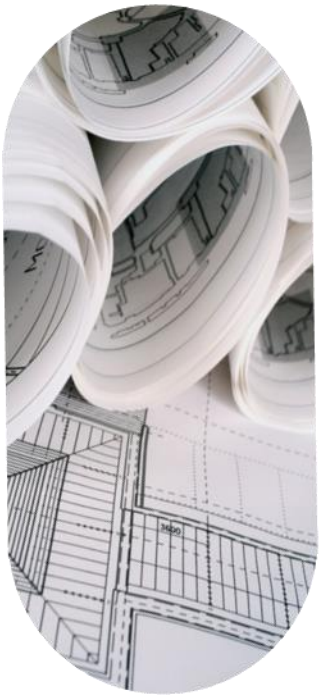
LAND OFF CAWSTON LANE, CAWSTON, RUGBY

EIA SCOPING REPORT

L&Q ESTATES

JULY 2022



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APPENDICES (appended separately)

1. INTRODUCTION

1.1. Purpose of this Document

1.1.1. This document is an Environmental Impact Assessment (EIA) Scoping Report and has been prepared by Marrons Planning on behalf of L&Q Estates.

1.1.2. The Scoping Report supports a formal request to Rugby Borough Council (RBC) for a written 'Scoping Opinion' in relation to an EIA for a forthcoming planning application by L&Q Estates.

1.1.3. Regulation 15 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as the 'EIA Regulations') states that:

> '*(2) A request under paragraph (1) must include –*
>
> *a) In relation to an application for planning permission –*
>
> *i. A plan sufficient to identify the land;*
>
> *ii. A brief description of the nature and purpose of the development, including its location and technical capacity;*
>
> *iii. An explanation of the likely significant effects of the development on the environment; and*
>
> *iv. Such other information or representations as the person making the request may wish to provide or make.'*

1.1.4. This document provides the information required under Regulation 15 of the EIA Regulations.

1.2. The Planning Application

1.2.1. L&Q Estates will be applying to RBC for outline planning permission for the demolition of all existing buildings and construction of up to 550 residential dwellings off Cawston Lane, Cawston, Rugby.

1.2.2. The application site is located within the South West Rugby Sustainable Urban Extension (SUE) which is allocated for development under Policy DS8 of the Rugby

Local Plan (June 2019) and supported by the South West Rugby Masterplan Supplementary Planning Document (SPD, June 2021). Further information on the SUE is provided in Section 2.

1.2.3. The site location is shown on the plan appended at Appendix 1.

1.3. Structure of this Document

1.3.1. In order to provide RBC with the information required under Regulation 15 of the EIA Regulations, this Scoping Report contains the following:

Section 2:	Overview of the site and its surroundings;
Section 3:	Brief description of the proposed development;
Section 4:	Description of the proposed EIA methodology;
Section 5:	Explanation of the likely significant effects of the proposed development and details of the topics proposed to be included in the EIA;
Section 6:	Explanation of the topics listed in Schedule 4 of the EIA Regulations that are proposed to be excluded from the EIA;
Section 7:	Summary

1.4. Marrons Planning and the EIA Technical Team

1.4.1. Marrons Planning will coordinate the EIA and produce the Environmental Statement (ES).

1.4.2. The technical chapters of the ES will be prepared by an appropriate team of technical experts, details of which will be provided in the ES.

2. THE SITE AND SURROUNDINGS

2.1 Introduction

2.1.1 This section provides an overview of the application site, its context and also the wider South West Rugby SUE allocated under Policy DS8 of the Rugby Local Plan and supported by the South West Rugby Masterplan SPD.

2.2 Site Context

2.2.1 The site is located to the south east of Cawston, a village and parish which is distinct from but adjoins the south west boundary of the market town of Rugby.

2.2.2 The surrounding area is predominately rural at present, with suburban areas of Cawston to the north.

2.3 The Site

2.3.1 The application site is approximately 19.39 ha, with vehicular access onto Cawston Lane. The land is currently in agricultural use and is devoid of any built development save from two agricultural barns accessed from Cawston Lane.

2.4 The South West Rugby SUE

2.4.1 The site forms part of the South West Rugby SUE which is allocated for residential development (circa 5,000 dwellings), employment land (circa 35ha B8 employment use), green and blue infrastructure, schools, convenience store and other retail uses, GP surgery, provision for a Safer Neighbourhood Team, and other local facilities within the adopted Local Plan. The site is identified for predominately residential development in the Masterplan SPD, along with Open Space.

3. THE PROPOSED DEVELOPMENT

3.1 Introduction

3.1.1 This section provides a brief description of the proposed development and other nearby developments, including those within the South West Rugby SUE that would form part of the cumulative assessment.

3.2 The Proposed Development

3.2.1 The proposed development that will be subject to the EIA includes the following: the demolition of all existing buildings and residential development of up to 550 dwellings, creation of associated vehicular access points to Cawston Lane, pedestrian / cycle access points, parking, landscaping, drainage features, open space, children's play area and associated infrastructure.

3.2.2 As the proposed development is being applied for in outline, it does not include detailed plans as would be submitted for a full planning application.

3.2.3 Instead, the proposed development will be based on a set of development parameters and a quantum of development e.g. land use, maximum number of dwellings, maximum building height etc. This will provide a robust basis for the EIA.

3.3 Cumulative Development

South West Rugby SUE

3.3.1 The site is located within the South West Rugby SUE, which is allocated under Policy DS8 of the Rugby Local Plan for residential development (circa 5,000 dwellings), employment land (circa 35ha B8 employment use), green and blue infrastructure, schools, convenience store and other retail uses, GP surgery, provision for a Safer Neighbourhood Team, and other local facilities within the adopted Local Plan.

3.3.2 As development of the SUE is considered to be 'reasonably foreseeable', the likely significant effects of the proposed development with the wider South West Rugby SUE will be assessed as part of the EIA.

3.3.3 Reasonable 'worst case' parameters shall be derived from the development proposed under Policy DS8 in order to inform the cumulative assessment. The parameters shall

take into account permitted and emerging proposals for development of the SUE where possible. It will also be informed by the Masterplan SPD for the SUE adopted by RBC in June 2021.

ASHLAWN ROAD

3.3.4 Full planning permission has been granted for up to 860 dwellings within the South West Rugby SUE to the east of the application site (LPA Refs: R13/2102 for outline permission and R19/0941, R19/1185, R20/0124 and R21/0689 for reserved matters approvals). The site is under construction.

3.3.5 The outline planning application included an Environmental Statement and this shall be used to inform the cumulative assessment.

EMPLOYMENT LAND (TRITAX SYMMETRY)

3.3.6 An outline planning application has been approved for commercial development for up to 186,500sqm of buildings for Warehousing and Distribution with ancillary offices and other infrastructure, within the South West Rugby SUE to the south west of the application site (LPA Refs: R16/2569 for outline permission and R21/0789 and R21/0790 for reserved matters applications).

3.3.7 The outline planning application included an Environmental Statement and this shall be used to inform the cumulative assessment.

LAND SOUTH OF COVENTRY ROAD (L&Q ESTATES)

3.3.8 An outline planning application has been submitted for residential development for up to 210 dwellings and a two form entry primary school within the South West Rugby SUE to the north east of the application site (LPA Ref: R18/0936).

3.3.9 This application includes an Environmental Statement and this shall be used to inform the cumulative assessment.

LAND SOUTH OF COVENTRY ROAD (TRITAX SYMMETRY)

3.3.10 An outline planning application has been submitted for residential development for up to 275 dwellings within the South West Rugby SUE to the west of the application site (LPA Ref: R18/0995).

3.3.11 This application includes an Environmental Statement and this shall be used to inform the cumulative assessment.

3.4 Alternatives

3.4.1 The EIA Regulations require an ES to include an outline of the main alternatives studied by the Applicant and an indication of the main reasons for this choice taking into account the environmental effects.

3.4.2 This section provides an overview of how alternatives will be considered in the EIA.

Site Location

3.4.3 As the site is allocated within the Local Plan for residential development, no alternative locations will be assessed as part of the EIA.

Site Layout

3.4.4 Designing the layout of the proposed development will be an iterative process informed by consultation, and review of constraints and assessments during the design stage, including mitigation identified through the EIA process. Where alternative layouts have been considered that would likely result in significant changes in environmental effects, these will be assessed as part of the EIA. Where no significant change is likely, the alternatives will not be included in the assessment.

4. PROPOSED EIA METHODOLOGY

4.1 Introduction

4.1.1 This section provides an overview of the overarching methodology to be used in the EIA. Details of the specific assessment methodologies for each of the proposed technical topics are included in Section 5.

4.2 Consultation

4.2.1 RBC will consult with stakeholders through this scoping process and there will be further consultation through subsequent discussions between the consultant team appointed by L&Q Estates and appropriate officers at RBC or external consultees.

4.2.2 Comments received will be set out in the ES, along with how and where the issues raised have been addressed.

4.3 Technical, Spatial and Temporal Scope

4.3.1 The technical scope of the EIA will be determined through this EIA scoping process and subsequent consultation exercises with stakeholders and the public. Should the scope of the EIA differ from that set out in the EIA Scoping Opinion, justification will be provided for change in the scope.

4.3.2 The general spatial scope for the EIA is the application site, with the cumulative assessment also including the wider South West Rugby SUE. Where the spatial scope for a particular technical topic differs from this e.g. in the assessment of effects on the highway network, this will be set out in the technical ES chapter.

4.3.3 The temporal scope shall be based on an estimation of the likely construction start date and durations for the construction and occupational phases. Where the temporal scope for a particular technical topic differs from this e.g. in the assessment of landscape and visual effects, this shall be set out in the technical ES chapter.

4.4 Assessment of Environmental Effects

4.4.1 The purpose of the ES is to identify and evaluate the likely significant environmental impacts associated with the proposed development. These are then assessed based

on the nature of the impact (following mitigation) and the nature of the receiving environment. This determines the significance of their effect.

4.4.2 There is no statutory definition of significance, but in the ES the following descriptive terms will be used:

- Substantial
- Moderate
- Minor
- Negligible (not significant)

4.4.3 The meaning of the terms in relation to the nature of impacts and receptors is shown in the following indicative matrix. However, as the nature of the impacts and the receptors vary by topic, the criteria used to predict the significance of effects arising will be set out in the methodology section of each of the technical assessment chapters, while still incorporating the standard terminology.

		Nature of Receptor (Sensitivity / Value / Importance)			
		High	**Medium**	**Low**	**Negligible**
Nature of Impact (Magnitude / Probability / Reversibility etc)	**High**	Substantial	Substantial	Moderate	Negligible
	Medium	Substantial	Moderate	Minor	Negligible
	Low	Moderate	Minor	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

4.4.4 The following terms will also be used to aid the description of the effect:

Beneficial – positive effects
Adverse – negative effects
Short / Medium / Long Term – length of the effect
Permanent – effect cannot be reversed
Temporary – effect can be reversed (e.g. construction impacts)
Direct – effects that are a direct result of the proposed development
Indirect – effects that may be a 'knock-on' result of direct effects

4.4.5 A summary of potentially significant 'in-combination' effects will be included in the summary chapter.

4.4.6 In combination effects are where a single receptor experiences several different types of effects, e.g. nearby residents could be impacted by a combination of noise, dust and visual impacts during construction of a proposed development.

4.4.7 A matrix approach will be used to identify where there may be multiple residual effects on a particular receptor.

4.5 Mitigation of Environmental Impacts

4.5.1 The development of mitigation measures is an integral part of EIA. Mitigation measures will be set out in each of the technical assessment chapters where significant impacts are identified, with the aim of avoiding, reducing, or compensating for potential adverse effects and improving potential beneficial effects.

4.5.2 In each technical chapter, the specialists undertaking the EIA will identify appropriate mitigation measures based on their assessment of potential significant impacts. These mitigation measures are divided into:

- **Inherent mitigation measures –** those 'designed in' to the scheme and certain to be delivered, i.e. what is proposed on the application form and consented drawings, e.g. parameter plans
- **Standard mitigation measures –** e.g. mitigation with a high degree of certainty over delivery, e.g. measures to be included in a draft Construction Environmental Management Plan (CEMP) or secured through planning conditions
- **Actionable mitigation measures –** those that require a controlling mechanism or legal undertaking to be implemented, but are under the control of the applicant, Local Authority, Highway Authority or Education Authority and therefore, have a good certainty over delivery, e.g. measures included in a S106 agreement.

4.5.3 The determination of the significance of effects in each of the technical chapters is presented under the following scenarios:

- **Impact Assessment –** with inherent and standard mitigation measures implemented
- **Residual Impact Assessment –** with inherent / standard and actionable mitigation measures implemented

4.6 Assessment of Cumulative Effects

4.6.1 The assessment of potentially significant cumulative effects will be set out in each of the technical ES chapters and a summary provided in the summary chapter.

5. TECHNICAL TOPICS TO BE SCOPED IN

5.1 Introduction

5.1.1 This section provides an overview of the technical topics included in Schedule 4 of the EIA Regulations that are proposed to be included within the scope of the ES (i.e. 'scoped in'). These topics include:

- Landscape and Visual
- Water and Drainage
- Biodiversity
- Highways and Accessibility
- Noise and Vibration
- Air Quality
- Cultural Heritage
- Climate Change

5.1.2 Each of the following sub-sections provides a summary of the environmental baseline in relation to that topic and an overview of the likely significant effects, as required under Regulation 15 of the EIA Regulations.

5.1.3 The proposed methodology for each of the technical assessments is also included. The Scoping Opinion from RBC should confirm whether the proposed methodology is acceptable and if necessary, set out what amendments to the methodology are deemed to be required.

5.2 Landscape and Visual

Introduction

5.2.1 This ES Chapter will be produced by Felicity Churchyard and Chris Armstrong from CSA Environmental. The landscape and visual chapter will consider the effects of the proposed development on landscape and visual receptors. It will consider the degree of change to the existing landscape character and the potential effects of the development on representative viewpoints. Mitigation will be embedded into the proposed scheme in response to this assessment, and these, and further mitigation measures will be described and the effects of the development at completion and after 15 years.

Proposed Assessment Methodology

5.2.2 The assessment will be undertaken in accordance with the methodology as set out below and in accordance with the following published guidelines:

- *'Guidelines for Landscape & Visual Impact Assessment'*, produced jointly by the Institute of Environmental Assessment and the Landscape Institute (GLVIA 3rd edition 2013); and
- *'An Approach to Landscape Character Assessment'*, October 2014 (Christine Tudor, Natural England) to which reference is also made. This stresses the need for holistic assessment of landscape character, including physical, biological and social factors.

5.2.3 The overall scope of the assessment will involve the determination of:

- Landscape and visual impact assessment methodology and significance criteria;
- Zone of Theoretical Visibility ('ZTV') to determine the location of potential assessment viewpoints;
- A photographic record will be provided of key views, when vegetation is both in and out of leaf (If timescales permit);
- Baseline studies, including assessment of existing landscape character and published documents on regional and local landscape character, and the identification of existing visual receptors and public rights of way, particularly those which border the site;
- An assessment of the existing night time character;
- Review of development proposals and proposed mitigation measures;
- Assessment of the effects of the development on existing landscape assets, such as vegetation, water bodies etc, and will be informed by an Arboricultural Impact Assessment carried out as part of the Environmental Statement
- Landscape and visual impact assessment at Year 1 and Year 15 (residual effects) from completion;
- Commentary on construction (temporary) effects; and
- Commentary on cumulative effects of the Site in relation to surrounding consented schemes.

The Study Area & Receptors

5.2.4 The study area is defined as 2km from the boundaries of the Site, based on initial field work establishing the likely zone of visual influence of the proposed development. It covers the village of Cawston to the north west of the Site and residential properties in the south of Rugby. In the east of the study area is the village of Dunchurch and the A4226. The B4429 (Coventry Road) and the M45 are key transport links in the south east of the study area. Designations within the study area are shown on drawing no: CSA/5436/105 in Appendix 2. The Site and wider study area are not covered by any statutory or non-statutory designations for landscape quality or value. Parts of Cawston Spinney and Fox Covert are identified as ancient woodland to the south and south west of the Site.

5.2.5 Receptors can be divided into two categories, landscape and visual. Potential receptors for the proposed development have been identified through desk based surveys and shall be confirmed through an initial Site visit. A list of potential, but not exhaustive receptors are listed below:

- Dunsmore Landscape Character Area and Dunsmore Plateau Farmlands character type as identified in the Warwick County Council Landscape Guidelines (1993) and Landscape Assessment of the Borough of Rugby – Sensitivity and Condition Study (April 2006)
- Users of Public Right of Way (PRoW) 168/R167/1, through the centre of the Site;
- Users of PRoW to the east, south east and south of the Site (168/R169d/1, 168/R169c/1, 168/R169c/2, 168/R169z/1 168/R168e/2 and 284/R168/4);
- Users of distant PRoW to the north west of the Site (216/R165/1);
- Residential receptors on Cawston Lane, Coventry Road, Dunchurch and new developments in the south of Rugby (Trustees Close);
- Residents of Lime Tree Retirement Village on Cawston Lane;
- Residents of Windmill Cottages;
- Transport routes of Coventry Road, A45, A4071, Lawford Heath Lane and Cawston Lane.

Consultation

5.2.6 The suggested viewpoints are shown on the Aerial Photograph CSA/5436/103 (Appendix 3) the Site Location Plan CSA/5436/104 (Appendix 4), and these are to be agreed through this process with RBC.

Significance Criteria

5.2.7 In assessing EIA development, a judgement needs to be made about whether an effect is likely to be 'significant' in EIA terms. GLVIA3 advises that: *'There are no hard and fast rules about what makes a significant effect, and there cannot be a standard approach since circumstances vary with the location and landscape context and with the type of proposal.'*

5.2.8 For the purpose of this chapter effects of Substantial and Substantial to Moderate Significance are likely to be important considerations at a regional or district scale, and / or an important consideration for decision makers. As such these are considered significant effects.

5.2.9 Moderate effects, while important at a local scale, may be considered as significant depending on the receptor in question. These effects are not anticipated to be key decision-making issues and it is up to the discretion of the professional making the assessment as to whether this effect is considered significant.

5.2.10 Minor effects may be of local concern and are not considered 'significant' in EIA terms. These effects should not be wholly disregarded, however are of limited importance in the decision making process. Negligible or neutral effects would see limited or no change or effects.

5.2.11 Where significant adverse effects are identified, measures to avoid, prevent, reduce or, if possible, offset these effects are recommended (i.e. mitigation measures). The level of effect is then assessed with these measures in place i.e. residual effects.

Current Baseline

Site Character

5.2.12 The Site comprises a small and a large roughly square agricultural fields and a medium sized rectangular field, located alongside Cawston Lane. For the purposes of this assessment the Site has been split into four distinct parcels as shown on CSA/5436/103 in Appendix 3.

5.2.13 Parcel A is the smaller of the two field parcels, currently in agricultural, arable use. The southern and western boundaries of Parcel A are directly adjacent to the mature woodland of Fox Covert, Cawston Spinney. The woodland is identified as Ancient Woodland as well as being protected by a Tree Preservation Order (TPO). The northern boundary comprises a native hedgerow, approximately 1.5-2m in height. There is no existing access into the Site from this parcel.

5.2.14 Parcel B is the small area of woodland separating Parcels A and C. The area of woodland, Fox Covert, is covered by a TPO. There is a small break in the woodland to allow for farm vehicle access between Parcels A & C.

5.2.15 Parcel C comprises the central arable field. The western boundary is adjacent to the mature woodland of Parcel B and abutting the southern boundary is Fox Covert woodland, also covered by a TPO. The eastern boundary of the parcel is composed of a concrete post and barbed wire fence, with scrub and informal sections of sporadic hedgerow along the boundary. Adjacent to the eastern parcel boundary is PRoW 168/R167/1, which crosses the Site in a north-south direction. In the northern corner of the parcel is a small area of hardstanding and two old, disused agricultural barns. The northern boundary of the Site is adjacent to Cawston Lane and comprises a post and wire fence. Along the length of this boundary are remains of a native hedgerow, with large gaps between the segments of hedgerow allowing for clear views into the Site.

5.2.16 Parcel D comprises a medium sized, rectangular, arable field. The southern boundary of the parcel is adjacent to the mature woodland of Boat House Spinney. The western parcel boundary is shared with Parcel C, encompassing PRoW 168/R167/1. The eastern boundary is adjacent to PRoW 168/R169c/2, along the length of this PRoW is a tall, approximately 2m high, hedgerow adjacent to the Site boundary, preventing any views into the Site. The northern boundary, along Cawston Lane, comprises a post and wire

fence allowing for clear views into the Site. There is a small section of tall hedgerow adjacent to the PRoW 168/R/169c/2 entrance.

Published Character Context

5.2.17 The Site is located within the Dunsmore and Feldon National Character Area (NCA Profile 96). It is identified in the Warwick County Council Landscape Guidelines (1993) as lying within the Dunsmore Landscape Character Area (LCA), which is subdivided into three landscape character types, with the site falling within the Plateau Farmlands landscape character type (LCT). The Landscape Guidelines for define the Dunsmore LCA as *'An intensively farmed, and in places urbanised, region, with a varied rolling, dissected topography characterised by low glacial plateaux and incised, meandering river valleys'.*

5.2.18 Warwickshire County Council's Environmental Design Group, Environment and Economy, in partnership with The Living Landscapes Project has produced a Landscape Assessment of the Borough of Rugby – Sensitivity and Condition Study (April 2006) and is based on the LCA's identified in the Warwickshire Landscape Guidelines (1993). The Landscape Assessment describes the Dunsmore LCA as being strongly influenced by its glacial sands and gravels which are reflected in its commons and heathlands, and its insensitively farmed landscape. Meandering raver valleys with flood meadows cut through the landscape providing ecological corridors, which along with pockets of un-improved grassland, some of which are heathy, and two large areas of Ancient Woodland, provide the limited semi-natural habitats in the LCA.

Visual Context

5.2.19 The Site is visually and physically well contained by the mature woodland to the south and south east, at Cawston Spinney, Fox Covert and Boat House Spinney. This area of woodland contains views from the south, south east and south west of the Site.

5.2.20 The local topography rises southwards in the direction of the Site from residential developments in the south of Rugby (Trustees Close), preventing the majority of views from the residential properties in the south of Rugby.

5.2.21 Views from the edge of Dunchurch towards the Site are middle distant and typically filtered by intervening vegetation from field boundaries and hedgerow and tree vegetation along Cawston Lane.

Potential Significant Effects

5.2.22 An iterative design process would include mitigation features that would help to reduce the effects of the proposed development. However, there remains the potential for significant effects for both construction and operational phases on the following receptors;

- Users of PRoW 168/R167/1 through the centre of the Site;
- Users of PRoW to the east, south east and south of the Site (168/R167/1 and 168/R169c/1);
- Residential receptors on Cawston Lane, Coventry Road, Dunchurch and new developments in the south of Rugby (Trustees Close); and
- Residents of Lime Tree Retirement Village on Cawston Lane.

5.3 Water and Drainage

Introduction

5.3.1 This ES Chapter will be produced by Rachel Graham from Wardell Armstrong. Rachel Graham is a Principal Environmental Scientist at Wardell Armstrong.

5.3.2 An assessment will be undertaken to identify the likely hydrogeological and hydrological effects of the Proposed Development.

Proposed Methodology

5.3.3 The desk-based baseline study will examine the condition of watercourses on site and downstream of Site. The hydrology and hydrogeology study area will be a 3km buffer from the Site boundary. In order to ensure the baseline data provides the necessary information for the assessment of the Proposed Development's likely significant effects, it is advised that the following tasks will be undertaken:

- Review of Ordnance Survey (OS) maps to identify surface water features;
- Review of the EA's River Basin Management Plans;

- Identification of the locations and characteristics of catchments, surface water features and springs within and adjacent to the Site;
- Identification of Water Framework Directive (WFD) classifications and objectives, obtained from the EA website for watercourses and waterbodies within and adjacent to the Site;
- Collation of data and location of abstractions and discharge consents within and adjacent to the Site;
- Collation of information on climate (including long term average monthly rainfall figures), surface hydrology and flood risk;
- Identification of hydrogeological conditions and groundwater resources (including groundwater vulnerability and productivity); together with secondary information relating to:
    - Bedrock and superficial geology mapping; and
    - Review of soil mapping.

Approach to Assessment

5.3.4 The assessment will identify likely significant effects from the Proposed Development predominantly resulting from the construction phases of buildings and related foundations and impermeable surfacing. Some activities also have the potential to continue having an effect during the operational phase of the Proposed Development.

5.3.5 A qualitative assessment will be undertaken using a combination of professional judgment, legislation and other statutory policy and guidance, which will be considered in the preparation of this assessment. Legislation and other statutory policy and guidance are shown in the Table below.

Key Legislation and Guidance Documents in relation to the Water Environment	
European Directives	The Water Framework Directive (2000/60/EC) The Groundwater Daughter Directive (2006/118/EC) The Priority Substances Directive (2008/105/EC)
Legislation	The Environment Protection Act 1990 The Land Drainage Act 1991 The Water Resources Act 1991, Water Act 2003 and Water Act 2014
Policy	The National Planning Policy Framework 2012 Planning Practice Guidance: Flood Risk and Costal Change (2014)
Guidance	CIRIA C741: Environmental Good Practice on Site Guide (4th edition) CIRIA C750: Groundwater control: design and practice (2nd edition) CIRIA C753 Sustainable Urban Drainage Systems Manual CIRIA C532 Control of Water Pollution from Construction Sites CIRIA C650 Environmental Good Practice on Site (Expansion of C502) Environment Agency "Hydrogeological impact appraisal for dewatering abstractions" Environment Agency "Groundwater Protection: Principles and Practice (GP3)"

5.3.6 Due to all of the Site being located within Flood Zone 1 and the overall size of the Site (over 1ha in area), a Flood Risk Assessment will be prepared and appended to the ES chapter.

Assessment Criteria

5.3.7 The impact assessment is based on the receptor sensitivity and the potential magnitude of change from the baseline condition. These two criteria provide an assessment of the potential scale of impact on receptors.

5.3.8 Mitigation measures (e.g., pollution prevention and the design and incorporation of Sustainable Drainage Systems (SuDS), with applicable climate change allowances in the design of the Proposed Development) will be designed to avoid, reduce or offset potential adverse effects and these will inform the Proposed Development's design, including its layout.

5.3.9 The assessment of cumulative impacts on the water environment considers the combined potential impact of other developments within the same catchment(s) as the Proposed Development alongside the Proposed Development. The scale of cumulative impact ranges from negligible to major.

5.3.10 If significant effects are identified through the assessment, these would require the implementation of specific mitigation (such as specific receptor environmental protection plans and / or monitoring) in addition to the good design, pollution prevention measures

and mitigation measures contained in the CEMP. Effects that are identified as minor or negligible are not considered to comprise a significant effect and no further mitigation, beyond the adoption of good industry practice and guidance, will be required.

Water Framework Directive Assessment

5.3.11 The EA's 'Water Framework Directive Risk Assessments: How to Assess the Risk of your Activity'[1] (April 2016) identifies four stages to determine the need to undertake a full WFD assessment for the proposed development. For the purposes of this assessment, it is considered that a WFD assessment will not be required in support of the proposed development for the following reasons:

a. **'*Stage 1 – Make sure that the assessment covers the receptors that are protected by WFD*':** The entirety of the site is located within the Avon – 'ClaycotonYelvertoft Bk to conf R Sowe Water Body' surface water body and the 'Warwickshire Avon - Secondary Mudrocks Water Body'' groundwater body.

b. ***'Stage 2 - demonstrate that the activity supports the objectives of the local River Basin Management Plan (RBMP)':*** The objectives of the river basin management plan for the Severn River Basin District[2] are listed under a programme of measures implemented in order to meet the objectives of the WFD. Specifically, these focus on preventing a deterioration in the status of surface waters and groundwater and achieving 'good' status for all waterbodies. The Proposed Development is unlikely to affect the implementation or effectiveness of these measures.

c. *'**Stage 3 - investigate the risks on WFD receptors and possible ways of managing those risks':*** Given the nature of the proposed development once constructed, there would be very limited potential for adverse effects on the water environment to arise following the implementation of standard, best practice mitigation measures. During the construction and operational phases of the project, adverse effects would be avoided or minimised through measures in a CEMP or equivalent (e.g., pollution prevention plan, sediment management

[1] Environment Agency (2016) Water Framework Directive risk assessment [online]. Accessed May 2022. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/522426/LIT_10445.pdf

[2] Environment Agency (2022) Collection: River basin management plans: 2015 [online]. Accessed May 2022. Available at: https://www.gov.uk/government/collections/river-basin-management-plans-2015#north-west-river-basin-district-rbmp:-2015

plans and stand off from receptors). Therefore, any adverse effects from the Proposed Development can be mitigated and would not interfere with the waterbodies' objectives or its ability to maintain or achieve good WFD status.

d. *'**Stage 4 - show that it meets the sustainability criteria set out in Article 4(7) of the WFD**':* This stage is not required as the stage 3 requirements have been met.

5.3.12 As it has been demonstrated above that a WFD assessment is not required, its requirement would be scoped out of the ES.

Current Baseline

Surface Water Features

5.3.13 The nearest watercourse to the site is an unnamed watercourse located directly northwest of the site, with a number of tributaries. The first tributary is located along the west of the site and the second is outside of the northern site boundary.

5.3.14 An existing watercourse is located to the south of the site, which is fed by a number of small upgradient ponds are located directly adjacent to the Site's southern corner. A larger pond is located 0.6km west of the Site, and discharges to the watercourse adjacent to the Site's northwestern boundary. A number of small ponds are also located circa 0.2km – 0.5km east of the Site. The Site is also located within the River Avon (to confluence with River Severn) surface water Nitrate Vulnerable Zone (NVZ).

5.3.15 The site is entirely located within the 'Avon – Claycoton Yelvertoft Bk to conf R Sowe Water Body' surface water catchment, which is monitored under the WFD.

Flood Risk

5.3.16 This site is located in Flood Zone 1 - 'Low Probability'. This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding (<0.1%).

Geology

5.3.17 The bedrock geology in the area comprises of 'Charmouth Mudstone Formation – Mudstone Sedimentary Bedrock'. Superficial deposits at the site to comprise of 'Dunsmore Gravel - Sand and Gravel.

Hydrogeology

5.3.18 EA mapping indicates that the site is underlain by a Secondary (undifferentiated) bedrock aquifer. The site is also underlain by a Secondary A superficial aquifer. EA mapping shows that the site is not within a Source Protection Zone (SPZ).

5.3.19 The site is entirely within the 'Warwickshire Avon - Secondary Mudrocks Water Body' groundwater catchment, which is monitored under the WFD.

Abstractions

5.3.20 Surface water and groundwater abstractions within the area are currently unknown. As part of the Water Resources Assessment, the Environment Agency and Rugby Borough Council will be contacted to request details of abstractions within the area.

Hydro-ecological Designate Areas

5.3.21 Newbold Quarry Local Nature Reserve (LNR) is located 4.5km north east of the Site. The LNR was originally a limestone quarry for the cement industry until the 1920's after which it was flooded and used as a top up reservoir for the adjacent Oxford Canal. A large quarry pool with a thriving population of native white clawed crayfish and toads.

Potential Significant Effects

5.3.22 The assessment will identify potential impacts on the water environment from the proposed development. The potential hydrological and hydrogeological impacts requiring consideration are broadly grouped as follows:

- Changes to surface water flow and levels through changes to runoff and drainage.
- Increased runoff on exposed ground causing erosion and pollution.
- Changes to groundwater levels through reduced recharge due to compaction and laying of impermeable surfaces.

- Disruption/cut off natural surface and groundwater pathways
- Changes to groundwater flow due to impermeable subsurface features such as foundations.
- Point source pollution from accidental spillages.

5.4 Biodiversity

Introduction

5.4.1 This ES section will be produced by Tom Richards and Aidan Marsh from CSA Environmental. The Biodiversity Chapter will consider the effects of the proposed development on the biodiversity and nature conservation interests of the site, as well as any impact pathways which might affect nearby designated wildlife sites

Proposed Methodology

5.4.2 A Preliminary Ecological Appraisal (PEA) of the Site has been undertaken, comprising a desktop study of online sources and data requested from Warwickshire Biological Records Centre and a site-based extended Phase 1 Habitats Survey. Based on the findings of the initial PEA, a suite of detailed ecological surveys to explore the presence of notable and protected species have been completed.

5.4.3 The importance of ecological features, as well as the significance of any likely impacts and their effects, will be considered within a defined geographic context, namely: International, National, Regional, County or Local.

5.4.4 Impact assessment will follow the Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018).

5.4.5 An effect will be considered to be significant where this is assessed to either support or undermine biodiversity conservation objectives for an important ecological feature. Significant effects will be qualified with reference to an appropriate geographical scale, as detailed above. Where likely significant ecological effects are identified in connection with the proposed development, which may be positive or negative, these will be assessed with reference to their extent, magnitude, duration, reversibility, frequency, timing and frequency.

5.4.6 Likely significant effects on important ecological features of the proposed development will first be determined in the absence of avoidance and mitigation measures.

Avoidance, mitigation and compensation measures will then be described and any residual impacts identified, with the significance of their effects discussed. The implications of significant effects on the features of interest will be considered in accordance with planning policies and legislation.

5.4.7 In accordance with the NPPF, opportunities to deliver ecological enhancements will also be identified. Appropriate monitoring strategies and information to support effective implementation will be described.

Current Baseline

Designated Sites

5.4.8 A desktop study was conducted in June 2021 to identify statutory designated wildlife sites which could be affected by the proposed development. There are no statutory designations covering any part of the site and no internationally important statutory designations are present within 10km of the Site.

5.4.9 One nationally important statutory designation is present within 3km of the Site: Draycote Meadows SSSI. One local important statutory designation is present within 3km of the Site: Cock Robin Wood Local Nature Reserve.

5.4.10 Four non-statutory designated sites are present within 1km of the Site: Ecosite 12/47 Fox Covert and Cawston Spinney Local Wildlife Site (LWS), Ecosite 60/47 Bilton Common, Ecosite 98/47 Sow Brook LWS and Ecosite 53/47 Lake at Dunkley.

Habitats

5.4.11 As part of the PEA, an extended Phase 1 Habitat survey has been undertaken in order to assess the on-site habitats and their potential to support notable and protected species. The survey confirmed that the site is dominated by managed arable land bounded by Cawston Spinney woodland along its southern and western edges and native hedgerows to the north and east. The fields themselves are considered to be of limited ecological value, with the off-site woodland being the feature of greatest importance.

5.4.12 Baseline ecological information relating to Cawston Spinney woodland was considered in detail as part of the Phase 1 application on the western side of the woodland. A

Woodland Management Plan was produced for this neighbouring application and agreed with the local authority which was supported by a suite of detailed ecological and arboricultural surveys specific to the woodland. The management plan prescribes a range of detailed management actions within the woodland to promote arboricultural condition and to protect and enhance its ecological value while managing the woodland to sustain the increase in public access that would occur as a result of nearby development.

Hedgerows

5.4.13 Four hedgerows are present on-site which form the northern and eastern boundaries of the site. Hedgerow assessments were undertaken in August 2017 to identify any hedgerows that meet the criteria of 'Important' under the Hedgerow Regulations 1997. No hedgerows on-site were categorised as Important or species-rich under these regulations. These assessments will be updated in 2022 to inform the development proposals. While the hedgerows on-site are species-poor and exhibit generally poor connectivity, they hold intrinsic ecological value for a range of species. The existing hedgerows will be retained and protected where possible within the development proposals.

Bats

5.4.14 Bat activity surveys, comprising walked transects and periods of static monitoring have been undertaken in May, July and September 2021. At least eight species of bat were recorded during the surveys including common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, *Myotis* sp., brown long-eared *Plecotus auritus*, Nathusius' pipistrelle *Pipistrellus nathusii*, barbastelle *Barbastella barbastellus* and serotine *Eptesicus serotinus*. Bat activity was largely dominated by common pipistrelle and soprano pipistrelle bat contacts, with noctule and *Myotis* species bats recorded to lesser extents. The remaining bat species were all recorded at very low levels. Overall, bat activity was highly concentrated along woodland

edges, with limited activity noted away from the woodland, along boundary hedgerows or within field areas.

5.4.15 Preliminary Roost Assessments (PRA) of the two buildings on-site were completed in August 2021, which found these buildings to hold negligible suitability for roosting bats.

5.4.16 Ground-based PRA of trees on-site were conducted in July 2018 and are due to be updated in 2022. Trees with moderate and low suitability for roosting bats have been identified at the site, and at this stage no impacts to these trees are anticipated to facilitate the development proposals.

Badgers

5.4.17 A badger survey was undertaken in April 2018 and is due to be updated in 2022 to provide up-to-date information on badger activity on-site and within adjacent land. In 2018, a number of badger setts were identified within Cawston Spinney woodland, many of which lie close to the woodland edge where it meets the application site. No setts were identified within the arable field areas on-site or along hedgerow boundaries to the north and east. The results of the update badger survey work this year will guide development proposals and ensure appropriate impact avoidance measures are included and mitigation provided where required.

Breeding Birds

5.4.18 Breeding bird surveys have been completed between March and June 2021 to assess the breeding assemblage on-site. Given that the site is bounded by mature woodland to the south and west and farmland to the east and north, the bird assemblage includes a range of species typical of these habitat types. No confirmed on-site breeding species have been identified. Probable on-site breeding species include skylark *Alauda arvensis*, song thrush *Turdus philomelos* and dunnock *Prunella modularis*. A number of additional species were recorded within adjacent woodland habitat as confirmed/probable/possible breeding species.

Reptiles

5.4.19 The site is considered to offer sub-optimal conditions for common reptile species, as the dominance of arable land does not provide the extent or variance in habitat structure required by this species group for viable populations to persist. The field margins offer

some opportunities, although limited in extent and considered only to be suitable for transient grass snakes *Natrix natrix (*syn. *helvetica)*, with the site making up a small part of a wider home range. Grass snake are therefore assumed to be present in low numbers.

Great Crested Newts

5.4.20 Initial Habitat Suitability Index (HSI) assessments and presence/absence surveys were undertaken of accessible ponds within a 500m radius of the site in 2017. The presence/absence surveys were then updated in 2019. Great crested newts were found to be absent from all ponds on all survey occasions. Great crested newt HSI assessments were updated in May 2021 which found all ponds to be of a similar status and condition as when they were previously surveyed. As a result, great crested newts are considered to continue to be absent from the site and within a dispersible range.

Invertebrates

5.4.21 The bloody-nosed beetle *Timarcha tenebricosai* is a local priority species, known to be present at an off-site disused railway cutting to the west of the site. Targeted survey work was undertaken in March 2021 to confirm the presence/absence of this species. The bloody-nosed beetle was found to be likely absent from the application site, but was identified within suitable off-site habitat (a dense verge of this species' foodplant cleavers *Galium aparine* along a hedgerow) on the southern side of Cawston Spinney woodland. The extent of cleavers on-site is lower than this off-site land, reducing the suitability for this species, and Cawston Spinney may act as a barrier to the beetle, preventing it from establishing with verges on-site.

Biodiversity Net Gain

5.4.22 The application will be accompanied by Warwickshire County Council's Biodiversity Impact Assessment calculator, which will identify quantitatively the change in biodiversity value that will occur as a result of the proposed development. The development will be designed to maximise biodiversity value on-site and will achieve a net gain in biodiversity overall utilising on-site and off-site measures.

Potential Significant Effects

5.4.23 Based on the above considerations of the current ecological baseline, the table below provides a preliminary summary of important ecological features and potential significant effects that may occur in the absence of mitigation.

Ecological Feature	Potential Significant Effect
Statutory designated sites	Due to the distance between the site and nearby statutory designated sites and the nature of these designations, no significant negative effects are anticipated.
Non-statutory designated sites	Fox Covert and Cawston Spinney LWS forms the western and southern edges of the site and may be negatively affected by direct damage during construction and an increase in public access and disturbance. The remaining three non-statutory designations are considered to be suitably separated from the site such that significant negative effects would not be anticipated.
Hedgerows	The existing hedgerows on-site may be affected through partial removal to facilitate site access proposals and may also be subject to accidental damage during the construction-phase of development.
Bats	The removal of suitable habitat features such as hedgerows and trees would affect the ability of foraging and commuting bats to continue to utilise the site. Disturbance through uncontrolled artificial lighting may also occur. No impacts to roosting bats are currently anticipated.
Badgers	The proposed development may result in the damage or destruction to existing setts where these are present in proximity to the site boundary. The construction phase of development may also result in impacts to badgers on-site as they are known to be present within the local area.
Breeding birds	The site is not considered to support a notable assemblage of breeding birds, with the majority of species utilising the adjacent woodland habitat that will be retained and protected. No significant negative effects are anticipated.
Reptiles	Development at the site may result in the killing or injury of grass snake during the construction phase, where suitable habitat will be removed or damaged.
Great crested newts	Species confirmed to be likely absent. No significant effects anticipated.
Invertebrates	Species confirmed to be likely absent. No significant effects anticipated.

5.5 Highways and Accessibility

Introduction

5.5.1 This ES section will be produced by Ian Southwell and Taylor Davis from Vectos. It will consider the potential environmental effects in the vicinity of the Application Site which could arise on the transport network as a result of the Proposed Development during the construction and the operational phase. The chapter will draw on details from the Transport Assessment (TA) which will be submitted with the planning application.

Proposed Methodology

5.5.2 This ES chapter will investigate the environmental impact of the development proposals on the local roads and users, and the land uses fronting the local roads.

5.5.3 The potential impact of both the Construction and Operational phases of the development will identify the links to be assessed within the traffic and transport ES chapter. This section outlines the methodologies for identifying the potential impacts of the development on the surrounding highway network.

5.5.4 The forecast traffic generation resulting from the completion of the development proposals will be considered in relation to the 2031 forecast traffic link flows in order to ascertain the percentage impact in accordance with IEMA criteria.

- **IEMA Criteria 1** – Include roads where traffic flows or number of HGV's are forecast to increase by more than 30%; and
- **IEMA Criteria 2** – Include any specifically sensitive areas where traffic flows or number of HGV's are forecast to increase by 10% or more.

5.5.5 Links which are found to fall within either of these two criteria will be assessed further, as to ascertain the relative impact, in terms of traffic volumes, and the sensitivity of receptors. This assessment will likely be undertaken via a matrix. Any outstanding impacts will then be investigated, with measures proposed to mitigate any potential impact. The assessment will then be repeated to ensure the proposed measures mitigate the environmental impact of the development.

Magnitude of Impact Criteria

5.5.6 The increase in traffic flow criteria outlined in the table below will be utilised.

Increase in Traffic Flow or HGV numbers	Magnitude of Impact
> 90%	Major
60 – 90%	Moderate
30 – 60%	Minor
<30%	Negligible

Sensitivity of Receptor

5.5.7 The sensitivity of a receptor can be defined as below:

- **Major** – Receptors of greatest sensitivity to traffic flow: schools, colleges, playgrounds, accident blackspots, retirement homes, urban/residential roads without footways that are used by pedestrians;
- **Moderate** – Congested junctions, doctors' surgeries, hospitals, hopping areas with roadside frontage, roads with narrow footways, unsegregated cycleways, community centres, parks, recreation facilities;
- **Minor** – Receptors with some sensitivity to traffic flow: places of worship, public open space, nature conservation areas, listed buildings, tourist attractions and residential areas with adequate footway provision;
- **Negligible** – Receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions.

5.5.8 The impact of the development will subsequently be considered in relation to the sensitivity of the receptor, against the increase in traffic flow in an appropriate matrix.

Current Baseline

5.5.9 The operation of the local highway network in 2031 without the addition of development traffic will be used to determine the baseline conditions within the vicinity of the site. The 2031 baseline flows will be obtained from the Rugby Wide Area S-Paramics micro-simulation model in the 2031 Reference Case scenario, which includes developments

within the Rugby area that have been granted planning approval and will be operational by 2031.

Operational Phase Methodology

5.5.10 The operational phase development trip generation, distribution and assignment will be taken from the default rates and proportions used within the Rugby Strategic Transport Assessment. The assessment of the potential impacts of the development will be based on the Rugby Wide Area S-Paramics micro-simulation model, the extent of which will provide the study area of the assessment.

5.5.11 The scenarios which have been assessed are the Reference Case 2031 with and without traffic associated with the development proposals.

5.5.12 Increases in traffic volumes are to be obtained from the Rugby Wide Area S-Paramics microsimulation model. The ES chapter will focus on the traditional AM and PM peak periods (0800 – 0900 and 1700 – 1800), as stated within the IEMA guidance. These peak periods are also identified as the network peak hours. The AM and PM peak periods will be taken directly from the S-Paramics model; Annual Average Daily Traffic (AADT) flows will be taken from the S-Paramics microsimulation model, or from an appropriate factor derived from traffic surveys.

Construction Phase Methodology

5.5.13 The construction phase traffic generation will likely be less in volume than the operational phase, however, will consist of a greater HGV proportion. The construction phase traffic generation will be calculated from first principles.

Potential Significant Effects

5.5.14 There are a number of environmental effects which can potentially be significant when considering traffic changes in relation to a new development. These will be considered and analysed for the road links which fall within the IEMA criteria outlined previously.

- Severance;
- Driver Delay;
- Pedestrian/cyclist/public transport user delay;
- Pedestrian/cyclist amenity;
- Fear and intimidation;
- Accidents and safety; and

- Abnormal/hazardous load.

Mitigation of Transport Impacts

5.5.15 The assessment outlined within this scoping note will identify any links which are found to have minor to major impacts on the surrounding highway network. Potential measures will then be identified as to mitigate the impact of the development. These mitigation measures will include inherent measures within the design of the development, and 'hard' measures, such as new pedestrian and cyclist footpaths, or improved crossing facilities which are to be identified as part of the TA.

5.5.16 The impact of the transport impacts will be assessed with and without the mitigation proposals, as to ensure there are no severe residual environmental impacts on the surrounding highway network.

5.6 Noise and Vibration

Introduction

5.6.1 This ES Chapter will be produced by Rosie Pitt from Wardell Armstrong.

Proposed Assessment Methodology

5.6.2 Potential noise issues that are considered as part of this assessment are as follows:

- Noise and vibration impacts, from earthworks and construction phases associated with the proposed development, on existing sensitive receptors in the immediate vicinity of the site;

- Noise impacts associated with vehicle movements on the surrounding road network, including development-let road traffic, at existing and proposed sensitive receptors;

5.6.3 The changes in road traffic noise levels will be assessed against a set of significance criteria. The criteria will be based upon guidance contained within the DMRB, LA 111 – Noise and Vibration (Revision 2), 2020.

5.6.4 This noise assessment considers the suitability of the site for the proposed uses, and takes into account current guidance including:

- National Planning Policy Framework, 2021; (NPPF);

- Planning Practice Guidance (Noise), 2019;
- Noise Policy Statement for England, 2010; (NPSE);
- British Standard BS5228-1&2 + A1 2014 *'Code of practice for noise and vibration control on construction and open sites (Part 1 Noise & Part 2 Vibration)'*;
- British Standard 8233: 2014 Guidance on sound insulation and noise reduction for buildings (BS8233);
- Department of Transport's Memorandum: Calculation of Road Traffic Noise, 1988 (CRTN);
- Acoustics, Ventilation and Overheating Residential Design Guide 2020 (AVO).

5.6.5 Noise impacts associated with the Proposed Development will be assessed in accordance with relevant guidance to determine whether noise and vibration effects are likely to occur at existing and proposed sensitive receptors. Where likely adverse effects are identified, appropriate mitigation measures will be provided to avoid, remove or reduce adverse effects.

5.6.6 The level of an environmental effect from noise and vibration during the construction and operational phases of the development will be determined by the interaction of magnitude and sensitivity, and assessed using IEMA Guidelines for Environmental Impact Assessment.

5.6.7 The results of the noise and vibration assessment will be detailed in an ES chapter to be submitted as part of the EIA for the proposed development.

5.6.8 Wardell Armstrong undertook a noise survey in 2018 for use in the assessment of Phase 1 of this development. This data has been reviewed for Phase 2 to assess the traffic increase since 2018. It was concluded that there would be a negligible increase in traffic noise since the 2018 survey and therefore no updated survey was considered necessary. It is considered likely that this will still be the case, however agreement with the Environmental Health Officer (EHO) will be required for this approach. If we cannot achieve agreement with the EHO then an updated noise survey will be required.

Current Baseline

5.6.9 To the north-east of the site is Cawston Lane, with existing residential properties beyond. To the south-east and south-west of the site is open land. To the north-west of the site lies Phase 1 of this development, which is awaiting planning permission (R18/0936). Phase 1 of the development includes residential accommodation and a primary school.

5.6.10 The dominant noise source affecting the proposed development is traffic on Cawston Lane.

5.6.11 Noise Monitoring undertaken in 2018 indicated that the majority of the site will achieve internal noise guideline levels with no mitigation in place and with windows open for ventilation.

5.6.12 However, with windows open there is potential for recommended internal noise guidance levels to be exceeded in some living rooms and bedrooms closest to and facing Cawston Lane during the daytime and night-time. Therefore, mitigation in the form of a suitable glazing and ventilation system or locating sensitive rooms on the screened side of the proposed buildings may be required.

Potential Significant Effects

5.6.13 Activities associated with the construction of the development will have the potential to generate noise and effect on the surrounding area. Guidance on the prediction and assessment of noise from development sites is given in BS5228-1 + A1 2014 'Code of practice for noise and vibration control on construction and open sites'. As details pertaining to plant to be used during the construction phase is unlikely to be available at this stage, the effects of construction noise will be assessed using the ABC methodology outlined within BS5228-1.

5.6.14 Work involving heavy plant on an open site has the potential to generate vibration, which may, in certain circumstances, propagate beyond the boundary of the Site. In situations where particularly heavy plant, vibrating compaction equipment or piling rigs are being used close to the site boundary, nearby properties may experience ground-borne vibration. Guidance on the assessment of vibration from development sites is given within BS5228-2. For the purposes of this Chapter, the degree of effect from the site works will be estimated, according to the suggested standards, by reference to the level of vibration.

5.6.15 The operational phase of the development will generate additional traffic movements on the existing road network. These additional vehicle movements have the potential to increase road traffic noise levels at existing receptors adjacent to the surrounding local road network.

5.6.16 During the operational phase, road traffic noise has the potential to impact receptors of

the Development, particularly where dwellings are located close to Cawston Lane. Therefore, mitigation in the form of a suitable glazing and ventilation system or locating sensitive rooms on the screened side of the proposed buildings may be required.

5.7 Air Quality

Introduction

5.7.1 The air quality assessment (AQA) will be undertaken by Wardell Armstrong. This chapter of the ES outlines the scope and methodology of the AQA. The AQA will consider the following:

- Nuisance dust and fine particulate matter, during construction of the proposed development, at existing sensitive receptors in the vicinity of the development site; and
- Road traffic emissions, during operation of the proposed development, at existing sensitive receptors in the vicinity of the development site.

5.7.2 The AQA will be undertaken in accordance with the following legislation, policy and guidance:

- Part IV Environment Act, Chapter 25, Air Quality, 1995;
- Department of Environment, Food and Rural Affairs, The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, July 2007;
- The Air Quality Standards Regulations 2010;
- Ministry of Housing, Communities and Local Government, National Planning Policy Framework, July 2021;
- Department for Communities and Local Government, Planning Practice Guidance: Air Quality, November 2019;
- Department for the Environment, Food and Rural Affairs, Local Air Quality Management Technical Guidance LAQM.TG(16), April 2021;
- Institute of Air Quality Management (IAQM) and Environment Protection UK (EPUK), Land-Use Planning and Development Control: Planning for Air Quality, 2017;
- Institute of Air Quality Management (IAQM) guidance, Guidance on the Assessment of Dust from Demolition and Construction, June 2016; and
- Air Quality LAQM Reports for Rugby Borough Council (where available).

Proposed Assessment Methodology

Key Receptors

Construction Phase Assessment

5.7.3 The sensitive receptors to be assessed in the construction phase assessment are any locations where a person or property may experience the adverse effects of airborne dust or dust soiling, or exposure to PM_{10} (i.e., human receptors) or any sensitive habitats affected by dust soiling (i.e., ecological receptors). These will be determined using the IAQM document 'Guidance on the Assessment of Dust from Demolition and Construction' (2016) during the construction phase assessment.

Operational Phase Assessment

5.7.4 The sensitive receptors to be assessed in the operational phase assessment are those situated on roads which will see contributions from traffic generated as a result of the Proposed Development. This includes the sensitive existing human receptors and potentially ecological receptors, including Draycote Meadows Site of Special Scientific Interest (SSSI), in addition to several areas of Ancient Woodland. The receptors to be assessed will be determined when traffic data is available, using the guidance prepared by Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) (Land-Use Planning & Development Control: Planning for Air Quality, 2017).

Assessment Methodology

Construction Dust Assessment

5.7.5 The potential impacts of dust and PM_{10} during construction will be qualitatively assessed in line with the IAQM guidance, which will be used to inform appropriate mitigation measures to be employed during the construction phase. The assessment will consider potential dust and particulate emissions from earthworks, construction and trackout (as

no demolition works are planned, this has been scoped out of the construction phase assessment).

Operational Phase Assessment

5.7.6 Assessment of road traffic emissions, when the proposed development is operational, will comprise a detailed assessment undertaken using the ADMS Roads atmospheric dispersion model, using traffic data provided by the project transport consultant. This will include the assessment of the likely effects of changes in NO_2, PM_{10} and $PM_{2.5}$ concentrations at existing receptors along the local road network affected by the Proposed Development. Concentrations will be predicted for the Base Year and Opening/Future Year, with and without the Proposed Development. Emission factors will be defined using Defra's latest Emissions Factors Toolkit (EFT), currently v11.0.

5.7.7 The assessment will take into account background pollutant concentrations, obtained from the Defra default concentration maps. Meteorological data will be obtained from the most representative recording station. Where possible, the model will be verified using the local authority air quality monitoring data. If this is not possible, a sensitivity analysis will be undertaken as part of the assessment in which Base Year pollutant concentrations will be applied to the Opening/Future Year scenarios.

Assessing Significance of Effect

Construction Dust Assessment

5.7.8 The IAQM guidance details criteria for assessing the sensitivity of an area to dust soiling and health effects of PM_{10}. The guidance also provides significance criteria for the classification of dust soiling and human health effects from demolition, earthworks, construction activities and trackout, as summarised below.

5.7.9 IAQM guidance states that the dust emission magnitude should be based on the scale of the anticipated works and classified as low, moderate or high. The table below

describes the IAQM criteria for designating the emission magnitude, for demolition, earthworks, construction activities and trackout.

IAQM Criteria for Defining the Dust Emission Magnitude

Dust Emission Magnitude	Demolition	Earthworks	Construction	Trackout
High	Total building volume >50,000 m^3, potentially dusty construction material (e.g., concrete), on-site crushing and screening, demolition activities >20 m above ground level	Total site area >10,000 m^2, potentially dusty soil type (e.g., clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >8 m in height, total material moved >100,000 tonnes	Total building volume >100, 000 m^3, on site concrete batching, sandblasting	>50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g., high clay content), unpaved road length >100 m
Moderate	Total building volume 20,000 m^3 – 50,000 m^3, potentially dusty construction material, demolition activities 10-20 m above ground level	Total site area 2,500 m^2 – 10,000 m^2, moderately dusty soil type (e.g., silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 4 m - 8 m in height, total material moved 20,000t–100,000t	Total building volume 25,000 m^3 – 100,000 m^3, potentially dusty construction material (e.g., concrete), on site concrete batching	10-50 HDV (>3.5t) outward movements in anyone day, moderately dusty surface material (e.g., high clay content), unpaved road length 50 m – 100 m
Low	Total building volume <20,000 m^3, construction material with low potential for dust release (e.g., metal cladding or timber), demolition activities <10 m above ground, demolition during wetter months	Total site area <2,500 m^2, soil type with large grain size (e.g., sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <4 m in height, total material moved <20,000t, earthworks during wetter months	Total building volume <25,000 m^3, construction material with low potential for dust release (e.g., metal cladding or timber).	<10 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50 m

5.7.10 The IAQM sensitivity categories for different types of receptors, to both dust soiling effects and the health effects of PM_{10}, are described in the table below.

Sensitivity Categories for Human Receptors

Sensitivity Category	Dust Soiling Effects	Health effects of PM_{10}
High	Users can reasonably expect to enjoy a high level of amenity; Appearance, aesthetics or value of a property would be diminished; Examples include dwellings, museums and other culturally important collections, medium and long term car parks and car show rooms.	Locations where members of the public are exposed over a period of time relevant to the air quality objective for PM_{10}; Examples include residential properties, hospitals, schools, and residential care homes.
Moderate	Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; The appearance, aesthetics or value of their property could be diminished; People or property wouldn't reasonably be expected to be continuously present or regularly for extended periods of time; Examples include parks and places of work.	Locations where people are exposed as workers and exposure is over a period of time relevant to the air quality objective for PM_{10}; Examples include office and shop workers but will generally not include workers occupationally exposed to PM_{10}.
Low	Enjoyment of amenity would not reasonably be expected; Property would not be diminished in appearance, aesthetics or value; People or property would expect to be present only for limited periods of time; Examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.	Locations where human exposure is transient; Examples include public footpaths, playing fields, parks and shopping streets.

5.7.11 Based upon the category of receptor sensitivity, the sensitivity of the area to dust soiling effects is determined using the IAQM criteria detailed in the table below.

Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from Source (m)			
		<20m	**<50m**	**<100m**	**<350m**
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Moderate	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

5.7.12 Based upon the category of receptor sensitivity, the sensitivity of the area to the health effects of PM_{10} is determined using the IAQM criteria detailed in the table below.

Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number of Receptors	Distance from Source (m)				
			<20m	<50m	<100m	<200m	<350m
High	>32µg/m^3	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	28-32µg/m^3	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24-28µg/m^3	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<24µg/m^3	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Moderate	>32µg/m^3	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	28-32µg/m^3	>10	Medium	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	24-28µg/m^3	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	<24µg/m^3	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

5.7.13 The risk of dust being generated by demolition activities at the site is determined using the IAQM criteria in the table below.

Risk of Dust Impacts - Demolition

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Moderate	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

5.7.14 The risk of dust being generated by earthworks and construction activities at the site is determined using the IAQM criteria in the table below.

Risk of Dust Impacts – Earthworks and Construction

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Moderate	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

5.7.15 The risk of dust being generated by trackout from the site is determined using the IAQM criteria in the table below.

Risk of Dust Impacts – Trackout

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Moderate	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

5.7.16 Any impact greater than negligible will be considered significant for the AQA.

Operational Phase Assessment

5.7.17 The impact of a development is usually assessed at specific receptors and takes into account both the long-term background concentrations, in relation to relevant Air Quality Assessment Levels (AQALs) at these receptors, and the change with the development in place.

5.7.18 The EPUK/IAQM guidance document provides descriptors for the magnitude of change in pollutant concentration relative to the relevant air quality assessment level (AQAL), as shown in the table below.

Descriptors for the Magnitude of Change in Pollutant Concentration Relative to the Air Quality Assessment Level (AQAL)

Percentage Change in Concentration Relative to Air Quality Assessment Level (AQAL)	Definition of Magnitude*
<0.5%	Negligible
1%	Small
2 – 5%	Moderate
6 – 10%	High
>10%	Very High
* *Based on professional opinion.*	

5.7.19 The EPUK and IAQM document also provides descriptors for the long-term average concentration at receptors, as shown in the table below.

Descriptors for the Long-Term Average Concentration at Receptors

Long Term Average Concentration at Receptor in Assessment Year	Definition of Sensitivity*
75% or less of AQAL	Small
76-94% of AQAL	Moderate
95-102% of AQAL	High
103-109% of AQAL	Very High
110% or more of AQAL	Very High
* *Based on professional opinion.*	

5.7.20 The EPUK/IAQM impact descriptors for an individual receptor, taking into account the magnitude of change in pollutant concentration relative to the AQAL and the long-term average concentration at the receptor, are detailed in the table below.

Table 10: Impact Descriptors for Individual Receptors

Long Term Average Concentration at Receptor in Assessment Year*	Percentage Change in Concentration Relative to Air Quality Assessment Level (AQAL)*			
	1%	2-5%	6-10%	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76-94% of AQAL	Negligible	Slight	Moderate	Moderate
95-102% of AQAL	Slight	Moderate	Moderate	Substantial
103-109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial
**Percentage pollutant concentrations will be rounded to whole numbers, to make it easier to assess the impact. Changes of 0% (i.e., less than 0.5% or 0.2µg/m^3) will be described as Negligible*				

5.7.21 Impacts on air quality, whether adverse or beneficial, will have an effect on human receptors that can be judged as either 'significant' or 'not significant'. Once the impact of the Proposed Development has been assessed for the individual impacts, the overall significance is determined using professional judgement. This takes into account a number of factors such as:

- The existing and future air quality in the absence of the development;
- The extent of the current and future population exposure to the impacts; and
- The influence and validity of any assumptions adopted when undertaking the prediction of impacts.

5.7.22 Any impact greater than slight adverse will be considered significant for the AQA.

Current Baseline

5.7.23 The Proposed Development Site is located within the administrative area of Rugby Borough Council, which is responsible for the management of local air quality. RBC has declared one Air Quality Management Area (AQMA) for the exceedance of the annual mean objective concentration for nitrogen dioxide (NO_2), which covers the whole urban

area of Rugby bounded by the southern boundary with Daventry District Council, the A5, the M6, minor roads west of Long Lawford, the A45 and M45. The site is therefore located within this AQMA.

5.7.24 The AQA will take into account background concentrations upon which the local, traffic derived pollution is superimposed. There are currently no representative background NO_2, PM_{10} or $PM_{2.5}$ monitoring locations in the vicinity of the Site and therefore background concentrations will be obtained from the 2018-based default concentration maps.

5.7.25 Baseline air quality within and surrounding the proposed development site will be established through:

- A review of Defra's Local Air Quality Management webpage and available LAQM reports for RBC; and
- Atmospheric dispersion modelling.

Potential Significant Effects

Construction Dust Assessment

5.7.26 In the absence of mitigation, there is potential for existing sensitive receptors to be impacted by dust soiling and fine particulate matter releases during the construction phase of the Proposed Development, causing potential health effects. Any impact greater than negligible under the IAQM guidance will be considered significant for the AQA and mitigation measures will be outlined accordingly to ensure any residual effects are not significant.

Operational Phase Assessment

5.7.27 It is likely that existing sensitive human receptors would be impacted by elevated pollutant concentrations on roads subject to Proposed Development generated road traffic. Where the criteria are met, ecological designations could also be subject to elevated nitrogen and ammoniacal deposition rates.

5.7.28 Impacts on air quality, whether adverse or beneficial, will have an effect on human receptors that can be judged as either 'significant' or 'not significant'. Once the impact of the Proposed Development has been assessed for the individual impacts, the overall

significance is determined using professional judgement. This takes into account a number of factors such as:

- The existing and future air quality in the absence of the development;
- The extent of the current and future population exposure to the impacts; and
- The influence and validity of any assumptions adopted when undertaking the prediction of impacts.

5.7.29 Any impact greater than slight adverse under the IAQM guidance will be considered significant for the AQA.

5.8 Cultural Heritage

Archaeology

Introduction

5.8.1 This section of the Scoping Report has been prepared by Orion Heritage and sets out the approach to the archaeological assessment which will be reported in the ES.

5.8.2 A Heritage Baseline Assessment has been produced and a geophysical survey has been undertaken to inform the scoping stage of the EIA.

5.8.3 The Historic Environment chapter will consider the potential physical and non-physical effects of the Proposed Development upon known and potential designated and non-designated heritage assets during the demolition, construction and operational phases.

Assessment Methodology Articulating Value (Significance)

5.8.4 The Historic Environment chapter will incorporate the results of a historic environment desk-based assessment (HEDBA) and a geophysical survey.

5.8.5 The following study areas have been chosen for the archaeological impact assessment. There are no strict parameters for the setting of study areas. This has been defined based on professional judgement, experience of potential significant direct and indirect effects likely to arise from the Proposed Development:

- A 1km radius has been used in the HEDBA to identify designated or non-designated heritage assets which might be directly or indirectly impacted by the Proposed Development and inform the potential for previously unrecorded archaeological remains.

5.8.6 The following data sources have be used in the compilation of the baseline data:

- Warwickshire Historic Environment Record (SHER);
- Geophysical survey;
- National Heritage List for England (NHLE);
- Areas of importance identified in local planning policy (Conservation Areas, Archaeological Notification Areas);
- Heritage planning policy from Warwick District Council;
- Warwickshire Record Office;
- The National Archives (TNA);
- The British Library (BL);
- Site inspection;
- Map regression based on Ordnance Survey maps and tithe/enclosure maps and apportionments held online at the National Archives and the British Library;
- Assessment of Lidar and aerial photography; and
- Published/unpublished sources;

5.8.7 The assessment of likely significant effects on historic environment resources of the study site will be conducted in line with the latest and most comprehensive guidance provided. These documents do not provide a prescriptive approach to assessment but identify principles and good practice that have been applied in the methodology for the assessment:

- Scheduled Monuments – Identifying, protecting, conserving and investigating nationally important archaeological sites under the Ancient Monuments and Archaeological Areas Act 1979 (Department for Digital, Culture, Media and Sport (DCMS) 2010);
- Scheduled Monuments & nationally important but non-scheduled monuments (DCMS 2013);
- Principles of Selection for Listing Buildings (DCMS 2018);
- Conservation Principles – Policies and Guidance for the Sustainable Management of the Historic Environment (English Heritage 2008);
- Design Manual for Roads and Bridges Volume 11; Section 3; Part 2 ‘Cultural Heritage’ (DMRB) (Highways Agency 2019);
- Historic Environment Good Practice Advice in Planning Note Managing Significance in Decision-Taking in the Historic Environment (Historic England 2015);
- Historic Environment Good Practice Advice in Planning Note 3 The Setting of Heritage Assets (Historic England 2017);
- Seeing the History in the View – A Method for Assessing Heritage Significance in Views (Historic England 2011);
- Standard and Guidance for Historic Environment Desk-based Assessments (Institute for Archaeologists 2020);

- Standard and Guidance for Geophysical Survey (Institute for Archaeologists 2020);

5.8.8 The results of the HEDBA have been used to assess demolition and construction effects of the Proposed Development on archaeological and built heritage features against clearly defined criteria. The magnitude of change for heritage assets potentially affected by the Proposed Development in accordance with best practice and Historic England guidance (Historic England 2017).

5.8.9 Determination of the importance of heritage assets is based on existing statutory designations and, for non-designated archaeological assets, the Secretary of State's non-statutory criteria and professional judgement.

5.8.10 Using this approach, the criteria for establishing the importance of a heritage assets is described in the table below.

Importance	Description
International	Archaeological sites or monuments of international importance, including World Heritage Sites. Structures and buildings inscribed as of universal importance as World Heritage Sites. Other buildings or structures of recognised international importance.
National	Ancient monuments scheduled under the Ancient Monuments and Archaeological Areas Act 1979, or archaeological sites and remains of comparable quality, assessed with reference to the Secretary of State's non-statutory criteria. Listed Buildings. Non-designated built assets of national importance, assessed with reference to the Secretary of State's published Principles of Selection for Listing Buildings.
Regional/ County	Archaeological sites and remains which, while not of national importance, score well against most of the Secretary of State's criteria Conservation Areas.
Local	Archaeological sites that score less well against the Secretary of State's criteria. Historic buildings on a 'local list'. Non-designated built assets of local significance.
None	Areas in which investigative techniques have produced negligible or only minimal evidence for archaeological remains, or where previous large-scale disturbance or removal of deposits can be demonstrated.

Levels of Significance

5.8.11 The Historic Environment chapter of the ES will identify and evaluate the nature and likelihood of the impacts of the REP, in both the long and short term, on archaeological and heritage features against clearly defined criteria.

5.8.12 Significance will be assigned to effects relative to the sensitivity of the resource and the magnitude of impact in accordance with best practice.

5.8.13 Archaeological resources are susceptible to a range of impacts during site preparation as well as construction related activities, including:

- Site clearance activities that disturb archaeological remains;
- Excavation that extends into archaeological sequences, for example deep foundations or basements resulting in the removal of the resource;
- Piling activities resulting in disturbance and fragmentation of the archaeological resource; and
- Dewatering activities resulting in desiccation of waterlogged remains and deposits.

5.8.14 The implications, if any, of these actions will be discussed and significance criteria allocated to any identified impact.

5.8.15 The significance of effects will be assessed using the significance criteria set out below.

Magnitude of Impact

5.8.16 Determining the magnitude of impact is based on an understanding of how, and to what extent, the proposed development would impact heritage assets.

5.8.17 The magnitude of the impact is a product of the extent of development impact on an asset. Impacts are rated as High, Medium, Low and Negligible/Neutral. Impacts can be direct or indirect, adverse or beneficial. The criteria for assessing the magnitude of impact are set out in the table below:

Magnitude	Direct Impacts	Indirect Impacts
High Adverse	Demolition of built heritage assets or demolition within a Conservation Area. Complete removal of an archaeological site.	Radical transformation of the setting of an archaeological monument. Substantially harmful change in the setting of a built heritage asset or Conservation Area.
Medium Adverse	Harmful alteration (but not demolition) of a built heritage asset or alterations to a building in a Conservation Area. Removal of a major part of an archaeological site and loss of research potential.	Less than substantial harm to the setting of a built heritage asset or Conservation Area. Partial transformation of the setting of an archaeological site e.g. the introduction of significant noise or vibration levels to an archaeological monument leading to changes to amenity use, accessibility or appreciation of an archaeological site.
Low Adverse	Alterations to a built heritage asset or Conservation Area resulting in minor harm. Removal of an archaeological site where a minor part of its total area is removed but the site retains a significant future research potential.	Minor harm to the setting of an archaeological monument or built heritage asset or Conservation Area.
Negligible/ Neutral	Negligible impact from changes in use, amenity or access. Negligible direct impact to the built heritage asset or Conservation Area.	Negligible perceptible change to the setting of a building, archaeological site or Conservation Area.
Low Beneficial	Alterations to a built heritage asset or Conservation Area resulting in minor beneficial impacts. Land use change resulting in improved conditions for the protection of archaeological remains.	Minor enhancement to the setting of a built heritage asset or Conservation Area. Decrease in visual or noise intrusion on the setting of a building, archaeological site or monument.

Magnitude	Direct Impacts	Indirect Impacts
Medium Beneficial	Alterations to a built heritage asset or Conservation Area resulting in moderate beneficial impacts. Land use change resulting in improved conditions for the protection of archaeological remains plus interpretation measures (heritage trails, etc.)	Significant reduction or removal of visual or noise intrusion on the setting of a building, archaeological site or monument. Improvement of the wider landscape setting of a built heritage asset, Conservation Area, archaeological site or monument. Improvement of the cultural heritage amenity, access or use of a built heritage asset, archaeological site or monument. Moderate enhancement to the setting of the built heritage asset and Conservation Area.
High Beneficial	Arrest of physical damage or decay to a built heritage asset or structure. Alteration to a built heritage asset or Conservation Area resulting in significant beneficial impact.	Significant enhancement to the setting of a built heritage asset. Conservation Area or archaeological site, its cultural heritage amenity and access or use.

Significance of Impact

5.8.18 The significance of the impact of the REP on archaeological and heritage assets is determined by the importance of the asset and the magnitude of impact to the asset. The table below presents a matrix that demonstrates how the significance of Effect will be established:

Magnitude of Impact	High	Medium	Low	Negligible / Neutral
International Importance	Substantial/ Major	Major	Major	Negligible
National Importance	Major	Major/ Moderate	Moderate	Negligible
Regional/County Importance	Major/ Moderate	Moderate/ Minor	Minor	Negligible
Local Importance	Minor	Minor	Negligible	Negligible
Negligible Importance	Negligible	Negligible	Negligible	Negligible

Current Baseline

5.8.19 There are no prehistoric Warwickshire HER records within the site. There are number of prehistoric recorded within the wider study area. These include: prehistoric flints, a Neolithic/Bronze Age ring ditch, prehistoric cropmarks (MWA4143), prehistoric enclosures, prehistoric linear features, and a Bronze Age axehead. There are no Roman remains recorded within the site and few remains recorded within the wider area. There are no Saxon or Medieval remains recorded within the site. Archaeological evaluation of land to the west of the site revealed a series of Medieval settlement remains which do not extend into the proposed Development Site. There are no post-medieval remains recorded within the site.

5.8.20 The geophysical survey of the site revealed no anomalies of archaeological origin within the site.

Potential Significant Effects

Construction Effects

5.8.21 Construction effects would largely comprise physical impacts upon below-ground non-designated archaeological remains. Such effects may arise from the foundations of new buildings, landscape works, changes to hydrological conditions and requirements such as trenches for new utilities and services.

Built Heritage

Introduction

5.8.24 This ES Chapter will be produced by Robert Johns from Wardell Armstrong.

Proposed Methodology

5.8.25 Wardell Armstrong Archaeology team would produce a Built Heritage Assessment suitable for input into a planning application. The assessment would be carried out in accordance with the National Planning Policy Framework (NPPF) and would follow the guidelines for desk based assessment, as set out by the Chartered Institute for Archaeologists (CIfA), and good practice guidance published by Historic England.

5.8.26 This baseline assessment would:

- Provide an archaeological and historical overview of the site and an appropriate study area extending 1km from the site boundary;
- Establish the presence of designated and non-designated heritage assets within the site and study area through consultation with the Warwickshire Historic Environment Record (HER) and the National Heritage List for England (NHLE); and
- Verify the presence of any known heritage assets and assess the potential for unknown heritage assets within the site through a site walkover survey.

5.8.27 The baseline assessment would form an appendix to the Built Heritage ES Chapter. In accordance with para 194 of NPPF, it would provide a proportionate assessment of the contribution that settings make to the significance of heritage assets, to allow potential impacts to heritage significance to be assessed.

5.8.28 *The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning: 3* (GPA 3), published by Historic England would, would inform the settings assessment.

- In ensuring the statutory duty of the Planning (Listed Building and Conservation Areas) Act, the NPPF requires that in determining applications '*great weight' should be given to the asset's conservation*' and that '*substantial harm to or loss of… grade II listed buildings, … should be exceptional*' whilst '*substantial harm*

to or loss of…assets of the highest significance, notably … Grade I and II listed buildings, … should be wholly exceptional*' (para:199 & 200).

5.8.29 The assessment will assign value to built heritage assets in accordance with Historic England and CIfA guidance and assess the potential magnitude of impact of the proposed development on designated and undesignated built heritage assets.

5.8.30 WA Built Heritage Specialists will liaise with related disciplines, e.g. Landscape and Visual Impact (LVIA), Noise, Air Quality, Ecology and Traffic.

5.8.31 Exchange of Information with LVIA in particular regarding Zones of Theoretical Visibility (ZTV), wireframes and photomontages will be important to inform assessment of impact. We would expect to liaise with LVIA specialists to agree appropriate viewpoints for photomontages with respect to Built Heritage assets.

5.8.32 A standard matrix, supported by professional judgement, will be used to determine Significance of Effect.

5.8.33 WA specialists would undertake Stakeholder Engagement, by telephone or email, with Statutory Consultees Warwickshire County Council (WCC) and Historic England to discuss key issues to be addressed in the assessment.

5.8.34 In particular, assessment of Indirect Impacts on Setting will be discussed with Statutory Consultees, in accordance with the Planning (Listed Building and Conservation Areas) Act and NPPF.

5.8.35 Proposals for mitigation will be reviewed; in particular Landscape, Ecology and Noise mitigation to ensure that elements are not being introduced to the development that are incompatible with the Historic Landscape Character.

5.8.36 Residual effect will be determined once the impact of appropriate mitigation measures has been determined.

5.8.37 Cumulative and In-combination effects will be reviewed and assessed in conjunction with the EIA co-ordinator.

Current Baseline

5.8.38 There is a single Grade II Listed building, Cawston Farmhouse, adjacent to the Phase 1 boundary to the north, that was addressed during the Phase 1 application.

5.8.39 The Heath, on the northwest edge of the Dunchurch Conservation Area c. 1km from the southern limit of Phase 2.

5.8.40 There's a lone Grade II Listed building set back from the south side of the Coventry Road to the south of the site.

Potential Significant Effects

5.8.41 The presence of construction plant/machinery may affect the setting of the neighbouring Grade II listed buildings and Conservation Area.

5.8.42 Once operational, the proposed residential development may affect the setting of the neighbouring Grade II listed buildings and Conservation Area via the introduction of increased traffic, noise and visual impacts resulting from the new built development.

5.9 Climate Change

Introduction

5.9.1 This ES Chapter will be produced by Paul Evans from Wardell Armstrong.

5.9.2 The EIA Regulations (2017) introduced the requirement to consider climate as part of the EIA process and require a consideration of "the impact of the project on climate" and "the vulnerability of the project to climate change" (Schedule 4, paragraph 5(f)).

5.9.3 The climate change impact assessment will identify and assess the likely significant effects of the Proposed Development on the climate (i.e., greenhouse gas/carbon emissions), and how to minimise these. The assessment also considers how the Proposed Development adapts to a changing climate, how other EIA topics/ receptors could be affected, and how resilience can be designed into this.

5.9.4 The assessment will consider any national and local planning policy requirements, which include the following:

- The Town and Country Planning (EIA) Regulations (2017);
- The Climate Change Act 2008 (2050 Target Amendment) Order 2019;
- The National Planning Policy Framework (NPPF) (2021);
- The Rugby Borough Council Local Plan 2011-2031 (Adopted June 2019)

Proposed Assessment Methodology (Part 1 Potential Impacts on Climate (GHG Emissions Assessment))

5.9.5 Due to the way climate change is assessed in an EIA, the proposed methodology may vary from typical methodologies employed by other ES chapters. The focus of the first part of the assessment will be on greenhouse gas (GHG) emissions associated with the Proposed Development over the entire lifecycle from cradle to grave, and the impacts on climate change.

5.9.6 Several guidance publications have been produced containing suggested methods for establishing a baseline and limited advice on techniques for applying significance thresholds. The following guidance documents will be used to inform the assessment:

- IEMA's 'Environmental impact assessment guide to assessing greenhouse gas emissions and evaluating their significance' (2022);
- European Commission, 'Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment' (2013);
- European Investment Bank (EIB) Project Carbon Footprint Methodologies (2022);
- BSI - PAS 2080:2016 'Carbon Management in Infrastructure'; and
- IEMA's guidance 'Climate Change Resilience and Adaption' (2020).

5.9.7 Additionally, the GHG Protocol, which dictates standards in GHG accounting methods, will be utilised in defining emission scopes.

5.9.8 The IEMA's 'Environmental impact assessment guide to assessing greenhouse gas emissions and evaluating their significance' (2022) will act as the primary guidance for the climate change assessment, as this is the most recent available and is applicable to the UK. It is also considered to be the most holistic method of assessing GHG emissions, as it applies a whole life cycle methodology, incorporating not just the construction and operational phase of development, but also the decommissioning/end of life and beyond asset life cycle stages, allowing a more robust "worst case scenario" to be applied.

5.9.9 The EIB "Project Carbon Footprint Methodologies" (2022) guidance will be used to establish the baseline scenario, as this goes into greater detail in terms of baseline methodology. The current baseline represents existing GHG emissions before

construction and operation of the proposed development, and should account for expected land use change resulting in the release of previously sequestered carbon (such as the disturbance or removal of woodland). The baseline will represent a realistic worst-case scenario as per best practise. Where alternative baselines have been considered early in the project life cycle, the EIA will also include a qualitative assessment of the emissions impact of these alternative baselines.

5.9.10 The future baseline will capture construction emissions, as well as both direct and indirect operational and user GHG emissions associated with the proposed development, irrespective of their source as recommended by the updated 2022 IEMA guidance. This will be proportionate to the scale of development.

5.9.11 Emissions will be calculated by multiplying the activity data with the emission factors published annually by the Department of Business, Energy and Industrial Strategy and the Department of Environment, Food and Rural Affairs, in line with IEMA (2022) best practice guidance.

GHG emission factor x Activity data = GHG emission or removal

5.9.12 Activities where expected emissions are less than 1% of the total emissions can be excluded, but only where all exclusions total up to a maximum of 5% of total overall emissions associated with the proposed development.

5.9.13 In terms of CO2e emissions, the project as a whole is assessed for its 'relative emissions (Re)' or net emissions. This is expressed as the difference between absolute emissions generated by the proposed project and the baseline emissions for a 'typical' development of a similar type.

Relative Emissions (Re) = Absolute Emissions (Ab) – Baseline Emissions (Be)

5.9.14 This methodological approach is recommended by the EIB (2022).

Study Area & Receptors

5.9.15 As climate change is a global phenomenon, highly localised climate change impacts as a direct result of emissions associated with the Proposed Development are not assessed in the same way as in other technical EIA disciplines, which consider the significance of effects on individual receptors within a specified geographical location.

5.9.16 The assessment will consider the emissions from the Proposed Development that will contribute to global climate change, based on the information available at the planning stage. The assessment will focus on CO2 emissions associated with the whole lifecycle stages of the development, defined by IEMA (2022) as: before life stage (pre-construction, product and construction process stage); use stage; end of life stage; and beyond asset life cycle (benefits and loads beyond the system boundary).

Consultation

5.9.17 Consultation activities were not undertaken during the Scoping exercise for an assessment of emissions associated with the Proposed Development. No additional consultation activities are deemed to be necessary in support of the preparation of the ES Chapter.

Significance Criteria

5.9.18 All GHG emissions are considered Significant Adverse and will be assessed as Minor, Moderate, or Major. Action to reduce emissions is defined by the IEMA guidance as being essential for all projects as emissions from all projects will contribute to climate change. Only projects that actively reverse (rather than only reduce) the risk of severe climate change can be judged as having a beneficial effect.

5.9.19 Where GHG emissions cannot be avoided, the goal of the EIA process is to reduce the project's residual emissions at all stages. The impact assessment will identify any likely significant effects, either positive or negative, based on the difference between predicted emissions and the baseline. Should any significantly unacceptable levels of emissions be predicted then the assessment will make a qualitative recommendation for reduction measures, such as on-site renewable energy to reduce emissions to acceptable levels.

Current Baseline

5.9.20 Prior to development the proposed Site is comprised of agricultural land which would typically emit emissions in the form of methane (CH4) and N2O from the soils. The Site has no existing demands for regulated or unregulated energy and therefore no emissions associated with these sources.

Potential Significant Effects

5.9.21 The potential environmental impact of the Proposed Development is the release of greenhouse gas (GHG) emissions into the environment as a result of the project's whole life cycle.

5.9.22 The IEMA and PAS 2080 guidance reinforces a key principle of EIA which is to reduce the impact of a project's emissions through mitigation. Therefore, it is important to look at what measures can be implemented through the design and EIA process to reduce the release of GHG emissions.

5.9.23 Potential mitigation measure for the Proposed Scheme could include:

- Introduce sustainability measures for construction;
- Introduce sustainability measures for building design and site layout;
- Optimisation of natural ventilation, natural cooling, and natural daylight;
- Use of renewable energy technology to provide on-site power generation for electricity and heat demands;
- Use of window shading or heat reflective glass;
- Using low energy lighting, and installing energy efficient appliances;
- Improved sustainable drainage to reduce flood risk;
- Avoid disturbance of peat;
- Provision for biodiversity, including climate resilient landscaping;
- Increasing availability of green and blue spaces to reduce urban island effect;
- Installing infrastructure for electric vehicle charging;
- Installing smart meters.

Proposed Assessment Methodology (Part 2 Climate Resilience Assessment)

5.9.24 IEMA's guidance 'Climate Change Resilience and Adaption' (2020) presents a methodology for the consideration of climate change resilience and adaption in the EIA process, which will be followed in the EIA.

5.9.25 The aim of the second part of the assessment will be to assess the vulnerability of the Proposed Development to global climate change, which will highlight the potential risk of major accidents, and to identify adaptation and resilience measures to mitigate risk.

5.9.26 The first stage of the assessment is to is review the future climate projections published by the Met Office (through the UK Climate Projections (UKPC18) website), which includes variables such as annual mean temperatures and annual changes in summer and winter precipitation.

5.9.27 It is proposed that the site is assessed for climate projections under four different future climate scenarios, to cover the life of the development in varying future conditions. These range from RCP2.6 where atmospheric emission concentrations are strongly reduced through to the worst-case scenario, RCP8.5, where emission concentrations continue to rise, unmitigated. A range of probability levels are available, although this study will use the 50% probability level (i.e. a central estimate with less uncertainty).

5.9.28 The principal steps that will be undertaken are to:

- Define the current climate at the site and surrounding region;
- Assess the future climate scenario for the site and region;
- Qualitatively assess, using professional judgement, how any sensitive receptors identified across other EIA topics are likely to be affected by the future climate scenario above; and
- Consider and identify the resilience and adaptive measures associated with the scheme's design or management to mitigate the risk to receptors and the development as a whole.

Study Area & Receptors

5.9.29 The location of a site has a considerable influence when assessing vulnerability and adaptability to future climate change. The climate change chapter will review this in detail, however site location features that may have the potential to cause, mitigate or be at risk from climate change can be initially identified as:

- Define the current climate at the site and surrounding region;
- Assess the future climate scenario for the site and region;
- Qualitatively assess, using professional judgement, how any sensitive receptors identified across other EIA topics are likely to be affected by the future climate scenario above; and
- Consider and identify the resilience and adaptive measures associated with the scheme's design or management to mitigate the risk to receptors and the development as a whole.

5.9.30 The Proposed Development will impact global greenhouse gas concentrations. Therefore, within a climate change context, the key sensitive receptor to the impacts of the development will be global climate. This receptor differs from others listed within an EIA context as it is not at a distinct local scale, but a global one.

Consultation

5.9.31 Consultation activities were not undertaken during the Scoping exercise for the assessment of climate resilience. No additional consultation activities are deemed to be necessary in support of the preparation of the ES Chapter.

Significance Criteria

5.9.32 Following the IEMA guidance (2020), the assessment of resilience will use a combination of probability and consequence to reach a reasoned conclusion on the magnitude of the effect of climate change on the Proposed Development, including risk of vulnerability to increased heatwaves, flooding and extreme weather. It is likely that if the probability and/or consequence of the effect is high then the magnitude of the effect would also be high. The significance of this impact on the Proposed Development will be determined using the Significance Matrix for Climate Resilience. Effects of Moderate Adverse or Major/Substantial Adverse are considered Significant.

Current Baseline

5.9.33 England is classified under Köppen Geiger as having a ‘Cfb’ climate, more commonly known as a temperate oceanic climate. These are typically mid latitude climates with warm summers and mild winters. The average temperature in Rugby where the Application Site is located is 9.5°C, with an average rainfall of 693mm per year. The future climate baseline will be determined using the UK climate change projections for a regional 25km grid surrounding the Application Site boundary.

Potential Significant Effects

5.9.34 The potential significant effects of climate change on the proposed development are the increased risk of flooding events and heatwaves. Designing in mitigation measures can build the Proposed Scheme’s resilience to future climate change.

6 TECHNICAL TOPICS TO BE SCOPED OUT

6.1 Introduction

6.1.1 This section provides an overview of the technical topics included in Schedule 4 of the EIA Regulations proposed to be excluded from the scope of the ES (i.e. 'scoped out'). These topics include:

- Agriculture
- Human Health
- Socio-economics
- Ground Conditions

6.1.2 Each of the sub-sections provides a summary of the environmental baseline in relation to that topic and justification as to why it is proposed to be excluded from the scope.

6.2 Agriculture

6.2.1 The site currently comprises arable land and is likely to be best and most versatile agricultural land based on DEFRA's MAGIC website. An Agricultural Land Classification (ALC) survey will therefore be undertaken and submitted as part of the planning application to ascertain whether the land is best and most versatile. Although there is the potential for an effect, given the size of the site it is not considered it is likely to be a significant effect.

6.3 Human Health

6.3.1 There are no proposed uses that could result in significant effects on human health. Effects on future residents in relation to flooding, noise and air quality are already

proposed to be included in the EIA. It is therefore not considered necessary for there to be a separate chapter.

6.4 Socio-economic

6.4.1 There will be economic benefits arising from the development in terms of employment opportunities, but these are not considered significant. Details of the benefits will however be included in the Planning Statement that forms part of the application.

6.6 Ground Conditions

6.6.1 The site is primarily in agricultural use, and the risks to end users is considered to be very low. There are unlikely to be potential significant effects on future residents due to existing ground conditions. The site is agricultural fields with woodland and has remained largely unchanged with no previous development on site that is likely to result in any significant risk to future residents. As detailed in Wardell Armstrong's 2021 Site Investigation Factual Report, which forms Appendix 5 and will be submitted as part of the planning application, any significant effects posed from the ground conditions and geotechnical hazards related to ground stability are considered to be low. The conceptual site model for the site and the assessment of the land use history has not identified any significant sources of land, groundwater or surface water contamination, or ground gases on site or off site. Therefore, it is considered based on the information reviewed, the current and historical use of the site does not represent a risk to the environment and is suitable for the proposed end use of residential development with associated infrastructure.