude of change;
- Sensitivity (value / importance) of the receptor / receiving environment to change; and / or
- Duration and reversibility of effect.

#### **In-Combination effects**

8.4 The assessment of potential in-combination effects will be undertaken using the methodology outlined below.

#### **Step 1: Identification of Projects for Consideration**

8.5 In order to identify potential 'Approved Projects', a review of the following databases has been undertaken:

- CDC online planning portal;
- OCC online planning portal<sup>76</sup>;
- Planning Inspectorate online register of projects<sup>77</sup>;
- Transport and Works Order Act online register of projects<sup>78</sup>; and
- Parliament Hybrid Bills online register<sup>79</sup>.

8.6 Applicable projects for consideration of in-combination effects were determined using the following criteria:

- Permitted applications submitted to the application portals noted above from September 2017 onwards. It is anticipated that applications prior to this date will have been built out (and therefore form part of the baseline) and/or where subsequent applications have been submitted this would be captured within the search dates;
- Applications with resolution to grant planning permission and permitted applications, either under construction or not yet implemented (unless already considered as part of the baseline scenario);
- Submitted applications not yet determined but which have the potential to be determined prior to the planning determination of the Proposed Scheme;
- The project being of relevant scale: the threshold for consideration has been the Schedule 2 criteria in the EIA Regulations, at which there is a potential for 'likely

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<sup>76</sup> <https://planning.cumbria.gov.uk/>

<sup>77</sup> <https://infrastructure.planninginspectorate.gov.uk/projects/register-of-applications/>.

<sup>78</sup> <https://www.gov.uk/government/collections/twa-inspector-reports-and-decision-letters>.

<sup>79</sup> <https://www.parliament.uk/business/bills-and-legislation/current-bills/hybrid-bills/>.



significant effects'. However, it is recognised that this needs to be applied with caution; and

- Applications within a 1km radius of the Site, with consideration given to projects on the periphery of this.

- 8.7 This produced a shortlist of projects for evaluation in the ES, which are outlined in **Table 8.1**.
- 8.8 As identified within the above criteria, the shortlist considered projects that have submitted applications, rather than any projects that are foreseeable, future proposed uses or allocated sites. This is due to it being unlikely that there will be sufficient information to inform a robust in-combination assessment for projects where no application is yet submitted.
- 8.9 Where there are requests for EIA Scoping Opinions or potential for allocated sites to come forward with applications, the status of these will be monitored in advance of submission of the Application, to determine if sufficient information for in-combination assessment becomes available at a point at which they could be considered in the ES.
- 8.10 We have assumed that if there is a requirement for any other projects to be considered, these will be defined in advance of or as part of CDC's Scoping Opinion. This is to ensure sufficient time for them to be considered within any modelling that may underpin the assessments within the ES.

**Table 8.1: Approved Projects identified for in-combination assessment**

Turley ID	Reference and address	Description	Distance and direction	Status	EIA?
1	18/01882/OUT Drayton Lodge	Outline: Residential development, comprising the erection of up to 320 dwellings including affordable housing, together with a local centre of 0.5ha (providing retail and community facilities), landscaping, public open space, playing fields, allotments, access and associated infrastructure.	70m west	Under construction	No
2	21/03426/OUT Land Opposite Hanwell Fields Recreation	Outline planning application of up to 78 dwellings and associated space with all matters reserved other than access.	600m south-east	Under construction	No

**Step 2: Assessment of In-Combination Effects**

- 8.11 The shortlist outlined in **Table 8.1** will be further evaluated in the ES based on the available documentation which support the application.
- 8.12 For there to be a potential in-combination effect, there needs to be a potential effect on the same receptor for a similar duration within the overall programme.
- 8.13 Therefore, the sensitive receptors identified for the Proposed Scheme will be cross checked against the receptors identified and considered within the submitted planning documents for the Approved Projects (**Table 8.1**). Where utilised, the documents will be referenced in the ES. In addition, consideration will be given to whether there is a concurrent construction stage or year of opening / operational stage with the Proposed Scheme. Where this is unknown, appropriate assumptions will be applied.
- 8.14 There may be effects at the project level which require due consideration and management but these effects will not be reconsidered as part of the assessment.
- 8.15 As noted in **Section 5**, however, there may be effects which are not likely to be significant for the Proposed Scheme in isolation, but require assessment in-combination with the Approved Projects. The in-combination effects assessment will include the appraisal of the loss of agricultural land resulting from the development of the Proposed Scheme and the Approved Projects to ascertain whether a cumulative 20ha of BMV land will be lost from the local area.
- 8.16 A qualitative evaluation at the receptor level will consider the following:
- Magnitude of change identified in the relevant technical assessments;
  - Sensitivity (value / importance) of the receptor / receiving environment to change; and / or
  - Duration and reversibility of effect.
- 8.17 Through a combination of the qualitative evaluation and mitigation identified in the EIA and presented in the ES, conclusions will be drawn as to the likelihood for significant in-combination environmental effects.

## 9. Summary

9.1 As part of the EIA Scoping process, a number of environmental topics have been identified for which no significant effects are anticipated to arise and therefore will not be considered further within the EIA or reported in the ES. These are outlined in **Chapter 5** and are summarised as follows:

- Agricultural land and soils;
- Ground conditions;
- Water resources, flood risk and drainage;
- Transport and access;
- Air quality;
- Noise and vibration;
- Biodiversity;
- Socio-economics and human health;
- Climate change;
- Obtrusive lighting;
- Microclimate (daylight, sunlight and overshadowing and wind microclimate);
- Waste and resources; and
- Risk of major accidents and/or disasters.

9.2 As part of the EIA Scoping process, environmental topics for which significant effects are anticipated to arise have been identified. These are outlined in **Chapters 6 and 7** and are as follows:

- Built Heritage and Archaeology; and
- Landscape and Visual.

9.3 **Table 9.1** provides a summary of the scope of each of the environmental topics 'scoped in', outlining both the environmental effects considered not to be significant (which therefore are to be scope out of the EIA and not reported in the ES) and the likely significant environmental effects identified that will be assessed further within the EIA and reported in the ES.

**Table 9.1: Summary of environmental topics and effects to be considered in the ES**

Environmental Topic	Effects which are not significant and are proposed to be scoped out of the EIA	Likely significant environmental effects
Built Heritage and Archaeology	Chapter to the setting of Drayton Conservation Area	Change to the setting of Designated Heritage Assets
		Physical impacts on archaeological remains
Landscape and Visual	Changes to landscape character of landscape designations during construction and operation	Changes to landscape character
	Changes to landscape character of the Farmland Plateau Landscape Type during construction and operation	Changes to the visual amenity experienced by receptors
	Changes to the visual amenity of visual receptors beyond 1km from the Site during construction and operation	

## Appendix 1: Figures

## **Appendix 2: Structure of the ES**

### **Volume 1: Main Text and Figures**

- **Chapter 1: Introduction**
- **Chapter 2: Approach to EIA**
- **Chapter 3: Site Context**
- **Chapter 4: Development Specification**
- **Chapter 5: Consideration of Alternatives**
- **Chapter 6: Built Heritage and Archaeology**
- **Chapter 7: Landscape and Visual**
- **Chapter 8: Assessment of Cumulative Effects**
- **Chapter 9: Summary**

### **Volume 2: Appendices**

### **Volume 3: Environmental Management Plan**

### **Volume 4: Non-Technical Summary**

## Appendix 3: Preliminary Environmental Management Plan

The Preliminary Environmental Management Plan below defines the actions identified through the scoping process that will be employed to manage environmental effects during the construction and operational stages of the Proposed Scheme. These will be incorporated into Volume 3: Environmental Management Plan of the ES and should be used as a mechanism to secure the mitigation considered within the ES, largely through conditions and S106 agreements.

**Table A3.1: Preliminary Environmental Management Plan**

### Primary Mitigation

Detail of which is outlined in **Chapter 4** and will be outlined fully in Chapter 4: Development Specification of the ES.

#### 1) The Proposed Scheme

- a) The Proposed Scheme is for the following use classes and quantum:
  - i) Up to 170 residential units (Use Class C3);
  - ii) Internal roads (from a new junction on Warwick Road), parking surface water drainage and green spaces/landscaping.

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#### 2) Height

- a) Residential units will be up to 2.5 storeys in height (11.5m AFL).

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#### 3) Landscape Strategy

- a) Approximately 7.1ha of Public Open Space will be provided within the Proposed Scheme, comprising:
  - i) Approximately 4.94ha of Wildflower Meadow and Parkland;
  - ii) Approximately 1.33ha of Woodland Planting close to the Site boundaries;
  - iii) Approximately 0.45ha of Informal Sports Provision in the northeast of Parcel A;
  - iv) A SuDS attenuation basin in the northeast of Parcel B; and
  - v) A Children and Youth Combined Natural Play Space in the southwest of Parcel B; and
  - vi) A network of mown grass trails through the Site, connecting to an enhanced PRow 191/6/30 in a green corridor.

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#### 4) Biodiversity Strategy

- a) In addition to the Landscape Strategy measures above, existing hedgerows will be enhanced, and new hedgerows will be planted throughout the Site;
  - b) Boundary vegetation will be retained and woodland extended where possible;
  - c) Species-rich grasslands will create strong green linkages/corridors across the Site;
  - d) Suitable bird boxes will be integrated into/erected onto new buildings within the Site and mature trees at the Site boundaries, such as house sparrow terraces, swift 'nest bricks' and swallow 'cups'. The quantum, design and location of integrated bird
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nesting features would be designed with reference to CDC guidance note 'Biodiversity in the Built Environment, Good Practice Guide 1';

- e) 'Dark zones' will be located in close proximity to retained/created linear foraging habitats and/or roosts, especially along Gullicote Lane and woodland edge habitats of the Site, which was identified as a commuting and foraging corridor for bats during the activity surveys;
- f) A sensitive lighting strategy would be designed with reference to the best practice guidance for bats and lighting<sup>80</sup>, with lighting used where possible which has a warm white output (2700K or less), with directional capacity such as LED and with no UV component. In addition, optics would be used to increase lighting directionality. Additional mitigation should include shielding of lights with accessories such as hoods, covers, louvres and shields where appropriate; and
- g) Badger setts will be retained and buffered along the northern Site boundary from the built development by at least 30m.

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#### **5) Surface Water Drainage Strategy**

- a) A SuDS attenuation pond fed by drainage swales from dwellings will be located in the northeast of Parcel B;
- b) Rain gardens will flank the primary access road and permeable paving will be used for secondary roads and driveways/parking area;
- c) Sustainable Drainage Systems (SuDS) will be incorporated into the surface water drainage network, in accordance with CIRIA 753 – The SuDS Manual where practical; and
- d) The design of the surface water drainage system which will take into account the 1 in 100 year storm event and required climate change allowances (40%).

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#### **6) Foul Water Drainage Strategy**

- a) A foul water pumping station will be installed at the southern boundary of Parcel A to transport foul flows until a gravity connection can be achieved to the public sewer.

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#### **7) Noise Mitigation**

- a) Suitable internal noise levels will be achieved through standard double glazing with appropriate acoustic trickle ventilation.
- b) Analysis of the daytime sound level predictions at ground floor shows that the highest glazing specification required to meet the guideline values within habitable rooms is 30dB  $R_w + C_{tr}$ .
- c) Standard thermal double glazing (4mm float-20mm cavity-4mm float or similar) is generally capable of providing up to 30dB  $R_w + C_{tr}$  (the weighted sound reduction index, which takes into account the road traffic frequency spectrum) sound reduction.
- d) The installation of standard thermal double glazing is therefore expected to be sufficient to reduce sound levels to within the guideline values at all façades, for living rooms at ground floor level.

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<sup>80</sup> Bats and Artificial Lighting in the UK (08/2018). *Bats and the Built Environment Series*. The Bat Conservation Trust, London

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- e) Analysis of the night-time maximum sound level predictions at first floor shows that the highest glazing specification required to meet the guideline values within bedrooms is 35dB  $R_w + C_{tr}$ .
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#### **8) Building Overheating**

- a) As part of the detailed design a sample of units in buildings will undergo thermal dynamic modelling, or will be assessed in accordance to emerging national overheating guidance through the Building Regulations to assess and reduce the risk of summer overheating taking into account future climate scenarios; and
  - b) Where measures are provided to reduce the risk of overheating this will be done in accordance with the cooling hierarchy.
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#### **9) Ground Contamination/Gas Protection and Stabilisation**

- a) All new buildings will be designed in line with CIRIA 'Assessing risks posed by hazardous ground gases to buildings' (C665)<sup>81</sup> and British Standard 8485 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'. In addition, testing and verification of such systems will be completed in line with C735<sup>82</sup>; and
  - b) Information regarding the exact foundations has not been finalised and will be subject to final building design and underlying ground conditions; however, a mix of piled and non-piled foundations are anticipated as a worst case scenario. At this stage, foundations could include a combination of shallow strips and piled foundations.
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#### **10) Site Security Measures**

- a) The detailed design of the Proposed Scheme will be informed by 'Secure by Design' principles;
  - b) Sites will be kept secure during the construction stage to ensure that potential for crime and anti-social behaviour is minimised. Adoption of security measures including security lighting and on-Site security; and
  - c) Buildings will include fire alarms.
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#### **11) Access**

- a) Permanent vehicular access / egress for the Proposed Scheme will be via Warwick Road via and new access point. Internal roads will provide access for residents, visitors, deliveries, servicing and parking; and
  - b) The Proposed Scheme will retain, enhance and link to the surrounding PRoW network including pedestrian and cycle access via a route to development south of the Site.
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#### **12) Lighting**

- a) New lighting installations at the proposed access, along internal routes and within landscaping areas will be designed and installed in line with relevant standards and
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<sup>81</sup> CIRIA (2007) C665 Assessing risks posed by hazardous ground gases to buildings.

<sup>82</sup> CIRIA (2014) C735 Good practice on the testing and verification of protection systems for buildings against hazardous ground gases.

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guidance, such as British Standard 5489-1:2020<sup>83</sup>, Lighting Guide 1: The industrial environment<sup>84</sup> and LG6: The exterior environment<sup>85</sup>.

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### 13) Waste Strategy

- a) The Proposed Scheme will be designed in order to take account of appropriate provision for waste storage and handling facilities/areas, inclusive of areas for segregation of waste and recycling;
- b) Waste from dwellings once operational will be collected in line with CDC procedures; and
- c) A detailed Waste Strategy will be developed for the Proposed Scheme as part of a future reserved matters application which will set out the principles and strategy for the management of waste and recycling.

#### Tertiary Mitigation

Detail of which is outlined in **Chapters 4 – 7** and will be outlined fully in Chapter 4: Development Specification and Technical Chapters 6 and 7 of the ES.

- 14)** A Construction Environmental Management Plan (CEMP) will be prepared to include the following tertiary measures (a Framework CEMP has been submitted with the Application):
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### 15) General

- a) Site securement will be achieved through a combination of secure fencing, barriers and hoarding, depending on the exact requirements and proximity to specific works. In addition, the principal contractor will be responsible for the provision of construction staff at key interfaces if appropriate.
  - b) During construction, either a central compound and/or a number of satellite compounds will be required for the contractor and appointed subcontractors. The exact location of the construction compound(s) is unknown at this time, but it will be within the Site. It is assumed that the principal contractor will identify the proposed compound locations within a Site Layout Plan as part of the CEMP.
  - c) Phasing of development to reduce the prominence of construction works on the local skyline.
  - d) Site security arrangements during the construction stage will be in line with the requirements set out in the Construction (Design and Management) Regulations 2015.
  - e) The CEMP will include a suitable location for stockpiles.
  - f) Construction working hours will be 08:00 to 17:00 Mondays to Friday; 08:00 to 12:30 on Saturday. There will be no construction on Sundays, Public and Bank Holidays. Exceptions may arise, for example, when abnormal loads are delivered / offloaded or to conduct specialist activities (e.g. service diversions) and appropriate permissions will be sought from CDC should these circumstances arise.
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### 16) Traffic Management

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<sup>83</sup> British Standard 5489-1:2020 Design of road lighting Part 1: Lighting of roads and public amenity areas – Code of Practice.

<sup>84</sup> CIBSE (Society of Light and Lighting) (2018) Lighting Guide 1: The industrial environment.

<sup>85</sup> CIBSE (2016) LG6: The exterior environment.

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- a) A Construction Traffic Management Plan (CTMP) will be prepared by the principal contractor (when appointed) which will set out the proposed timing and routing of construction traffic and measures to enforce such routing (i.e. signage).
  - b) The CTMP will include best practice measures where construction traffic is expected to be within proximity to pedestrian footways.
  - c) The CTMP will be submitted as part of the CEMP to CDC for approval prior to any commencement on Site and be secured by an appropriately worded condition on any permission.
  - d) Each construction working area will include clearly defined vehicular and pedestrian access to the construction working area, with separate entrances for each.
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#### **17) Noise**

- a) Any compressors brought on to the Site will be silenced or sound reduced models will be fitted with acoustic enclosures.
  - b) All pneumatic tools will be fitted with silencers or mufflers.
  - c) Care will be taken when erecting or striking scaffolds to avoid impact noise from banging steel. All operatives undertaking such activities will be instructed on the importance of handling the scaffolds to reduce noise to a minimum.
  - d) Care will be taken when unloading vehicles to minimise noise. Delivery vehicles will be routed so as to minimise disturbance to local residents. Delivery vehicles will be prohibited from waiting within or in the vicinity of the Site with their engines running.
  - e) All plant items will be properly maintained and operated according to manufacturers' recommendations in such a manner as to avoid causing excessive noise. All plant will be sited so that the noise impact at nearby noise sensitive properties is minimised.
  - f) Piling and compaction plant and practices will be selected to ensure that vibration levels are at the lower end of the ranges.
  - g) Compaction plant will not be started up in proximity to receptor locations (residential properties). Any steady state compaction work that is necessary close to receptors will be of the minimum necessary duration such that any adverse impacts will be kept to a minimum.
  - h) Particularly noisy activities, or activities taking place close to receptors (residential properties) (commensurate with the worst-case conditions assessed) will be screened by local hoarding as necessary.
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#### **18) Air Quality**

- a) The CEMP will be informed by the Institute of Air Quality Management (IAQM) Guidance and would include prevention measures, such as screening stockpiles of materials, deployment of windbreak netting, dampening exposed soils and use of less polluting Non-Road Mobile Machinery as appropriate and set out requirements for ongoing monitoring and liaison with the local community, and CDC.
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#### **19) Water and Ground**

- a) The CEMP will contain measures set out within the Pollution Prevention Guidance and CIRIA 'Control of water pollution from construction sites' and include specific working methods/practices and monitoring requirements to minimise the risk of detrimental effects on water quality including:
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- i) Washing down or equipment cleaning associated with concrete or cementing processes and provision of facilities to remove sediment prior to disposal;
  - ii) Use of sediment traps on surface water drains;
  - iii) The safe storage of materials and fuels and oils;
  - iv) Wheel washing facilities;
  - v) Screening stockpiles and materials;
  - vi) Use of impermeable materials to prevent ingress into the ground;
  - vii) Provision of treatment facilities for runoff from construction areas;
  - viii) Provision of treatment facilities to runoff from construction areas; and
  - ix) Regular sweeping to remove loose sediments.
- b) Construction workers will adhere to best practice Health and Safety when handling and transporting contaminated soils and should follow normal hygiene practices.
  - c) Where contaminated soils are excavated for remediation, the sides and base of the void will be validated through visual, olfactory or chemical analysis means before being backfilled with clean material.
  - d) Contaminated arisings will either be treated on Site for later reuse or classified for the purposes of waste and exported from Site.
  - e) Material imported to Site during the construction stage for clean cover layers, engineered fill or working platforms, if required, will be validated for chemical and geotechnical suitability prior to being accepted on Site and for thickness once it is placed in accordance with the approved Specifications.
  - f) New service corridors will be installed during the construction stage.
  - g) Newly formed areas of soft landscaping will require chemically clean, validated topsoil that meets the minimum nutritional standards set out in the British Standard (BS:3882 2015).
  - h) Construction works will be undertaken in accordance with legislative requirements, statutory and regulatory guidance and industry best practice, e.g. safe systems of work (SSoW), risk assessments and method statements (RAMS) and provision of appropriate personal protective equipment (PPE).
  - i) Visitor access will be restricted during the works and no trespassers will be able to access the construction area.
  - j) All earthworks and foundation design will be in accordance with relevant industry guidance, including but not limited to CIRIA Report C572: Treated ground engineering properties and performance<sup>86</sup>, British Research Establishment document FB75: Building on Fill - Geotechnical Aspects<sup>87</sup> and British Standard 6031:2009: Code of Practice for Earthworks<sup>88</sup>;
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## 20) Lighting

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<sup>86</sup> CIRIA (2002). Report C572: Treated ground engineering properties and performance.

<sup>87</sup> British Research Establishment (2015). FB75: Building on Fill - Geotechnical Aspects. 3<sup>rd</sup> Edition.

<sup>88</sup> British Standard (2009). 6031:2009: Code of Practice for Earthworks.

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- a) lighting would be controlled through the implementation of best practice measures, informed by the ILP 'Guidance Note 1 for the reduction of obtrusive light' and would include:
    - i) The use of sufficient lighting units for the task in hand to avoid the need for tall, wide beam lighting units;
    - ii) The reduction of fixed lighting outside working hours; and
    - iii) Any requirements for ongoing monitoring and liaison with stakeholders.
  - b) Measures as avoiding any artificial lighting, unless absolutely critical and the use of hoods, cowls and timers to restrict lightspill only to where it is required and for as long as it is required.
  - c) Lighting within the Proposed Scheme will be designed in accordance with best practice guidance produced by the Institute for Lighting Professionals and Bat Conservation Trust<sup>89</sup>.
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## **21) Waste**

- a) Hazardous/contaminated waste will be handled, processed and removed from Site by suitability qualified contractors, all being undertaken in line with The Hazardous Waste (England and Wales) Regulations 2005.
  - b) Waste produced during construction would be controlled through the implementation of the CEMP, the detailed version of which will be secured by planning condition. The final CEMP will be informed by the waste provisions of the Environmental Protection Act 1990<sup>90</sup> and the Environmental Protection (Duty of Care) Regulations 1991<sup>91</sup> and will set out the principles and legal requirements relating to waste (including hazardous waste).
  - c) The final CEMP will also describe how materials will be managed efficiently and disposed of legally during construction. It will also outline the aims, objectives and on-going management responsibilities, including management practices, to be implemented during the construction stage, and will set targets for the reduction, diversion from landfill and reuse of waste.
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## **22) Habitat Management**

- a) The final CEMP will be produced in light of best practice and include measures such as sensitive storage of materials, wheel washing, and implementation of measures such as interceptor fencing, as required to avoid effects to habitats.
  - b) Implementation of temporary protective fencing or Ecological Protection Zones with appropriate buffers will also prevent potential damage or disturbance of retained habitats.
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<sup>89</sup> ILP / BCT (2018). *Guidance Note 08/18: Bats and Artificial Lighting in the UK*. Institute of Lighting Professionals and Bat Conservation Trust.

<sup>90</sup> Environmental Protection Act 1990 No. 43 Available at: <https://www.legislation.gov.uk/ukpga/1990/43/contents> [Accessed: 30/09/2022].

<sup>91</sup> Environmental Protection (Duty of Care) Regulations 1991 No. 2839. Available at: <https://www.legislation.gov.uk/uksi/1991/2839/made#:~:text=The%20duty%20requires%20such%20persons,person%20or%20to%20a%20person> [Accessed: 30/09/2022].

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- c) Completion of habitat management and clearance works outside of the main bird nesting season, or alternatively immediately following a check for nesting birds completed by a suitably qualified ecologist.
  - d) Completion of a pre-commencement aerial inspection survey of trees in line with European Protected Species legislation to ensure the absence of bats. Any mitigation for the loss of a bat roost will also be undertaken in line with this legislation.
  - e) Completion of pre-commencement badger walkover survey to identify new badger activity, covering of trenches overnight and daily pre-commencement checks.
  - f) Illuminated Site compounds will be located away from the tree lined Gullicote Lane, woodland edges, mature trees, and hedgerows. Where required, the times that lights are would be controlled to avoid lights being illuminated between and including dusk and dawn hours, allowing some dark periods for bats and other wildlife.
  - g) If required, additional measures based on advice from the suitably qualified ecology can be secured within the final CEMP.
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### **23) Climate Change**

- a) Provision of climate change adaptation and measures to reduce risks to human health from overheating such as provision of shaded refuges and potable water supplies during construction.
  - b) Climate change adaptation and measures to reduce water use during construction.
  - c) Measures will be put in place to protect the Site from increased risk of flooding, during construction compounds will include appropriate measures, which may include raised levels and temporary drainage; protection of the Site and wider area from an increased risk of flooding and potential pollution effects through the provision of appropriate drainage and pollution prevention systems.
  - d) The Proposed Scheme will be designed in accordance with current guidance and best practice, and this will include the consideration of changing climate on stability of the ground conditions, influencing foundation design as necessary.
  - e) Where possible, as part of the remediation and construction of the Site energy, fuel use and carbon emissions associated with those stages will be monitored with measures put in place to reduce emissions.
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### **24) Utility Management**

- a) Consultation will be sought with Thames Water to identify the capacity of the local foul water infrastructure, however, it is assumed that the environmental effects of any increase in foul water will be controlled through the discharge consents or permits associated available to Thames Water.
  - b) If necessary, it is thought that any mitigation required would be limited to sewer operator delivered reinforcement works to the local foul water network.
  - c) Thames Water will be consulted prior to the start of any works to understand suitable connection points for foul water from welfare facilities during the construction stage.
  - d) Consultation with Thames Water is required to understand whether potable water supply is sufficient. If a sufficient supply is available. If mitigation measures are required to facilitate the necessary supply, then these mitigation measures will ensure that the Proposed Scheme does not have a significant effect on the local water supply network.
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- e) Any foul drainage associated with construction works could utilise existing foul drainage serving the current or former Site buildings or Portaloo type of arrangements could be employed.
  - f) Any utilities requiring diversion, stopping up or temporary relocation will be undertaken in line with an agreed strategy with the relevant district network operators.

#### **Secondary Mitigation**

When identified these measures will be outlined fully in Technical Chapters 6 – 9 of the ES.



## **Appendix 4: Agricultural Land Quality Report**

## **Appendix 5: Air Quality Assessment**

## **Appendix 6: Ecological Appraisal**

## **Appendix 7: Flood Risk Assessment and Drainage Strategy**

## **Appendix 8: Landscape and Visual Impact Assessment**

## **Appendix 9: Phase 1 Desk Study Report**

## **Appendix 10: Transport and Access Appendix**

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