Cawston Farm Phase II South Rugby

EIA Scoping Report

On behalf of Tritax Symmetry

TRITAX SYMMETRY
A TRITAX BIG BOX COMPANY

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1 Introduction

1.1 Project Background

1.1.1 This Environmental Impact Assessment (EIA) Scoping Report has been prepared by Stantec UK Ltd on behalf of Tritax Symmetry ("the Applicant") in relation to the proposed development of land south of B4642 Coventry Road and east of A4071 Parkfield Road, Cawston, Rugby ("the Site"). The Site is defined on the Preliminary Site Location Plan included in **Appendix A.**

1.1.2 The Site lies within the administrative area of Rugby Borough Council (RBC) and forms part of the wider South West Rugby allocation covered by Policy DS8 of the Rugby Council Local Plan 2011 – 2031 (June 2019). The allocation is informed by the South West Rugby Masterplan Supplementary Planning Document (SPD) (June 2021) and comprises a mix of residential, employment, community uses and open space. The Site is allocated for residential use.

1.1.3 The Applicant intends to submit an outline planning application to RBC (as the relevant Local Planning Authority) for the development of up to 350 dwellings, associated access and infrastructure works ("the Proposed Development") at the Site. An EIA will be undertaken and an Environmental Statement (ES) will be prepared in compliance with the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) ("the EIA Regulations"). The ES will be submitted with the outline planning application.

1.2 Purpose of this Report

1.2.1 This EIA Scoping Report has been prepared to document the proposed scope and approach of an EIA to support an outline planning application for the Proposed Development and to request a formal Scoping Opinion from RBC as Local Planning Authority. The EIA will consider the likely significant effects resulting from the Proposed Development, as well as the cumulative effects with other existing and/or approved developments in the local area.

1.2.2 Understanding the likely significant effects that the Proposed Development may have on the environment is an integral part of the design process that is currently underway. The EIA and ES are intended to provide comprehensive and robust environmental information on the likely significant effects of the Proposed Development on the environment to assist RBC in the determination of the outline planning application.

1.2.3 To ensure the EIA remains proportionate, it must be carefully 'scoped' to only address those environmental topics where effects or impacts are likely to be 'significant'. While other environmental issues may be considered relevant, they are not of themselves likely to be key factors in decision making.

1.2.4 The environmental topics that are proposed to be included in the EIA scope and those that are not (referred to as 'scoped out') are presented in **Chapters 7-14** and **Chapter 15,** respectively. Accordingly, this report details how the environmental issues which have been included in the EIA scope are proposed to be examined and progressed as part of the EIA.

1.2.5 The aim of the EIA is to protect the environment through minimising adverse environmental effects and to take advantage of opportunities for environmental enhancement. For those topics that are proposed to be 'scoped out' as significant effects are not likely, this Scoping Report identifies an evidence led-approach for so-doing.

1.2.6 This report provides information to key consultees regarding the proposal pursuant to the 'EIA Regulations' and sets out the intended scope of the EIA and content of the ES. On the basis of this report, and in accordance with Regulation 15 of the EIA Regulations, the Applicant therefore requests a Scoping Opinion from RBC.

1.3 Terminology

1.3.1 The following terms have been used within the Scoping Report:

- '**Proposed Development'** – the development for which outline planning permission is sought, as described in **Chapter 3**;
- **'the Site'** – the site area being developed, as illustrated on the Preliminary Site Location Plan in **Appendix A** and described in **Chapter 2**;
- **'the Applicant'** – Tritax Symmetry;
- '**RBC'** – Rugby Borough Council;
- **'WCC'** – Warwickshire County Council;
- **'South West Rugby allocation'** – land allocated for development in RBC Local Plan 2011 – 2031 (2019) under Policy DS8;
- **'South West Rugby Spine Road Network'** – the name of the spine road network to be provided through the South West Rugby Allocation; and
- **'Potford Dam Link Road'** – the section of the strategic spine road network referred to in the Local Plan as SW Link Road Phase 3.

1.4 Report Structure

1.4.1 This report continues with the following:

- **Chapter 2:** Site Description;
- **Chapter 3:** Proposed Development;
- **Chapter 4:** Planning Policy Context;
- **Chapter 5:** EIA Process
- **Chapter 6:** Proposed Scope of the EIA
- **Chapters 7 – 14:** Topics included in the EIA Scope;
- **Chapter 15:** Topics Not included in the EIA Scope; and
- **Chapter 16:** Summary and Next Steps.

2 Site Description

2.1 Site Location

2.1.1 The Site comprises a triangular shaped parcel of land, measuring approximately 14 hectares (ha), located at National Grid Reference SP 46328 72473. This Site forms part of the wider South West Rugby Allocation covered by Policy DS8 of RBC Local Plan 2011 – 2031 (2019) and is allocated for residential use.

2.1.2 The Site is situated approximately 5km south west of Rugby town centre and to the south west of the existing residential area of Cawston. The indicative location and boundaries of the Site are presented on the Preliminary Site Location Plan presented in **Appendix A**.

2.2 Site Description and Surrounding Area

2.2.1 The Site is currently comprised of undeveloped agricultural land. Topographically, the highest points are in the south of the Site which generally slopes down to the north. To the west, the Site is bounded by a disused railway line which forms the boundary of the Local Plan allocation and on which there is a Sustrans proposed improvement to the National Cycle Network. Land further west beyond the railway line forms part of Birmingham Green Belt (Rugby District). The A4071 and further areas of Green Belt lie beyond the railway line to the west.

2.2.2 To the east, the proposed route for the Potford Dam Link Road forms the eastern boundary of the Site. An existing unnamed watercourse lies parallel to the proposed link road route which flows in a northerly direction, passing Potford Dam to its west before passing under B4642 Coventry Road, and on to the River Avon. A tributary of this ditch flows through the southwestern part of the Site before being culverted beneath the disused railway. The ditch is then culverted back beneath the railway and re-emerges into open channel flowing in a north westerly direction in the northern part of the Site, discharging to the ditch to the east at the Site boundary.

2.2.3 Cawston Spinney and Cawston Fox Covert Local Wildlife Site (LWS) is located to the east beyond Potford Dam, which includes ancient and semi-natural woodland (Priority Habitat composed largely of deciduous woodland and partly covered by Tree Preservation Order (TPO) 39). Land to the south of the LWS (to east of the Site beyond the proposed link road) is shown on the South West Rugby Supplementary Planning Document (SPD) to be safeguarded for potential employment development.

2.2.4 Cawston Farm Phase I residential development (currently under determination - Planning Ref: R18/0995) is situated adjacent to the Site to east. Beyond this to the east, an outline planning application for 210 residential properties and a primary school is currently under determination (Planning Ref: R18/0936).

2.2.5 Station Farm Cottage is located adjacent to the southern Site boundary. Land beyond this to the south is allocated for employment use as part of the wider South West Rugby Allocation and was granted outline permission in 2020 (Planning Ref: R16/2569). A Reserved Matters application for the erection of a building (Class B8) on the plot directly south of the Site was approved in January 2021 (Planning Ref: R21/0789) and a subsequent application for the provision of a landscaped mound up to 5m high with a 3.5m acoustic fence on the top (Planning Ref: R21/0823) was approved in January 2022, which is situated along the boundary between the employment land to the south and the Site.

2.2.6 Brickyard Cottages (a mix of commercial and residential properties) and the residential property The Spinney are situated to the north of the Site, south of B4642 Coventry Road. Beyond the B4642 to the north is the existing settlement of Cawston and the new residential development of The Spinneys.

2.2.7 The A45 (London Road) and the M45 are located less than 1km from the Site which provide direct links to Coventry in the north, to Northampton, Milton Keynes and London to the south.

2.2.8 Public Right of Way (PRoW) R168b and R168x bisect the Site from the north east and west, respectively, joining in the centre of the Site and becoming PRoW R168y which continues away from the Site in a southerly direction. These PRoWs connect the Site to the B4642 to the north, the A4071 to the west, and the B4429 Coventry Road to the south.

2.2.9 The EA's online Flood Map for Planning map indicates that the site is located within Flood Zone 1 'Low Probability' of flooding. Whilst not accurately represented on the EA's Flood Map, there is a small area in the northern tip of the site at risk of flooding in the modelled 1 in 1,000 year flood event (i.e. Flood Zone 2). The EA Surface Water Flood Map indicates that the low point in the northern corner of the Site is potentially at a 'Low' likelihood of surface water flooding. The vast majority of the site is at a 'Very Low' likelihood of surface water flooding.

2.2.10 The geology of the Site comprises of mudstone bedrock and a combination of clay, silt, sand, and gravel superficial deposits. A below ground Cement Gas Pipe runs beneath and across the entire Site in a north east - south west orientation.

2.2.11 Designated heritage assets in the surrounding area include Cawston Farm (Grade II listed building) which is located approximately 500m east of the Site and a Scheduled Monument (Prehistoric pit alignment and associated features on Lawford Heath – Reference no. 33140) situated approximately 1.3 km to the west, on the opposite side of the A4071. There are four Conservation Areas located within 5km of the Site (none within 1km): Bilton (2km north east), Thurlaston (1km south), Dunchurch, (approximately 2.1km east) and Bilton Road (3.9km north east).

2.2.12 The Site is not subject to any Statutory Designations itself and is generally isolated from Statutory Designated receptors, however, there are potentially sensitive ecologically designated and non-designated areas within the vicinity of the Site including:

- Cawston Spinney and Cawston Fox Covert (Local Wildlife Site's, or LWS) to the east;
- Leamington to Rugby Railway LWS which is situated adjacent to the western boundary of the Site;
- Draycote Meadows Site of Special Scientific Interest (SSSI) and LWS located approximately 1.4 km south west; and
- Cock Robin Wood Local Nature Reserve (LNR) approximately 2.7 km east.

2.2.13 RBC declared the whole urban area of Rugby (including the Site) as an Air Quality Management Area (AQMA) in 2004 due to exceedances in annual mean Nitrogen Dioxide (NO_2).

3 Proposed Development

3.1 Outline Application

3.1.1 An outline planning application will be submitted for the Proposed Development to provide up to 350 new residential dwellings (Use Class C3) and will include the necessary enabling, access and highways, drainage, landscaping and utility works that are required to facilitate the development.

3.1.2 The Proposed Development will include a section of the Potford Dam Link Road to the east, connecting from Cawston Farm Phase I to the A45/M45 roundabout to the south, via the employment site. Access to the Site during operation will be via two new accesses from the link road into the eastern side of the Site. Vehicular access during initial construction phases will be from the south via a temporary haul road, via the employment site, and from Potford Dam Link Road thereafter.

3.1.3 An existing unnamed watercourse which bisects the proposed route for the Potford Dam Link Road will be realigned as part of the development and rerouted to the east of the link road.

3.1.4 No demolition of buildings and/or on-site structures is required prior to construction.

3.1.5 The design of the Proposed Development takes account of the larger South West Rugby Allocation and is designed so as not to prejudice the delivery of the remainder of the allocation. Proposals will be refined through the EIA process and in response to consultations with statutory and non-statutory consultees and the local community.

3.1.6 Reflecting the outline nature of the permission sought by the Applicant, the EIA will adopt a ‘Rochdale Envelope’ approach and proceed on the basis of assessing the likely significant effects of a set of maximum key development parameters. These will be set out within the EIA.

4 Planning Policy Context

4.1 Introduction

4.1.1 This section summarises the key planning policy documents that will inform and set the context for the EIA process. Further detail on the topic-specific policies within these documents and how they have informed the topic assessment will be set-out in the ES.

4.2 National Planning Policy

National Planning Policy Framework (2021)

4.2.1 The National Planning Policy Framework 2021 (NPPF) sets out the Government's approach to planning matters and is a material consideration in the determination of planning applications. At the heart of the framework is a presumption in favour of sustainable development. Paragraph 8 sets out sustainable development with three overarching objectives:

"a) an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

c) an environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

4.2.2 This is supported by guidance in the national Planning Practice Guidance (PPG) that helps interpret policy for delivery and includes a section specifically to provide guidance on EIA.

4.3 Local Planning Policies

The Rugby Borough Council Local Plan 2011-2031 (2019)

4.3.1 RBC adopted the new Local Plan for the period up to 2031 in June 2019. The Local Plan replaces the Core Strategy (June 2011) and the policies saved from the Rugby Borough Local Plan (2006).

4.3.2 The purpose of the new Local Plan is to ensure that development meets the priorities of the Borough including:

- setting out policies for meeting future needs relating to areas such as housing, employment, community facilities, transport and other infrastructure needed to support development;
- strategic allocations of land to meet future needs;
- policies for protecting the environment; and
- identifying boundaries of strategic greenspace.

4.3.3 The Local Plan allocates the South West Rugby site for around 5,000 dwellings and 35 Ha (gross) of B8 (storage and distribution) employment land (Policies DS3, DS4, DS8 and DS9).

4.3.4 **Policy DS8**: South West Rugby states:

"A new neighbourhood of around 5,000 dwellings and 35 ha of B8 employment land will be allocated on land to the South West of Rugby, as delineated on the Policies Map.

...

The site must also contain comprehensive sustainable transport provision that integrates with existing networks and provides good connectivity within the development and to the surrounding area including:

- *An all traffic spine road network, as allocated in Policy DS9 and the Policies Map, connecting the site to the existing highway network, phased according to milestones identified through the IDP* (Infrastructure Delivery Plan)*;*
- *Provision of a comprehensive walking and cycling network to link residential areas with the key facilities on the site, such as schools, health centre and retail services;*
- *High quality public transport services to Rugby town centre; and*
- *Further on-site and off-site measures to mitigate transport impact as detailed in the IDP, including access to the local strategic road network as deemed necessary through the Strategic Transport Assessment and agreed by Warwickshire County Council (WCC) and Highways England. These measures will take account of the proposals within the IDP."*

In addition to these requirements, proposals must:

- *Incorporate a continuous Green and Blue Infrastructure* (GI) *corridor, as part of the wider allocation, identified in the GI Policies map, linking to adjacent networks and utilising existing and potential habitats and historic landscape, in particular between Cawston Spinney and Cock Robin Wood;*
- *Provide a Woodland Management Plan setting out how woodland within the boundaries of the allocation, in particular Cawston Spinney, will be protected from potential adverse impacts of new development, including details of a buffer in accordance with Natural England's standing advice on Ancient Woodland and veteran trees;*
- *Specifically, regarding the employment allocation to incorporate design and landscaping measures; including structural landscaping to mitigate the impacts of the buildings on the surrounding landscape and setting of any nearby heritage and GI asset, including Thurlaston Conservation Area; and*
- *Incorporate details of phasing and trigger levels for the provision of required infrastructure consistent with this policy, Policy DS9, the IDP and informed by the Masterplan SPD.*

Development proposals shall respect and maintain a physical and visual separation between Rugby town and Dunchurch to prevent coalescence and protect their individual character and identity. A significant buffer, between Rugby and Dunchurch which incorporates a Green Infrastructure Corridor from Cock Robin Wood to Cawston Spinney as identified in the South West Rugby Masterplan SPD, must form an integral part of proposals for the site.

Development proposals within the South West Rugby allocation must come forward comprehensively, informed by the South West Rugby Masterplan SPD, and in accordance with the requirements of this policy, Policy DS9, the Policies Map, and the Infrastructure Delivery Plan. Rugby Borough Council will not support ad hoc or piece meal development which is contrary to the aims of this Policy, or development that is inconsistent with the Masterplan for the site.

Development proposals will require consultation with the Local Flood Authority, in order to identify any potential hydrological impacts, particularly with regard to potential hydrological impacts on Draycote Meadow."

4.3.5 **Policy DS9**: South West Rugby Spine Network Road states:

"*The Borough Council allocates land to facilitate the full alignment of the South West Rugby spine road network to support and enable the delivery of the South West Rugby allocation, as identified on the … Urban Policies Map.*

Development which is likely to prejudice delivery of this infrastructure will not be permitted. The design specification and routing of the spine road network will be considered in more detail in the South West Rugby Masterplan SPD and development proposals must be consistent with the agreed alignment as set out in this document. Full details will be provided in the supporting information to planning applications.

Development proposals for South West Rugby must enable delivery of the full spine road network as early as possible post commencement of development on site, in accordance with the phasing milestones identified in the Infrastructure Delivery Plan.

Proposals for development that are shown to have a severe impact on the local road network, before or after the implementation of the Dunchurch Crossroads mitigation scheme, must demonstrate how they will contribute to the delivery of the spine road network and ensure it is delivered according to the phasing milestones set out in the IDP and South West Rugby Masterplan SPD.

Development proposals, including those outside of the South West Rugby allocation, will not be granted planning permission for implementation ahead of the delivery of the east-west Homestead Farm link (between A426 and B4429), unless demonstrated in accordance with the NPPF that any residual impacts on the highway network are not considered to be severe, to the agreement of Warwickshire County Council and Rugby Brough Council.

Should the alignment of the spine road network be varied by agreement with the Highway Authority and Local Planning Authority in the light of further technical work, a revised alignment plan will be published to which this policy will apply."

4.3.6 The following policies are also relevant in the Local Plan:

- GP1 Securing Sustainable Development;
- GP2 Settlement Hierarchy;
- GP4 Safeguarding Development Potential;
- DS1 Overall Development Needs;
- DS5 Comprehensive Development of Strategic Sites;
- H1: Informing Housing Mix;
- H2: Affordable Housing Provision;
- H6: Specialist Housing;
- HS1 Healthy Safe an Inclusive Communities;
- HS2 Health Impact Assessment;
- HS4 Open Space and Recreation;

- HS5 Traffic Generation and Air Quality;
- NE1: Protecting Designated Biodiversity and Geodiversity Assets;
- NE2: Strategic Green and Blue Infrastructure;
- NE3: Landscape Protection and Enhancement;
- SDC1 Sustainable Design;
- SDC2 Landscaping;
- SDC3 Protecting and Enhancing the Historic Environment;
- SDC4 Sustainable Buildings;
- SDC5 Flood Risk Management;
- SDC6 Sustainable Urban Drainage;
- SDC7 Protection of the Water Environment and Water Supply;
- SDC9: Broadband and Mobile Internet;
- D1 Transport;
- D2 Parking Facilities;
- D3 Infrastructure and Implementation; and
- D4 Planning Obligations.

South West Rugby Masterplan Supplementary Planning Document (SPD) (2021)

4.3.7 The South West Rugby Masterplan SPD was adopted in June 2021. The SPD provides the framework for the future development of the South West Rugby allocation, providing further guidance that are set out in Policy DS8, which establishes the principle of development. The SPD includes information about layout, site details, infrastructure requirements and design considerations. The SPD is a material consideration in planning decisions, however, it does not form part of the statutory development plan.

4.3.8 The SPD contains the following objectives (paragraph 4.3):

"In summary, the objectives for the development are as follows:

- *A new neighbourhood, comprising a mix of uses that incorporate current best practice in sustainable and urban design (in line with Section 12 of the NPPF on achieving well-designed places). To design the district centre and other movement generating uses so that they prioritise pedestrian and cycle movements incorporating pedestrian permeability and cycle friendly streets and routes, maximise public transport access and integrate open space and biodiversity within the built form and green infrastructure network. To ensure this is a new neighbourhood that maintains its own sense of identity by safeguarding a significant buffer of land that retains the physical and visual separation between Rugby and the village of Dunchurch. This landscaped buffer will, as part of the site wide green/blue infrastructure network, create a new green infrastructure corridor that:*

- *retains and strengthens the existing hedgerow and tree planting where possible taking into account the preferred location of the spine road network and access to development parcels;*
- *introduces new hedgerow and tree planting;*
- *creates new habitats including a continuous tree canopy between Cock Robin Wood and Cawston Spinney for bats, taking account of the need for the delivery of the spine road network, internal access roads and the design guidance set out in Section 13 and Figure 7 of this SPD;*
- *creates recreational routes for walking, cycling and running, and informal/semi-natural open spaces and play areas; and*
- *incorporates small-scale drainage/SuDs where appropriate unless there is a demonstrable benefit in combining drainage/SuDs to serve multiple development parcels;*

- *Green/blue infrastructure - the site contains areas of important habitat, including ancient woodland, that have ecological, cultural and amenity value. This SPD seek to ensure new development protects, enhances and secures the future of these important habitats and the species that inhabit them. This SPD also seeks to protect and enhance corridors to enable current and future species to move in, out and through the development area (in line with Section 15 of the NPPF on conserving and enhancing the natural environment). This SPD will also ensure that a measurable Biodiversity Net Gain is secured that promotes onsite conservation and mitigation within the development area boundaries and compensation elsewhere within the Borough as a last resort;*
- *Transport Infrastructure - the site is largely open countryside. In order to deliver the Local Plan allocation for employment and housing at South West Rugby, highways, walking, cycling and public transport infrastructure needs to be put in place, to enable the developments to function effectively (in line with Section 9 of the NPPF on promoting sustainable transport). Establishing the spine road network through the site, connecting to the existing road network to alleviate the traffic impact of the development on the Dunchurch crossroads and surrounding area, will be key; and*
- *Community Infrastructure - as it is being implemented the South West Rugby allocation will be effectively creating a new community that will require health services, education, shops, local play space, policing and fire services. These will be needed to create a sustainable development and to achieve the key aim of the NPPF (and more specifically Section 8 of the NPPF - promoting healthy and safe communities). This also relates to habitat and ecological enhancement as the provision of green infrastructure will also contribute to healthy active lifestyles.*

Air Quality SPD (2021)

4.3.9 The Air Quality SPD was adopted in July 2021. This SPD builds on policies in the Local Plan, specifically around mitigation of impacts of air quality.

4.3.10 The Air Quality SPD aims to:

- Improve consideration of air quality impacts in the planning process, in line with National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG) and the Local Plan;
- Help ensure consistency in dealing with air quality issues in planning applications;

- Explain the application of Local Plan policy HS5 (Traffic Generation and Air Quality, Noise and Vibration), in particular, and the mitigation requirements needed to achieve compliance;

- Identify the circumstances where detailed assessments need to be carried out in order to establish baseline conditions for planning applications which propose non-air quality neutral development; and

- Promote the identification of suitable mitigation on developments within Rugby's Air Quality Management Area (AQMA), either as part of planning applications or through pre-application discussions.

5 EIA Process

5.1 EIA Regulations

5.1.1 The process of EIA is governed by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) ("the EIA Regulations"). The EIA Regulations implement EC Directive 2014/52/EU and were enacted in the UK on 16th May 2017 to form the 2017 EIA Regulations.

5.1.2 The EIA Regulations set out the requirements for undertaking an EIA. Regulation 18 and Schedule 4 detail the required information for inclusion in an ES. For ease of reference, Regulation 18 and Schedule 4 are presented in **Appendix B.**

5.2 Screening

5.2.1 The Applicant intends to voluntarily undertake an EIA of the Proposed Development which will be documented in an Environmental Statement (ES). Therefore, no EIA screening request was prepared for the Proposed Development.

5.3 Scoping

5.3.1 The purpose of Scoping is to document the scoping exercise that has been undertaken to identify the nature and extent of the likely significant environmental effects of a development. It also allows for the issues identified to be subject to the appropriate level of assessment, thereby providing a focus for the EIA. Scoping also gives relevant stakeholders an opportunity to express their views on a development and to comment on the scope of the EIA.

5.3.2 This is the current stage of the EIA for the Proposed Development and this EIA Scoping Report has been prepared to fulfil the above purpose.

5.4 Consultation

5.4.1 The design of the Proposed Development is being progressed through an iterative process of design, assessment and review. It is therefore the intention that the proposals submitted for outline planning permission will incorporate measures to mitigate potential adverse environmental effects, and to enhance environmental benefits, where possible through its design.

5.4.2 Consultation with statutory and non-statutory consultees, along with the local community, will continue to inform both the EIA and the design of the Proposed Development.

5.5 Assessment

5.5.1 In general terms, the main stages in the EIA are as follows:

- Data Review – draw together and review available data;
- Scoping – identify significant issues, determine scope of EIA;
- Baseline Surveys – undertake baseline surveys and monitoring;
- Assessment and iteration – assess likely significant effects of development, evaluate alternatives, provide feedback to design team on adverse effects, incorporate any necessary mitigation, assess effects of mitigated development;
- Preparation of the ES; and

- Consultation on the ES and decision making.

5.5.2 The proposed scope of the EIA and approach to the assessment of likely significant effects is set out in **Chapter 6.**

5.5.3 The ES will include an assessment of cumulative effects, as outlined in **Section 6.4**.

5.6 Mitigation

5.6.1 One of the most important functions of the EIA process is to identify ways to mitigate adverse environmental effects and identify opportunities that the Proposed Development may have for environmental improvements. The EIA Regulations require an ES to contain: "*A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment".*

5.6.2 A hierarchy of methods for mitigating significant adverse effects will be followed; these are, in order of preference:

- Avoidance – designing development in such a way that avoids effects on the environment;
- Reduction – design the development or employ construction methodologies such that significant effects identified are reduced;
- Compensation – providing off-site enhancement in order to compensate for where onsite mitigation has not been possible; and
- Enhancement - opportunities that the development may provide to enhance the local and wider environment.

5.6.3 The ES will identify mitigation measures for construction and operation of the Proposed Development. Environmental effects remaining after mitigation measures have been incorporated are termed residual effects and these will be fully described in the ES.

Embedded Mitigation

5.6.4 There is a distinction between mitigation that is incorporated or 'embedded' into the design of the development (embedded mitigation) and mitigation that is subsequently identified in order to prevent, reduce or offset any remaining significant adverse effects (further mitigation). Embedded mitigation may include, for example, incorporation of drainage attenuation or maintaining appropriate buffers to potentially sensitive receptors at Site boundaries.

5.6.5 Embedded mitigation evolves through the iterative design process and early consideration of the likely significant impacts is essential to incorporating suitable embedded mitigation measures. Design principles of the development are being established and the ES will document the embedded mitigation measures that have been employed within the design - in response to the identification of potentially significant effects. The ES, within each of the topic chapters as appropriate, will also document the subsequent / secondary mitigation that is required to complement the embedded mitigation.

5.7 Monitoring

5.7.1 The 2017 EIA Regulations introduced new requirements in relation to monitoring. The Regulations require "*the monitoring of any significant adverse effects on the environment of Proposed development*". It is important to note that the Regulations only require the monitoring of significant adverse effects. The ES will therefore ensure that it is clear to the reader which, if any, effects are both adverse and significant and may therefore require monitoring.

5.7.2 It is important to note that Regulation 26 (3) of the 2017 EIA Regulations state that planning authorities should:

"(b) take steps to ensure that the type of parameters to be monitored and the duration of the monitoring are proportionate to the nature, location and size of the Proposed development and the significance of its effects on the environment; and

(c) consider, in order to avoid duplication of monitoring, whether any existing monitoring arrangements carried out in accordance with an obligation under the law of any part of the United Kingdom, other than under the Directive, are more appropriate than imposing a monitoring measure."

5.7.3 Schedule 4 of the 2017 Regulations identifies that an ES should identify "*any proposed monitoring arrangements*". The ES will therefore provide a schedule of proposed monitoring to clearly identify the monitoring that is proposed in relation to any significant adverse effects that have been identified. Any such monitoring will be proportionate, as noted above.

5.8 Environmental Statement

5.8.1 The EIA process will be documented in an ES which will describe the Proposed Development and set out the policy context; give full detail of the EIA methodology and any technical methodologies and data used in support of the assessment; present the assessment of likely significant environmental effects; detail any mitigation and enhancement measures that have been employed; and provide a schedule of proposed monitoring arrangements. The ES will present the residual effects, and an assessment of the cumulative effects and impact interactions, as described in **Chapter 6** below.

5.8.2 In accordance with requirement 9 of Schedule 4 of the 2017 EIA Regulations, a Non-Technical Summary of the ES shall also be provided.

5.9 Consideration of Alternatives

5.9.1 The 2017 EIA Regulations require an ES to include "*A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects*."

5.9.2 This legal requirement is expressed in very general and high-level terms, requiring only the inclusion of a *"description"* of *"reasonable"* alternatives and an *"indication"* of *"main"* reasons. Although a full description of alternatives and a full assessment of their likely environmental effects are not required, sufficient detail should be provided to allow for a meaningful comparison between the alternatives and the Proposed Development.

5.9.3 It is a matter for the developer to decide which alternatives it intends to consider. The 2017 EIA Regulations do not expressly require that an applicant considers alternatives.

5.9.4 The ES will fulfil the requirements of the 2017 EIA Regulations through identifying the reasonable alternatives considered by the developer and explain the main reasons for the choices made. A comparison of environmental effects will also be provided.

5.10 EIA Team

5.10.1 Regulation 18 of the 2017 EIA Regulations requires that, to ensure the completeness and quality of environmental statements, "*the developer must ensure that the environmental statement is prepared by competent experts*".

5.10.2 At this scoping stage, Stantec UK Ltd has been appointed to co-ordinate the EIA and to contribute relevant ES chapters within its scope of services.

5.10.3 Stantec is a founder member of the Institute of Environmental Management and Assessment's (IEMA) EIA Quality Mark scheme for quality in EIA. Stantec has a dedicated EIA team that specialises in leading the EIA process for development projects, including land development, regeneration, energy and infrastructure projects. Stantec typically leads 10-20 EIA projects each year. Each of Stantec's EIA team have suitable academic and professional qualifications, with professional qualifications including Practitioner and Associate membership of IEMA, Chartered Member of Royal Town Planning Institute and Chartered Environmentalist.

5.10.4 The Environmental Dimension Partnership (EDP) has been appointed to deliver landscape and visual, biodiversity, and cultural heritage consultancy and advice on the application, as well as producing the ES assessments for these topics. EDP has extensive experience in providing assessments for EIA purposes, as well as specialist knowledge of the environmental constraints present on the South West Rugby allocation

5.10.5 The ES will include a statement detailing the relevant expertise and qualifications of the lead authors of each chapter and of the EIA co-ordinator.

6 Proposed Scope of the EIA

6.1 Technical Scope

6.1.1 The technical scope describes the environmental topics that should be addressed by an EIA, in accordance with the requirements of Regulations 4(2) and 18 and Schedule 4 of the EIA Regulations. Schedule 4 sets outs that the ES must include a description of the aspects of the environment, which are likely to be significantly affected by the Proposed Development.

6.1.2 This requirement and the broad categories set out in Schedule 4, along with others which are considered to have the potential to lead to significant environmental effects, have been interpreted and applied in the context of the Proposed Development. **Table 6.1** therefore sets out those topics that it is proposed to both scope into and out of the EIA.

6.1.3 Section references are provided to where these categories have been included within the proposed EIA Scope. **Chapters 7 – 14** of this report provide an analysis of the resultant proposed technical scope of the EIA, while **Chapter 15** identifies those topics which it is proposed to scope out of the EIA (as it has been shown that significant environmental effects are unlikely to occur).

Table 6:1: Technical Scope

EIA Regulations Topic	Scoped in / Scoped out?	Explanation within this Scoping Report
Population and Human Health	Out	Chapter 15
Biodiversity (for example Flora and Fauna)	In	Chapter 13
Land (for example land take)	Out	Chapter 15
Soil (for example organic matter, erosion, compaction, sealing)	Out	Chapter 15
Water (for example hydromorphological changes, quantity and quality)	In	Chapter 11
Air	In	Chapter 9
Climate (for example greenhouse gas emissions, impacts relevant to adaptation)	Out	Chapter 15
Material assets	Out	Chapter 15
Cultural heritage, including architectural and archaeological aspects	In	Chapter 12
Landscape	In	Chapter 13
The inter-relationship between the above factors	In	Chapter 6
The Risk of Major Accidents and/or Disasters	Out	Chapter 15

6.1.4 The following section of this report sets out the principles for the temporal and spatial scope, and the approach to the assessment of effects, that will be applied to the EIA of the topics identified in **Chapters 7 – 14**.

6.2 Temporal Scope

Environmental Baseline

6.2.1 As a general principle, environmental effects will be assessed by comparing the predicted state of the environment without the Proposed Development, with the state of the environment with the Proposed Development, for a particular year.

6.2.2 The EIA Regulations require an outline of the likely evolution of the Site environment without implementation of the Proposed Development as far as changes from the baseline scenario can be predicted. This baseline evolution will include future trends such as air quality and traffic growth.

6.2.3 The EIA will take into account approved developments that are likely to come forward during the construction of the Proposed Development and, where appropriate, these will be factored into the definition of the baseline or identified as receptors at a relevant point in time. Further details on the approach to approved developments are provided in **Section 6.4**.

Duration of Effects

6.2.4 Environmental effects will be classified as either permanent or temporary, as appropriate. Permanent changes are those which are irreversible or will last for the foreseeable future.

6.2.5 The duration of temporary environmental effects will be defined as short, medium or long term based on the likely durations of the construction and operational phases of the development. These definitions will be considered within the assessment of the likely significant effects and will be set out in the ES.

6.2.6 Where environmental effects will be infrequent or intermittent (such as effects related to activities that will not be continuous during construction) this will be noted in the ES; and the frequency of these activities will be considered in the assessment.

Phases of the Scheme

6.2.7 There are two discrete phases of the Proposed Development which will be considered in relation to the likely significant effects: The construction phase and the operation phase.

Construction

6.2.8 Certain environmental effects will only occur during the construction phase of the Proposed Development and will cease once construction activities have ceased. These will typically be the temporary effects of the scheme and will be described as “short-term” or “medium-term”, as appropriate, using the definitions determined to be appropriate and set out in the ES. Examples include but are not limited to:

- Creation of dust;
- Risk of pollution during construction; and
- Changes to views during construction.

Operation

6.2.9 Environmental effects that occur during the operation of the Proposed Development will typically be permanent or “long-term”. Examples of permanent effects which might occur during the operation of the scheme include but are not limited to:

- Changes to people’s key views;
- Changes to the setting of archaeology assets; and
- Introduction of new sensitive receptors.

6.3 Spatial Scope

6.3.1 The spatial extent of each of the technical assessments will vary from one to another in accordance with the relevant policy and guidance for the assessment of that topic; in some

instances, the environmental effects will extend no further than the boundary of the Site and in other cases the assessment will extend to a buffer beyond the site boundary. The study area for each technical assessment will be identified and described as appropriate in each of the topic chapters of the ES.

6.4 Assessment of Effects

Types of Effects

6.4.1 In assessing the significance of effects identified during the EIA, account will be taken as appropriate as to whether effects are:

- Direct Effects – effects that are caused by activities which are an integral part of the Proposed Development (e.g. change in uses);
- Indirect Effects – effects arising indirectly from the construction or use of a development (e.g. supply chain effects in construction stage, regeneration benefits attributed to the scheme);
- Secondary Effects – are 'knock-on'/one-removed effects arising in consequence of indirect effects (e.g. the decision of firms to locate in a particular area following increased custom from new residents);
- Cumulative Effects – many effects that singly are not significant, but when assessed together may be significant and also the cumulative effects of The Proposed Development and other approved local developments;
- Short-Term and Medium-Term – Environmental effects that occur during the of a project will typically be Short or Medium Term;
- Long-Term – Environmental effects that occur during the operation of a project will typically be Long Term;
- Temporary Effects – Environmental effects that occur during the construction of a project will typically be temporary;
- Permanent Effects – Environmental effects that occur during the operation of a project will typically be permanent;
- Positive Effects – effects that have a positive influence on the environment; and
- Negative Effects – effects that have a negative influence on the environment.

6.4.2 For clarity within the assessment, ‘impact’ will be used in relation to the outcome of the project (e.g., the generation of emissions to air), while the ‘effect’ will be the consequent implication in environmental terms (continuing the above example, e.g. the reduction in local air quality).

Residual Effects

6.4.3 The incorporation of mitigation measures, primarily as part of the scheme design and construction phase, will be reported where appropriate and likely significant residual effects that remain will be described and assessed according to the significance criteria set out in **Table 6.2**.

6.4.4 As noted above, the EIA Regulations require that the ES describes likely significant effects of the Proposed Development. However, there is no applicable definition of significance and interpretations differ. In accordance with the European Commission’s Guidance on Scoping (revised 2017), the EIA will study those effects that will influence decision-making or those

where there is uncertainty about their magnitude. This approach is consistent with best practice for EIA in the UK.

6.4.5 The significance of an effect is typically the product of two factors, the sensitivity of the environmental resource affected and the magnitude of the impact, while consideration may also need to be given to the likelihood of an effect occurring.

6.4.6 This approach to assessing and assigning significance to an environmental effect will rely upon such factors as legislative requirements, guidelines, standards and codes of practice, consideration of the EIA Regulations, the advice and views of statutory consultees and other interested parties and expert judgement. The following questions are relevant in evaluating the significance of likely environmental effects:

- Which risk groups are affected and in what way?
- Is the effect reversible or irreversible?
- Does the effect occur over the short, medium or long term?
- Is the effect permanent or temporary?
- Does the effect increase or decrease with time?
- Is the effect of local, regional, national, or international importance?
- Is it a positive, neutral, or adverse effect?
- Are health standards or environmental objectives threatened?
- Are mitigating measures available and is it reasonable to require these?

6.4.7 Specific significance criteria will be prepared for each specialist topic as appropriate, based on the above and the generic criteria set out in **Table 6.2** and adapted to accord with topic-specific guidance.

Table 6.2: Significance criteria

Significance Level	Criteria
Substantial	Only adverse effects are assigned this level of significance as they represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites and features of national or regional importance. A change at a county scale site or feature may also enter this category.
Major	These effects are likely to be important considerations at a district scale but, if adverse, are potential concerns to the project and may become key factors in the decision-making process.
Moderate	These effects, if adverse, while important at a local scale, are not likely to be key decision-making issues. Nevertheless, the cumulative effect of such issues may lead to an increase in the overall effects on a particular area or on a particular resource.
Minor	These effects may be raised as local issues but are unlikely to be of importance in the decision-making process. Nevertheless, they are of relevance in enhancing the subsequent design of the project and consideration of mitigation or compensation measures.
Negligible	Either no effect or effect which is beneath the level of perception, within normal bounds of variation or within the margin of forecasting error. Such effects should not be considered by the decision-maker.

6.4.8 Effects that are described as 'substantial', 'major' or 'moderate' are determined to be *significant*; and effects that are described as 'minor' or 'negligible' are determined to be *not significant* in the context of the EIA Regulations.

Cumulative Effects

6.4.9 The EIA Regulations require the consideration of the potential impact of inter-relationships and cumulative effects of *"existing and / or approved development"* with the Proposed Development. To address this requirement, the EIA will consider as appropriate:

- The likely significant cumulative effects of the Proposed Development and other major local existing and / or approved developments; and
- The potential for impact interactions leading to an aggregated environmental effect on a receptor being greater than each of the individual effects that have been identified (e.g. local people being affected by noise, dust and increased traffic levels during the construction of the development, where those impacts are greater combined than individually).

6.4.10 A review of approved developments within the vicinity of the Proposed Development has been undertaken and consideration has been given to those which have the potential to result in significant cumulative effects. A list of committed development proposed for inclusion within the EIA is provided within **Appendix C**.

6.4.11 Approved development was screened for inclusion in the EIA using professional judgement against a range of criteria including nature, scale and geographic location. Through the EIA process, consideration will be given to which of the committed developments identified have the potential to lead to significant cumulative effects with the Proposed Development, in the context of each technical discipline. Potential cumulative effects which are considered likely to arise will be included within the EIA and documented in each topic specific chapter.

6.4.12 Agreement is sought from RBC on the approved developments which should be assessed in the cumulative assessments in the ES. It would be appreciated if RBC could confirm this position in issuing its formal Scoping Opinion. If the authority is aware of any other approved developments that it considers will need to be assessed in terms of potential cumulative effects, it would be appreciated if these could be identified as part of the Scoping Opinion.

6.4.13 It should be noted that a separate list of committed developments may be agreed with Warwickshire County Council (WCC) for the purposes of Transport Assessment (TA), and for consistency in the assessment of transport related effects, the assessment of air quality and noise effects associated with road traffic will be consistent with the scenarios within in the TA.

Impact Interactions

6.4.14 A dedicated chapter of the ES will assess the potential impact interactions, i.e., receptors being affected by more than one environmental effect and therefore potentially being subject to a more significant combined effect than the individual effects reported in each of the topic chapters.

6.5 Uncertainty and Difficulties Undertaking the Assessment

6.5.1 The prediction of future effects inevitably involves a degree of uncertainty. Where necessary, the ES will describe the principal factors giving rise to uncertainty in the prediction of environmental effects and the degree of the uncertainty.

6.5.2 Confidence in predictions will be engendered by employing accepted assessment methodologies, e.g., Guidance for Ecological Impact Assessment by the Institute of Ecology and Environmental Management. Uncertainty inherent within the prediction will be described.

6.5.3 Uncertainty also applies to the success or otherwise of measures to mitigate negative environmental effects. Where the success of a mitigation measure is uncertain, the extent of the uncertainty will be identified in the ES.

6.5.4 All works undertaken during the EIA will comply with any COVID-19 requirements in place at the time. This may have implications, for example, for site surveys and site visits, meetings with statutory consultees and third parties, and data collection and provision. However, every effort will be made to ensure the robustness of the EIA and the information provided within the ES, with any uncertainties and difficulties highlighted and the measures taken to address them stated.

6.5.5 The ES will identify, in accordance with Schedule 4 of the EIA Regulations, any difficulties that have been encountered in undertaking the assessment.

7 Transport and Traffic

7.1 Introduction

7.1.1 The Transport and Traffic ES chapter will assess the likely significant effects of the traffic generated from the Proposed Development on the local road network and sensitive receptors in the vicinity of the Site.

7.1.2 The Proposed Development has the potential to increase the number of trips on the local road network during both the construction and operational phases of development, most notably during the morning (8am-9am) and evening (5pm-6pm) peak hours. Where the impacts of development traffic on sensitive receptors is found to be significant, mitigation measures to prevent, reduce or offset any significant adverse traffic impacts will be proposed.

7.1.3 The Transport and Traffic chapter will also take into account and build on the findings of the accompanying Transport Assessment which provides the detailed assessment of the expected transport impacts and the traffic management strategy, in addition to any necessary mitigation measures.

7.2 Baseline

7.2.1 The Proposed Development is located approximately 80m south of the B4642 Coventry Road, a single lane two-way carriageway road subject to a 40mph speed limit; however, there is currently no direct highway access from the site to the B4642 Coventry Road. The Site will be accessed via a temporary construction route from the south and then via the Potford Dam Link Road (which as noted earlier forms part of the South West Rugby Spine Road).

7.2.2 The A45, part of the Strategic Road Network (SRN) managed by National Highways, provides a connection between Daventry and Birmingham and is subject to a 60mph speed limit. To the east of the A45/ A4071 junction, the A45 meets the M45 and B4429 at a three-arm roundabout. The M45 provides a connection to the M1 to the east where the M1 provides further connectivity to key strategic locations in the south (access to the M1 Northbound is not possible from Junction 17).

7.2.3 To the north-east of the Site, the B4642 Coventry Road provides access towards Rugby town centre and to Dunchurch via Cawston Lane which forms a north-south link through the South West Rugby Allocation. A Section 278 application is currently with WCC and National Highways to make improvements to this junction and provide the primary access to the employment site.

7.2.4 A footway is present along the northern edge of the B4642 Coventry Road, providing a continuous pedestrian connection between the Proposed Development and Cawston to the north east. A public footpath (R168b) crosses the Site from Coventry Road to the south-west corner, providing access south towards a bridleway (R168). Another public footpath is located along the eastern Site boundary, providing access towards Dunchurch.

7.2.5 There are a number of local and national cycle routes in the Rugby area. The traffic free route running along the A4071 to the west of the Site joins up to National Cycle Network (NCN) Route 53 which runs from Peterborough then west through Coventry and Birmingham. NCN Route 41 runs along Windmill Lane/ Northampton Lane to the south-east of the Site, providing a connection to Rugby Railway Station in the north and Royal Leamington Spa, Warwick and Stratford-upon-Avon in the south. Both NCN routes are still undergoing development; however, they demonstrate the potential accessibility and sustainability of the Site. The western boundary of the Site is formed by a disused railway, which Sustrans has aspirations to turn into a leisure route for cyclists. This will link the Site to the existing routes to the north.

7.2.6 Further Baseline details will be provided in the Transport Assessment and ES chapter.

7.3 Consultation

7.3.1 The scope and extent of the Transport Assessment (TA) upon which the Transport and Traffic ES chapter will be based will be agreed with the local highway authority (Warwickshire County Council, WCC). National Highways will also be a key consultee to this process.

7.4 Potential Effects

7.4.1 The Guidelines for the Environmental Assessment of Road Traffic, Institute of Environmental Assessment, 1993 (referred to as the 'IEMA Guidelines') list the following environmental impacts to be assessed in relation to traffic:

1. Air Pollution
2. Dust and Dirt
3. Ecological Effects
4. Heritage and Conservation Areas
5. Noise
6. Vibration
7. Visual Effects
8. Severance
9. Driver Delay
10. Pedestrian Delay
11. Pedestrian Amenity
12. Fear and Intimidation
13. Accidents and Safety, and
14. Hazardous Loads.

7.4.2 The first seven impacts listed above will be addressed elsewhere within the ES. The last seven impacts (Severance to Hazardous Loads) will be dealt with in the Transport and Traffic chapter following the broad principles set out in the IEMA Guidelines of how to assess the magnitude of effect for each category.

7.4.3 For the purposes of construction phase impacts, the number of construction vehicles will be estimated for the construction of the development. If the level of construction traffic is less than or equal to the final development traffic, no further assessment is considered necessary as the assessment of operational effects will identify the worst-case effects of the development.

7.5 Methodology

7.5.1 This chapter of the ES will be based on a Transport Assessment (TA) and will follow a scope to be agreed with WCC, including committed developments to be considered and modelling to be undertaken. It is proposed that internal roads will be designed in accordance with WCC design guidance and to adoptable standards.

7.5.2 The assessment will consider the Proposed Development both in isolation and within the context of the Local Plan and will also consider the provision of public transport, pedestrian and cycling facilities and how the site will connect with the wider network, including the proposed employment site to the south, forming part of the remainder of the South West Rugby Allocation in the adopted Local Plan.

7.5.3 The assessment of individual environmental elements will be carried out drawing from the '*Guidelines for the Environmental Assessment of Road Traffic'* (1993) published by the Institute of Environmental Assessment (IEA), and where appropriate, guidance contained within *Design Manual for Roads and Bridges*. These documents are the recommended tools for the appraisal of environmental impacts of transport and travel and they identify appropriate standards for assessment.

7.6 References

The Institute of Environmental Assessment. Guidelines for the Environmental Assessment of Road Traffic. Published 1993.

8 Noise and Vibration

8.1 Introduction

8.1.1 This chapter sets out the technical details of the assessment which will be reported in the Noise and Vibration chapter of the ES. To assess the likely significant effects of the Proposed Development, the assessment will consider the potential impacts of both existing and proposed noise and vibration sources on existing and proposed noise and vibration sensitive receptors in the vicinity of the Site, during the construction and operational phases.

8.2 Baseline

8.2.1 The main environmental noise sources likely to affect the Site are distant traffic noise from the A45/M45 and vehicles on the surrounding road network, namely the A4071 and the B4642 Coventry Road. New noise sources being introduced to the local area, from adjacent consented but not yet built development, will be considered as part of the future baseline where relevant.

8.2.2 The closest existing noise sensitive receptors to the Proposed Development are likely to include residential dwellings located to the immediate south of the Site and properties on the A4071, B4642 Coventry Road, A45 Coventry Road/London Road and the B4429 Coventry Road.

8.2.3 Environmental sound surveys will be undertaken at representative locations to quantify the environmental sound climate at the Site and at nearby existing and future receptors.

8.3 Consultation

8.3.1 Consultation will be undertaken with the Environmental Health Department at RBC to discuss and agree the approach to the environmental sound survey and the scope of the assessment and methodology.

8.4 Potential Effects

Insignificant Effects

8.4.1 Potential significant effects associated with vibration during the operational phase are principally concerned with operational traffic and are not considered to be significant. Ground borne vibration from road traffic movements is typically found to be in the 8-20Hz range and is produced by the interaction between rolling wheels and the road surface. Research undertaken by the Transport Research Laboratory (TRL) in report RR246 'Traffic Induced Vibration in Buildings' (TRL, 1990) found no evidence that traffic induced ground borne vibration is a source of significant damage to buildings. The report concluded that:

'*Peak particle velocities in the structure of buildings close to heavily trafficked roads rarely exceed 2 mm/s and typically are below 1mm/s. Normal use of a building such as closing doors, walking on suspended wooden floors and operating domestic appliances can generate similar levels of vibration to those from road traffic*'.

8.4.2 A note to Paragraph 1.4 of Design Manual for Roads and Bridges (DMRB) LA111 Noise and Vibration (Highways England, 2019).states that:

'*Operational vibration is scoped out of the assessment methodology as a maintained road surface will be free of irregularities as part of project design and under general maintenance, so operational vibration will not have the potential to lead to significant adverse effects*.'

8.4.3 For this reason, traffic induced vibration during operation is not considered to have the potential to give rise to significant adverse effects and it is proposed to scope this out of the noise and vibration assessment.

Significant effects

8.4.4 Potential significant effects associated with the construction of the Proposed Development which have the potential to affect existing and proposed receptors are likely to be associated with:

- Construction plant noise;
- Construction vibration; and
- Off-site construction road traffic noise.

8.4.5 Potential significant effects associated with the operation of the Proposed Development which have the potential to affect existing and proposed receptors are likely to be:

- Operational transportation noise affecting existing and proposed receptors in the vicinity of the Site;
- Operational transportation noise affecting proposed residential dwellings at the Site; and
- Industrial/commercial noise affecting proposed residential dwellings at the Site, primarily associated with the consented but not yet built employment development to the south.

8.5 Methodology

8.5.1 The assessment will have regard to the relevant sections of the following policy and guidance documents:

- National Planning Policy Framework (NPPF);
- Planning Practice Guidance (PPG);
- Local Planning Policy and Supplementary Planning Guidance (where relevant); and
- Noise Policy Statement for England (NPSE).

8.5.2 In accordance with national policy, the Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL) for each source of noise and vibration will be defined based on appropriate guidance and standards. The LOAEL and SOAEL will form the basis of the assessment of significance of noise and vibration effects.

8.5.3 Based on the IEMA Guidelines for Environmental Noise Assessment and other relevant guidance, the relationship between the noise impact, adverse effect level, noise effect, and significance criteria to be used un the assessment is described in **Table 8.1.**

Table 8.1: Relationship between Noise and Vibration Impact, Effect and Significance

Magnitude (Nature of Impact)	Response	Description of Effect (on a specific receptor)	Significance
Major Beneficial	Very Noticeable Improvement	Causes a material change in behaviour and/or attitude, e.g. individuals begin to engage in activities previously avoided due to preceding environmental noise conditions. Quality of life enhanced due to change in character of the area.	More likely to be Significant
Moderate Beneficial	Noticeable Improvement	Improved noise climate resulting in small changes in behaviour and/or attitude, e.g. turning down volume of television; speaking more quietly; opening windows. Affects the character of the areas such that there is a perceived change in the quality of life.	
Minor Beneficial	Just Noticeable Improvement	Noise impact can be heard but does not result in any change in behaviour or attitude. Can slightly affect the character of the area but not such that there is a perceived change in the quality of life.	Less likely to be Significant
Negligible	No Response	N/A = No discernible effect on the receptor	Not Significant
Minor Adverse	Present and Not Intrusive	Noise impact can be heard, but does not cause any change in behaviour or attitude, e.g. turning up the volume of television; speaking more loudly; closing windows. Can slightly affect the character of the area but not such that there is a perceived change in the quality of life	Less likely to be Significant
Lowest Observed Adverse Effect Level (LOAEL)			
Moderate Adverse	Present and Intrusive	Noise impact can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; closing windows. Potential for non-awakening sleep disturbance. Affects the character of the area such that there is a perceived change in the quality of life.	
Significant Observed Adverse Effect Level (SOAEL)			
Major Adverse	Present and Disruptive	Causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion. Potential for sleep disturbance resulting in difficulty getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in character of the area.	More likely to be Significant
Substantial Adverse	Very Disruptive and Harmful	Significant changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Significant

Acoustic Model

8.5.4 A computer acoustic model of the Site and surrounding areas will be prepared using modelling software SoundPLAN version 8.2. The computer acoustic model will be calibrated based on the results of the environmental sound survey.

8.5.5 The assessment will consider a future baseline which includes adjacent consented and allocated development (the ‘Do Minimum’ scenario). The assessment would consider both this scenario and one with the Proposed Development (the ‘Do Something’ scenario), which will include the delivery of a section of the proposed Potford Dam Link Road.

Construction Noise

8.5.6 The assessment of construction noise and subsequent determination of significant effects will be undertaken based on guidance outlined in BS5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites (British Standards Institution, 2014) and the DMRB.

8.5.7 As exact construction methodologies are unlikely to be defined until the construction contractor is appointed, which is likely to be after the submission of the outline planning application, an outline construction programme will be developed based on knowledge and experience of other similar developments. The typical make-up of construction plant and equipment will be ascertained in the same way.

8.5.8 The quantification of impacts will be undertaken by comparison with relevant guidance and standards such as BS5228, or local legislative requirements. The assessment will outline suitable measures for the mitigation of construction impacts.

Construction Vibration

8.5.9 The assessment of construction vibration and subsequent determination of significant effects will be undertaken based on guidance outlined in BS5228-2:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites (British Standards Institution, 2014).

Construction Road Traffic Noise

8.5.10 The assessment of construction road traffic noise and determination of subsequent significant effects would be undertaken based on guidance outlined in the DMRB.

Operational Transportation Noise Affecting Existing Receptors

8.5.11 Operational transportation noise will be calculated using the procedure outlined in the Department of Transport and Welsh Offices' 'The Calculation of Road Traffic Noise' (CRTN) (Department for Transport Welsh Office, 1988). The assessment would be based on the likely change in sound levels between the 'with development (Do Something)' and 'without development (Do Minimum)' scenarios, with the determination of significance effects based on guidance outlined in the DMRB. Traffic impacts would be assessed on road links that are within a 1 km distance of the site.

8.5.12 We would liaise with the project's transport consultants to determine the likely route of vehicles and to determine the appropriate road links for assessment. Baseline and future traffic flows for the road network will be defined in consultation with officers in RBC and WCC and suitable assessment scenario will be agreed. This data will then be used to inform the assessment of operational transportation noise.

Operational Transportation Noise Affecting Proposed Residential Dwellings

8.5.13 Operational transportation noise will be calculated using noise prediction procedures as detailed in CRTN and TRL's Converting the UK Traffic Noise Index $L_{A10,18h}$ to EU Noise Indices for Noise Mapping' (TRL, 2002). Using the results of the environmental sound survey and acoustic modelling, on site sound levels will be predicted for the 'Do Something' assessment scenario.

8.5.14 An assessment of the suitability of the Site for residential use will be undertaken. The assessment of the magnitude and effect of noise on the Proposed Development will reference the following industry standards:

- BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings;

- World Health Organisation Guidelines for Community Noise; and
- Professional Practice Guidance on Planning and Noise (ProPG).

Industrial/Commercial

8.5.15 The assessment of industrial/commercial noise associated with the neighbouring employment uses potentially affecting the Proposed Development would be undertaken in accordance with BS4142:2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound (British Standards Institution, 2014).

8.6 References

Transport Research Laboratory (1990) “Traffic Induced Vibrations in Buildings”. Berkshire. TRL

Department for Communities and Local Government (2012); National Planning Policy Framework. London: HMSO.

Department for Communities and Local Government (2016); National Planning Practice Guidance. https://www.gov.uk/government/collections/planning-practice-guidance [accessed: 28/01/2022].

Department for Environment, Food and Rural Affairs (2010); Noise Policy Statement for England. London: HMSO.

British Standards Institution (2014) “BS 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites Part 1 Noise”. BSI.

British Standards Institution (2014) “BS 5228-2:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites Part 2 Vibration”. BSI.

Highways England (2020) “Design Manual for Roads and Bridges LA 111 Noise and Vibration”. Highways England.

Department of Transport Welsh Office (1988); Calculation of Road Traffic Noise. London: HMSO.

British Standards Institution (2014); BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings. London: BSI.

British Standards Institution (2019) “BS 4142:2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound”. BSI.

ANC, IOA and CIEH (2017) ‘Professional Practice Guidance on Planning and Noise’. Ingenious Design.

Transport Research Laboratory (2002) “Converting the UK Traffic Noise Index LA10,18h to EU Noise Indices for Noise Mapping”. TRL

British Standards Institution (2019) “BS 4142:2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound”. BSI.

9 Air Quality

9.1 Introduction

9.1.1 This section has been prepared by Stantec UK and sets out the technical details of the air quality assessment which will be reported in the ES.

9.1.2 Air quality has been scoped into the ES due to the potential for significant effects as a result of emissions to air primarily associated with emissions from traffic during the operational stage. The proposed methodologies and scope of the assessment are provided in the following sections.

9.2 Baseline

9.2.1 The Site is located within the administrative boundary of Rugby Borough Council (RBC). RBC has investigated air quality within its administrative boundary as part of its responsibilities under the Local Air Quality Management (LAQM) regime and in 2004 declared an Air Quality Management Area (AQMA) for exceedances of the annual mean nitrogen dioxide (NO_2) National Air Quality Objective (NAQO). The AQMA covers the whole urban area of Rugby bounded by the southern boundary with Daventry District Council, A5, M6, minor roads to the west of Long Lawford, A45 and M45 and encompasses the Site.

9.2.2 Existing local air quality, the likely future air quality in the absence of the new development, and the likely future air quality if the development goes ahead will be defined using DEFRA predictions of future changes in pollutant emissions and concentrations.

9.3 Consultation

9.3.1 Consultation will be undertaken with the Air Quality Officer of RBC regarding the methodology of the assessment and to obtain local air quality monitoring data.

9.4 Potential Effects

Insignificant Effects

9.4.1 The Institute of Air Quality Management (IAQM) guidance (IAQM, 2014) recommends that no judgement of the significance of effects of construction dust without mitigation is made, as mitigation is assumed to be secured by planning conditions, legal requirements or required by regulations. Following the implementation of appropriate mitigation measures, construction dust is unlikely to be considered significant and will not be considered further within the EIA. Mitigation for construction dust will be secured through a Construction Environmental Management Plan (CEMP) which will be provided by way of a suitably worded planning condition.

9.4.2 An assessment of the risk of potential construction dust impacts will, however, be undertaken with reference to relevant guidance and provided as an appendix to the ES.

9.4.3 Taking into account the location of ecological sites and likely routing of traffic movements from the Proposed development it is considered that the overall effect of the Proposed development on ecology via indirect air quality impacts will be ‘not significant’. Therefore, the potential indirect effects of air quality on ecology will not be considered within the Air Quality ES Chapter.

Significant effects

Construction

9.4.4 Dust generated by the Proposed Development during construction activities and as a result of track out by construction traffic has the potential to impact on amenity and air quality as a result of dust soiling and increased concentrations of PM_{10} respectively. There is the potential for sensitive existing receptors (e.g., residences) located within up to 350 m from the Site boundary and 50 m from the route(s) used by demolition and construction vehicles to experience impacts.

9.4.5 There is the potential for impacts on air quality as a result of emissions of NO_2, PM_{10} and $PM_{2.5}$ from construction traffic associated with the Proposed Development. These impacts have the potential to occur at sensitive existing receptors (e.g., residences) that are located in close proximity to roads along which the construction traffic will travel.

Operation

9.4.6 Given the location of the Site, there is the potential for impacts on the proposed residential receptors during operation from the existing road network. The impact of road traffic emission sources, in particular the adjacent road network, on air quality at proposed receptor locations will be assessed.

9.4.7 There is also the potential for impacts on air quality from traffic associated with the Proposed development itself during operation. These impacts have the potential to occur at sensitive receptors (e.g. existing and consented but not yet built residences in the vicinity of the Site, schools and any potential proposed onsite sensitive land uses) that are located in close proximity to roads along which the operational traffic generated by the Proposed Development will travel.

9.4.8 The principal air pollutants of concern in relation to human receptors will be NO_2, PM_{10} and $PM_{2.5}$. Professional experience indicates that any impacts associated with other air pollutants will be negligible.

9.5 Methodology

Construction

9.5.1 The assessment of construction dust will determine the risk of impacts from demolition (if required), earthworks and construction activities and as a result of trackout based on the magnitude of activities and the overall sensitivity of the surrounding area in accordance with IAQM guidance (IAQM, 2014).

9.5.2 A package of appropriate mitigation measures will be recommended (if required) based on the outcome of the assessment to ensure that effects will not be significant.

9.5.3 It is expected that the Proposed Development will result in an increase in traffic flows on the surrounding road network during the construction phases, however, traffic flows are currently unknown. If the traffic generation for the Proposed Development exceeds criteria provided within the Environmental Protection UK (EPUK) / IAQM guidance, (EPUK / IAQM, 2017), a detailed air quality assessment will be undertaken in accordance with the same methodology used for assessment of operational impacts which is defined in the following section.

Operation

9.5.4 Information regarding baseline air quality will be obtained by collating the results of monitoring carried out by RBC and referring to maps of AQMAs as well as exceedances of the EU Limit Values from DEFRA NO_2 and PM projections data (DEFRA, 2020a). Background

concentrations will be defined based on the national pollution maps published by DEFRA (DEFRA, 2020b).

9.5.5 For the assessment of road traffic emissions, the Study Area (based on the Environmental Protection UK (EPUK) / IAQM guidance) will focus on receptors within 250 m of any roads where development traffic flows are predicted to exceed the EPUK / IAQM screening criteria of an increase of 500 total Annual Average Daily Traffic (AADT) or 100 Heavy Duty Vehicle (HDV) AADT (or an increase of 100 total AADT or 25 HDV AADT inside of an AQMA).

9.5.6 Air quality will be assessed at a range of representative worst-case human health receptor locations; the model will then be used to predict concentrations within the Site to assess the suitability of the Site for the proposed end-uses, and also at off-site receptors to assess the impacts of additional traffic associated with the Proposed Development. For traffic-related impacts these will be existing sensitive receptors (schools, residential properties, care homes, hospitals and nurseries) that are closest to busy roads, in particular those close to junctions, where traffic emissions are greatest.

9.5.7 Dunchurch is a particular concern in terms of air quality, due to relatively high measured concentrations of nitrogen dioxide in past years. The effect of development traffic within the Dunchurch area will be assessed in detail. Whilst suitable assessment scenarios for the TA will be defined in consultation with officers in RBC and WCC, in line with the likely scenarios presented in the TA, this will exclude the proposed Homestead Link.

9.5.8 Concentrations of NO_2, PM_{10} and $PM_{2.5}$ at identified receptors will be modelled using the ADMS-Roads dispersion model (v5). To create a robust model, verification will be undertaken to compare the results of modelling against those from nearby monitoring undertaken by RBC. Emissions associated with the traffic will be calculated using the most recent version of the Emissions Factor Toolkit (EFT), currently v11.1. Traffic data will be entered into the EFT to provide emissions rates for each of the road links modelled.

9.5.9 There has been an acknowledged disparity between national road transport emissions projections and measured annual mean concentrations of nitrogen oxides (NOx) and NO_2 for many years. However, recent monitoring has shown that reductions in concentrations are now being measured in many parts of the country (Air Quality Consultants Ltd., 2020a) and current toolkits used to quantify pollutant emissions are representative (Air Quality Consultants Ltd., 2020b). Whilst there is still some uncertainty regarding the rate at which Nox emissions will reduce in the future, the existing toolkit incorporates very limited uptake of Electric Vehicles (Evs) and therefore is likely to over predict Nox emissions in future years and its application is therefore considered sufficiently precautionary.

9.5.10 Data from the Transport and Traffic ES Chapter in regards to baseline and future traffic flows for the road network as well as suitable assessment scenarios will be used to inform the air quality assessment. The existing baseline year, used for air quality model verification, will be chosen to reflect the most recent year for which sufficient air quality monitoring data are expected to be available. Due to temporary changes in travel patterns in 2020, it is unlikely that data from 2020 will be suitable and therefore 2019 is expected to be the most appropriate year for model verification. This approach is consistent with that taken on other similar applications submitted to RBC. We request clarity from RBC on the acceptability of this approach in this case, which will be discussed directly with the relevant officer in RBC.

9.5.11 The assessment of traffic emissions will assess the future baseline which includes traffic associated with identified cumulative schemes and predicted concentrations will be compared to the relevant NAQOs to identify any exceedances and impacts will be determined using the criteria outlined in the EPUK/IAQM guidance. The significance of identified effects will be determined making reference to criteria defined by the IAQM and EPUK land-use planning guidance.

9.5.12 Appropriate mitigation for the operational phase will be identified in accordance with the principles of the RBC AQ SPD (RBC, 2021) and requirements of RBC Local Plan Policy HS5.

9.6 References

Air Quality Consultants Ltd. (2020a). 'Nitrogen Oxides Trends in the UK 2013 to 2019'

Air Quality Consultants Ltd. (2020b). 'Comparison of EFT v10 with EFT v9'Bristol City Council (2020). '2020 Air Quality Annual Status Report'.

DEFRA (2021). 'Local Air Quality Management Technical Guidance (LAQM TG.16)'.

Department of the Environment, Food and Rural Affairs (DEFRA) (2020a) '2020 NO_2 and PM Projections Data (2018 Reference Year)'. Available at: https://uk-air.defra.gov.uk/library/no2ten/2020-no2-pm-projections-from-2018-data

Department of the Environment, Food and Rural Affairs (DEFRA) (2020b). '2018 Based Background Maps'. Available at: https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018

Environmental Protection UK and the Institute of Air Quality Management (EPUK / IAQM) (2017). 'Land-use Planning & Development Control: Planning for Air Quality'. V1.2. The Institute for Air Quality Management, London

Institute of Air Quality Management (2014). 'Assessment of Dust from Demolition and Construction', IAQM, London

Rugby Borough Council (RBC) (2021). Air Quality Supplementary Planning Document (SPD)

10 Ground Conditions

10.1 Introduction

10.1.1 The Ground Conditions chapter will assess the likely impacts associated with the Proposed Development in respect of geodiversity (geology and geomorphology), land stability and land contamination (collectively referred to as 'ground conditions').

10.1.2 The Ground Conditions chapter will be informed by a Phase 1 Contaminated Land and Preliminary Ground Stability Desk Study Report.

10.2 Baseline

10.2.1 The Site currently comprises undeveloped agricultural land that slopes downhill to the north. A single residential property is located in the southern portion of the Site, outside of the outline planning application boundary.

10.2.2 The site is underlain by bedrock strata of the Charmouth Mudstone Formation which is overlain by Superficial strata of the Wolston Formation and by Alluvium.

10.2.3 The Superficial strata are classified as Secondary A Aquifers. The Site is bordered by a watercourse to the east and an agricultural reservoir (Potford Dam) to the north east.

10.3 Consultation

10.3.1 A direct enquiry for environmental information will be sent to the Environmental Protection Department of RBC. The chapter will also take note of any relevant consultation responses within RBC's EIA Scoping Opinion.

10.4 Potential Effects

Insignificant Effects

10.4.1 There are no sensitive receptors with respect to geodiversity within 1km of the Site and therefore effects on geodiversity will likely be insignificant and can be scoped out of the EIA.

Significant effects

10.4.2 Potential significant effects could occur as a result of unforeseen land contamination or ground instability. Sensitive receptors with respect to land contamination are expected to be:

- Humans
  - Current farmworkers (directly), adjacent residential properties (indirectly) and occasional users of the on-site public footpaths (directly);
  - Future occupiers of the residential development (directly) and future adjacent residential properties (indirectly);
- Buildings
  - Existing and future off site properties (indirectly);
  - Future on site residential properties (directly);
- Secondary aquifers underlying the site (directly); and
- On site watercourses (directly and indirectly).

10.4.3 The impacts on these receptors could be pollution of waters or ill health to humans.

10.4.4 Sensitive receptors with respect to ground instability are expected to be:

- Future on site buildings (directly) and off site buildings (indirectly);
- Future and current on site and off site infrastructure (directly and indirectly), including roads, drainage, utilities; and
- Humans (indirectly as users/ occupiers of buildings and infrastructure).

10.4.5 The impacts on these receptors could be damage to buildings and infrastructure and injury to humans as a result of ground movements and damage to buildings.

10.5 Methodology

Relevant Guidance

10.5.1 The baseline assessment for 'ground conditions' is based upon:

- Review of desk based information;
- A reconnaissance walkover of the Site and adjoining areas; and
- Reporting and risk assessment.

10.5.2 With regard to protection of geodiversity and ground instability, the approach and methodologies used within this assessment are in accordance with guidance contained within the NPPF. With regard to land contamination the approach and methodologies used within this assessment are in accordance with:

- The phasing and guidance contained within the updated Environment Agency guidance on Land contamination and risk management https://www.gov.uk/guidance/land-contamination-how-to-manage-the-risks;
- BS:10175:2011+A2 2017 Investigation of potentially contaminated sites – Code of practice; and
- The National House Building Council's (NHBC) Technical Standards (2019), Part 4 – Chapter 4.1 Land quality – managing ground conditions.

10.5.3 In addition to the guidance described above there are several items of legislation and/or guidance that aim to deal with the prevention of land and groundwater contamination and others which aim to address and remediate contamination once it has occurred. Examples of indirectly relevant regulations are listed here for reference but are not discussed in detail in this chapter:

- Water Resources Act 1991 (as partly amended by the Water Act 2003) and associated Anti-pollution Works Regulations 1999;
- Control of Pollution (Oil Storage) (England) Regulations 2001;
- Water Environment (Water Framework Directive) (England and Wales) Regulations 2003);
- Environmental Damage (Prevention and Remediation) Regulations 2009; and
- The Environmental Permitting (England and Wales) Regulations 2010.

10.5.4 There is also other UK best practice guidance documentation that is relevant to ground conditions (geology and geo-hazards, including land contamination and land stability). Some of these are listed below (the list is indicative only, i.e. not exhaustive):

- BS5930:2015. Code of practice for ground investigation;
- Department of the Environment (1995). Contaminated Land Report 6. Prioritisation and categorisation procedure for sites that may be contaminated; and
- Environment Agency (2008). An ecological risk assessment framework for contaminants in soil. Science Report SC070009/SC1.

10.5.5 Other key guidance documents and standards relating to 'ground conditions' have also been considered and details are presented in the relevant sections of this chapter. Environmental impacts relating to the ground conditions have been assessed in accordance with the guidance and methodology set out in:

- Department for Communities and Local Government Consultation Paper 'Environmental Impact Assessment: a guide to good practice and procedures';
- Contaminated land risk assessment – a guide to good practice, CIRIA Report C552; and
- Chartered Institute of Environmental Health, 2000. Environmental Impact Assessment in the UK.

Baseline Data

10.5.6 The Ground Conditions chapter will be informed by a Phase 1 Contaminated Land and Preliminary Ground Stability Desk Study Report. The desk study report will be provided as a technical appendix to the ES and will include:

- Acquisition and review of commercially obtained environmental database information from the Landmark Information Group (through the Envirocheck® modular report product); and
- A direct enquiry for environmental information to the Environmental Protection Department of Rugby Borough Council.

10.5.7 The documentary records and information obtained will be supplemented by a site reconnaissance walk-over by a geo-environmental engineer to facilitate direct inspection of the site and the surrounding area for evidence of potentially contaminative past or present land use activities and past or present ground instability.

10.5.8 Sources of information used by the desk study will be:

- British Geological Survey (BGS) mapping available at 1:50,000 and 1:10,000 scale for the Kettering district, through the OpenGeoscience portal;
- Historical Ordnance Survey mapping;
- Modern day Ordnance Survey mapping viewed online;
- Information held on the Stantec managed National Natural and Artificial Cavities Database;
- Historical boreholes records viewed on the BGS website;
- Public register information viewed through the Environment Agency and MAGIC websites; and

- Radon guidance documents (BRE, 2015).

Significance Criteria

10.5.9 The significance of potential effects will be assessed by considering the sensitivity of receptors (i.e. their importance and ability to tolerate and recover from change) and the likely magnitude of the impact (i.e. its spatial extent and duration). By combining sensitivity and magnitude, the significance of the effect is established.

10.5.10 **Table 10.1** outlines the criteria that will be used to determine receptor sensitivity.

Table 10.1 Guidelines for Receptor Sensitivity

Sensitivity	Receptor	Criteria
High	Buildings, heritage assets and property	World Heritage site and Scheduled Ancient Monuments.
	Human Health	Construction workers; General public access; Occupiers of residential property; Other sensitive developments including Schools and Hospitals.
	Ecology	Special Protection Area, Special Area of Conservation or Ramsar (protected wetland) site or ecological SSSI.
	Surface Water	Water Framework Directive Water Quality High to Good.
	Groundwater	Principal aquifer providing regionally important potable water supply. SPZ1 – Inner Source Protection Zone. Private water supplies for potable use (boreholes, wells or springs).
	Ground Instability	Slope stability or subsidence problems almost certainly present or have occurred in the past. Major constraint on land use.
Medium	Buildings, heritage assets and property	Conservation area.
	Human Health	Workers/ visitors to commercial premises.
	Ecology	National Nature Reserve (NNR).
	Surface Water	Water Framework Directive Water Quality Good to Moderate
	Groundwater	Principal Aquifer supplying locally important water supply. SPZ2 – Outer Protection Zone. Private water supplies for non-potable use (boreholes, wells or springs).
	Ground Instability	Slope stability or subsidence problems are possibly present or anticipated.
Low	Buildings, heritage assets and property	Local value/ historical character. Agricultural land in arable production or pasture land.
	Human Health	Workers/ visitors to industrial premises.
	Ecology	County wildlife site.
	Surface Water	Water Framework Directive Water Quality Moderate to Poor.
	Groundwater	Secondary Aquifer. SPZ3 – Source Protection Zone total catchment.
	Ground Instability	Slope stability or subsidence problems are not likely to occur but consideration to potential problems should be considered.

Sensitivity	Receptor	Criteria
Negligible	Buildings, heritage assets and property	Replaceable buildings.
	Human Health	Unoccupied/ limited access.
	Ecology	Local habitat resource/ no local designation.
	Surface Water	Water Framework Directive Water Quality Poor to Bad.
	Groundwater	Unproductive non-aquifer.
	Ground Instability	Slope stability or subsidence problems are not thought to occur but consideration to potential problems of adjacent areas should be considered.

10.5.11 The magnitude of the change, either positive or adverse, arising as a result of the Proposed Development will be assessed using the criteria set out in **Table 10.2**.

Table 10.2 Guidelines for the Assessment of Magnitude

Magnitude	Description of Consequence
High	Land Contamination: Soil contamination is considered to pose a very high risk to potential receptors with numerous pollutant linkages certain to be present. Site certain to be or is currently deemed as Part 2A contaminated land and/or considered unsuitable for proposed end use. Ground Instability: Slope stability problems almost certainly present or have occurred in the past. Significant constraint on land use. Ground conditions due to the presence of clay soils and/ or adverse foundation conditions require special foundation schemes to be adopted for all building structures.
Medium	Land Contamination: Soil contamination is considered to pose a moderate risk to potential receptors with one or more pollutant linkages present. General remedial works required to make site suitable for proposed end use. Ground Instability: Moderate risk of slope stability problems being present or anticipated. Land use should consider specifically the suitability of the site. Mitigation measures likely to be required to make site suitable for development. Ground conditions due to the presence of clay soils and/ or adverse foundation conditions require special or engineer designed foundation schemes to be adopted locally for low-rise housing and in general for more heavily loaded structures.
Low	Land Contamination: Soil contamination is considered to pose a very low risk to potential receptors with one or more pollutant linkages possibly present. Very localised and small scale remedial works may be required on small areas of the site to make site suitable for proposed end use. Ground Instability: Slope stability problems are not likely to occur but potential problems of adjacent areas impacting on the site should be considered. Ground conditions are suitable for the general adoption of conventional foundation schemes for low rise development but may require engineer designed foundation schemes for more heavily loaded structures.
Negligible	Land Contamination: Soil contamination is not present or if slightly elevated levels are recorded no remedial works likely to be required to make site suitable for proposed end use. Ground Instability: Slope stability problems are not thought to occur on or within influencing distance of the site. Ground conditions are suitable for the general adoption of conventional high-level foundation schemes for the entire development.

10.5.12 The significance of an effect will be assessed based upon the sensitivity of the receptor and the magnitude of the change using the matrix presented at **Table 10.3**.

Table 10.3 Determining Significance of Effect

Magnitude	Sensitivity			
	High	**Medium**	**Low**	**Negligible**
High	Substantial	Major	Moderate	Negligible
Medium	Major	Moderate	Minor to Moderate	Negligible
Low	Moderate	Minor to Moderate	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

10.5.13 In the absence of 'industry standard' significance criteria for the consideration of ground conditions impacts, a qualitative approach, based upon available knowledge, experience and professional judgement, will be employed. The significance criteria that will be used for the purposes of the ES chapter are set out in **Table 10.4**.

10.5.14 Following the determination of impact significance, the overall effect significance is reported as either 'Significant' or 'Not Significant'. Where impact significance is assessed as negligible or minor, the overall effect is Not Significant. Where the impact significance is assessed as moderate, major or severe, the overall effect is Significant.

Table 10.4 Guidelines for the Assessment of Magnitude

Magnitude	Description of Consequence
Substantial Adverse	Land Contamination: Significant local environmental hazard to water resources, aquatic fauna and flora, and/ or humans (construction workers and/ or end users) requiring monitoring and more extensive local or site wide remedial work. Ground Instability: Development will render parts of the site to become unstable such that no development can take place or structural damage to buildings requiring services of builder, including local underpinning. Weather-tightness of buildings impaired. Loss of functionality of floor slabs. Widespread damage to service pipes. Significant loss of serviceability of roads/ footways requiring replacement. Development will cause significant slope instability on the study site.
Major Adverse	Land Contamination: Significant local environmental hazard to water resources, aquatic fauna and flora, and/ or humans (construction workers and/ or end users) requiring monitoring and more extensive local or site wide remedial work. Ground Instability: Structural damage to buildings requiring services of builder, including local underpinning. Weather-tightness of buildings impaired. Loss of functionality of floor slabs. Widespread damage to service pipes. Significant loss of serviceability of roads/ footways requiring replacement. Development will cause significant slope instability on the study site.
Moderate Adverse	Land Contamination: Local environmental hazard to water resources, aquatic fauna and flora, and/ or humans (construction workers and/ or end users) requiring monitoring and local remedial work. Ground Instability: Non-structural damage to buildings but repair requiring services of builder. Weather-tightness of buildings impaired. Loss of functionality of floor slabs. Local damage to service pipes. Some loss of serviceability of roads/ footways requiring repair/ local replacement. Development will cause localised slope instability.

Magnitude	Description of Consequence
Minor Adverse	Land Contamination: Temporary and minor environmental risk to surface water resources, aquatic fauna, flora or air quality. No appreciable risk to humans (construction workers or end users). Ground Instability: Minor (non-structural) damage to building fabric (brickwork / building finishes). Some continued maintenance required to all hardstanding areas. Development will cause localised and very minor slope instability.
Negligible	Geodiversity: Development will not result in restriction of access or damage to an important geological site. Land Contamination: No appreciable environmental risk to water resources, aquatic flora and fauna and humans. Any very low negative effects are reversible. Ground Instability: No effects on ground instability.
Beneficial	Land Contamination: Environmental risk is removed to provide betterment. Ground Instability: Beneficial effects on ground stability.

10.6 References

BRE, 2015. Radon: Guidance on protective measures for new buildings. Building Research Establishment, 2015.

11 Flood Risk and Drainage

11.1 Introduction

11.1.1 The Flood Risk and Drainage chapter of the ES will assess the likely impacts associated with the Proposed Development.

11.1.2 Flood risk and drainage has been scoped into the ES due to the potential for likely significant effects as a result of impacts on the existing waterbodies in the vicinity of the Site in terms of flood risk, water quality and water resources during the construction and operational stages of the Proposed Development.

11.1.3 The potential significant effects in relation to groundwater will be covered in the Ground Conditions chapter.

11.1.4 A Flood Risk Assessment (FRA) including a Surface Water Drainage Strategy will be prepared to inform the ES chapter and will be appended to the ES.

11.1.5 A Water Framework Directive (WFD) Compliance Statement will be prepared to reflect the proposed channel diversion works and the proposed section of the Potford Dam Link Road.

11.2 Baseline

Watercourses

11.2.1 A field ditch flows in a northerly direction along the eastern site boundary, crossing over site boundary at several locations. A tributary of this ditch flows through the south western part of the site before being culverted beneath the disused railway and flowing in open channel to the north of the railway. The ditch is then culverted back beneath the railway and re-emerges into open channel flowing in a north westerly direction in the northern part of the site and discharging to the ditch to the east at the site boundary. An irrigation pond named Potford Dam is located to the north east of the site.

Geology and Hydrogeology

11.2.2 BGS and Landmark data confirms that the Site is underlain by Charmouth Mudstone Formation which is designated as Secondary Undifferentiated aquifer.

11.2.3 Superficial deposits of Dunsmore Gravel Formation are present in the southern part of the site. Bosworth Clay Member is found over the rest of the site.

11.2.4 According to current EA mapping the Site is not located in an EA designated Groundwater Source Protection Zone (SPZ).

11.2.5 The EA classifies the groundwater vulnerability as ‘Low’.

Flood Risk

11.2.6 The EA’s online Flood Map for Planning map indicates that the site is located within Flood Zone 1 ‘Low Probability’ of flooding.

11.2.7 However, the ditches in the vicinity of the site have not been modelled on the EA mapping and therefore the risk of flooding from these ordinary watercourses is not adequately represented on the EA Flood Map.

11.2.8 Hydraulic modelling has been undertaken for the eastern and northern ditches. The modelling shows that the 1 in 100 yr plus climate change flood event is contained within channel in the vicinity of the site. There is a small area in the northern tip of the site at risk of flooding in the modelled 1 in 1,000 year flood event (i.e. Flood Zone 2).

11.2.9 The EA Surface Water Flood Map indicates that the low point in the northern corner of the site and along the ditches are potentially at a 'Low' likelihood of surface water flooding. The vast majority of the site is at a 'Very Low' likelihood of surface water flooding.

11.2.10 A review of the Strategic Flood Risk Assessment (SFRA) and Preliminary Flood Risk Assessment (PLRA) confirm that there are no known incidences of groundwater flooding or historical incidences of surface water flooding at the Site.

11.2.11 The online EA Flood Map for 'Risk of Flooding from Reservoirs' indicates that there is no risk of reservoir flooding at the Site.

Existing Drainage Regime

11.2.12 Due to the greenfield nature of the Site there is no formal drainage infrastructure within the Site. A review of topographical site surveys confirms that the Site drains via overland flow to the existing ditches.

Water Quality

11.2.13 The Severn District RBMP and online EA catchment explorer mapping confirms that the River Avon downstream of the site has a current ecological standard of moderate.

11.2.14 The watercourses adjacent to the Site do not have a specific surface water quality designation, however, as they contribute to the River Avon they can also be classified as being of moderate standard.

11.2.15 The site is located on Warwickshire Avon-Secondary Mudrocks groundwater body. This is designated as being of 'Good Status'.

11.3 Consultation

11.3.1 Consultation will be made with the EA and with WCC as the Lead Local Flood Authority (LLFA), to confirm the assessment methodology and obtain up to date flood risk and drainage information relevant to the site.

11.4 Potential Effects

Insignificant Effects

11.4.1 At this stage, no potential effects are considered insignificant or are proposed to be scoped out.

Significant effects

11.4.2 The following list identifies potential significant effects from the Proposed Development if mitigation measures are not implemented:

- The Proposed Development will increase the impermeable area within the Site, thereby increasing the rate and volume of surface water runoff to the receiving watercourse. Without mitigation, this has the potential to increase flood risk to the site and downstream receptors of the Proposed Development.

- There is the potential for flow routes to be impacted and decreases in floodplain storage should construction works be located within the fluvial floodplain, which may increase flood risk to the Site and surrounding areas.

- The potential pollution of surface waters and groundwater in the vicinity of the Site from production of silt laden surface water runoff, spillages of fuel and general construction activities and from contamination of surface water runoff from on-site vehicles during operation phase discharging to watercourses/groundwater without the implementation of a SuDS surface water management strategy.

- Should works be proposed in areas of flood risk this would introduce new receptors (workers, materials and plant, residents) to this risk.

- Additional loading upon Sewage Treatment works and foul drainage infrastructure in the area as a result of increased loading and the potential adverse effect on water quality within the watercourse receiving treated foul water flows.

11.5 Methodology

11.5.1 In order to fully assess the flood risk to the Site, a site-specific Flood Risk Assessment (FRA) is to be produced which will inform the ES chapter. The scope of this FRA will include:

- Review of the relevant planning policy and available Strategic Flood Risk Assessments;

- Collection and review of current and historic flood risk information;

- Identification of sources and probability of flood risk both pre- and post-development;

- Recommendations for flood mitigation/management measures; and

- Identification of any off-site effects and residual risks.

11.5.2 The assessment will be carried out with due regards to current and relevant legislation and guidance.

11.5.3 The baseline hydraulic model (previously prepared to support proposals for the wider Rugby South site) will be used to inform the masterplan and mitigation measures.

11.5.4 The FRA and ES will identify mitigation required to ensure that the development is acceptable in flood risk terms. It is proposed that built infrastructure provided as part of the development would be set back from the surrounding water courses by up to a maximum of 8m to reduce potential impacts from fluvial flooding. Measures will also be identified in the FRA to address any residual flood risk, such as setting finished floor levels, in line with EA requirements.

11.5.5 The FRA and ES will consider the potential effects of the Proposed Development on surface water runoff rates/volumes and water quality. Background information will be requested from the relevant organisations, including the EA, Thames Water and British Geological Society in respect of water supplies and quality, water abstractions, surface water drainage rates and geological conditions.

11.5.6 The FRA and ES will also outline the proposed surface water drainage strategy including the proposed SUDS strategy and mitigation measures to ensure no detrimental impact on flood risk and water quality through controlling surface water runoff discharge rates and providing pollution control measures.

11.5.7 The scheme will also consider the potential increase in flood risk due to climate change in relation to flood risk and drainage over the lifetime of the Proposed Development in accordance with EA guidance.

11.5.8 It is proposed that sections of the eastern ditch may be culverted/realigned as a result of the Potford Dam Link Road proposals. Hydraulic modelling of the Proposed Development will be undertaken to confirm no detrimental impacts on flood risk to the site or offsite. A Water Framework Directive Compliance Statement will be prepared.

11.5.9 The ES chapter will include an assessment of effects based on the impact of the Proposed Development on identified receptors. The assessment significance of flood risk, drainage and water quality effects will be determined from considering the receptor sensitivity and the likely magnitude of the effect on the receptor. By combining these two elements a significance of effects can be derived. Where adverse effects are identified, mitigation measures will be proposed to reduce the level of them.

12 Cultural Heritage

12.1 Introduction

12.1.1 This chapter of the ES will be produced by The Environmental Dimension Partnership Ltd (EDP).

12.1.2 The ES Chapter will identify and describe the nature and significance of the effects likely to arise in relation to Cultural Heritage receptors within a defined study area, including direct and indirect effects.

12.1.3 Cumulative effects, arising from the effect of the Proposed Development in conjunction with other developments, will also be considered.

12.1.4 The scope of the assessment will include the following:

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

12.2 Baseline

Designated Heritage Assets

12.2.1 There are no designated heritage assets (as defined in Annex 2 of the National Planning Policy Framework (NPPF)) such as World Heritage Sites, Scheduled Monuments, listed buildings, registered parks and gardens or registered battlefields, within the Site.

12.2.2 In the wider area, the National Heritage List for England (NHLE) identifies one Grade II listed building within 1km of the Site boundary.

12.2.3 Within a 2km search radius of the Site boundary, the NHLE identifies one Scheduled Monument and 10 further Grade II listed buildings.

12.2.4 The Scheduled Monument comprises:

- Prehistoric pit alignment and associated features on Lawford Heath, adjacent to the northernmost Blue Boar Farm, c.1.1km to the west of the site.

12.2.5 The Grade II listed buildings comprise:

- Cawston Farmhouse (1390996); c.450m to the northeast of site
- Church House, Church Of St Edmund (1319932); c.1.3km southeast of site
- Pipewell Cottage (1034925); c.1.4km southeast of site
- Stanleys Farmhouse (1034924); c.1.3km southeast of site
- The Old Forge (1116482); c.1.2km southeast of site
- The Windmill (1365061); c.1.3km southeast of site

- Lavender Furlong (1034969), c.1.6km southeast of site
- Toft Manor (1034943), c.2km southeast of site
- Cawston Old Farmhouse (1299724); c.1.7km northeast of site
- Lawford Hill Farmhouse (1299648); c.1.7km north of site
- Park Farmhouse (1185647); c.1.6km west of site

12.2.6 All of these assets will be considered within the remit of the Archaeology and Heritage Desk-Based Assessment that will inform the ES Chapter.

Non-designated Heritage Assets

12.2.7 The online version of the Warwickshire Historic Environment Records (HER) was consulted regarding the location and extent of known, non-designated, heritage assets, both within and adjacent to the Site. There is just one record located within the area of the Site. This record (HER ref: MWA7306) comprises a Neolithic flint scatter.

12.2.8 Within the wider 1km search area, 45 records are held by the Warwickshire HER.

12.2.9 These records include further evidence of prehistoric activity, with three Neolithic flint artefacts, including a scraper, being located immediately east of the site (HER ref: MWA7428) and a prehistoric enclosure system, indicated as crop marks on aerial photography, being located at the western edge of the A4071 (HER ref: MWA3483). A prehistoric ring ditch (HER ref: MWA3098), prehistoric pits, (HER ref: MWA12595) and flint findspot (HER ref: MWA5914) are also located in the 1km area.

12.2.10 The remaining results largely relate to undated field systems, however, evidence of medieval settlement is present with the deserted medieval settlement within the settlement of Cawston, thought to have been occupied in the 12th and 13th Century (HER ref: MWA4144). A medieval watermill (HER ref: MWA4129) and documentary evidence of medieval ovens at Cawston Grange (HER ref: MWA4120) is also recorded. As expected, the 1km search area also includes evidence of post-medieval settlement and industry.

12.2.11 A full and extensive search of the 1km search area will be requested from the Warwickshire HER to inform the ES chapter.

12.2.12 Aerial photographs, held by the Historic England archives, will also be consulted in order to inform the ES chapter as will historic maps from online sources or the Warwickshire County Records Office and LiDAR data held by the Environment Agency.

12.2.13 A geophysical survey was undertaken in 2015 by SUMO archaeological Services across the entirety of the Site.

12.2.14 The survey revealed a small grouping of linear and discrete anomalies within the centre of the Site, which have been interpreted as potential archaeological remains. However, these anomalies largely respect the alignment of a previous field boundary noted in 20th Century mapping, or are directly perpendicular to it, and are thus most likely to relate to modern agricultural practices (SUMO, 2015).

12.2.15 A second grouping is located directly south of this, comprising a number of anomalies in a rectilinear grouping, possibly indicating the buried remains of an enclosure system (SUMO, 2015).

12.3 Consultation

12.3.1 The following stakeholders will be consulted prior to the completion of the baseline assessment:

- Warwickshire County Council Archaeologist – with regard to the scope of the desk-based assessment, geophysical survey and trial trenching;
- Rugby Borough Council Conservation Officer – with regard to scope of setting assessment and comment on the potential effects on the setting of the Grade II listed buildings; and
- Historic England – with regard to scope of setting assessment and comment on the potential effects on the setting of the Scheduled Monument and Grade II listed buildings.

12.4 Potential Effects

Insignificant Effects

12.4.1 An initial review of the baseline data, and feedback from initial consultation, has identified the following potentially insignificant effects, subject to the results of the full assessment process.

Designated Heritage assets

12.4.2 Based on a review of the available baseline data, it is anticipated that sensitive receptors, potentially subject to an indirect effect on their value due to change within their settings, will be most likely to comprise the single listed building located in relatively close proximity to the Site; the Grade II listed Cawston Farmhouse (1390996), located c.450m to the northeast of Site.

12.4.3 Other designated assets (described above) are considered less likely to be subject to a significant, indirect effect, due to their distance from the Site.

12.4.4 Prior to proper assessment having been carried out, it is not possible to state with any certainty what the effects of the Proposed Development on designated assets would be. However, given the distances of these assets from the Site, and the intervening vegetated field boundaries and built form which provides a screen between them, it is unlikely that any designated assets will receive any significant effects.

Non-designated Heritage Assets

12.4.5 Regarding archaeology, consultation with the Archaeological Advisor to Warwickshire County Council, in 2015, identified a potential for archaeological remains within the area allocated as Policy DS3.4.

12.4.6 The Archaeological Advisor advised that the Site should be subject to a geophysical survey. Depending on the results of this survey, it was also advised that a trial trench evaluation may be necessary in order to characterise the nature and value of any potential archaeological remains identified by the geophysics.

12.4.7 Given that two areas of archaeological anomalies were revealed by the results of the geophysical survey, it is likely that trial trenching will be requested to be undertaken across the Site, to a scope agreed by the Archaeological Advisor. This evaluation should provide additional information on the significance of archaeological remains within the site and as to whether their loss would comprise a significant effect. The greatest likelihood is that remains will be of low value and thus their loss would be insignificant.

12.4.8 It is considered that effects on potential buried heritage assets (archaeology) could be at least in part mitigated in advance of, or during, the course of the construction phase. As such, there are unlikely to be any effects on archaeological remains during the operational phase and

buried heritage assets are unlikely to be considered beyond the construction phase assessment in the ES.

12.5 Significant effects

12.5.1 For the reasons set out above it is not anticipated that there will be any significant effects on any designated heritage assets due to changes within their settings.

12.5.2 Regarding archaeology, following desk-based assessment and trial trenching it is possible that remains of moderate or high sensitivity are found within the Site. Loss of such remains would potentially represent a significant effect in EIA terms, however, any effect could be reduced through mitigation by archaeological recording in advance of development. The scope of mitigation would be agreed in advance with the Archaeological Advisor to Warwickshire County Council.

12.6 Methodology

Policy and Guidance

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

- Planning (Listed Buildings and Conservation Areas) Act 1990;
- Ancient Monuments and Archaeological Areas Act 1979;
- The National Planning Policy Framework (NPPF, 2021); and
- The Rugby Borough Council Local Plan 2011-2031 (Adopted June 2019).

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

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

Baseline Data

12.6.3 The following studiy will be prepared in order to inform the ES Chapter:

- Archaeology and Heritage Desk-Based Assessment - This assessment will present a baseline of historic environment information for the site and its environs (as required by NPPF, 2021), and in accordance with the Chartered Institute for Archaeologists' Standard and Guidance for Historic Environment Desk-based Assessment (CIfA 2020)). With recourse to desk-based sources of historic environment data (inclusive of the Warwickshire HER), and a site walkover, it will define the site's potential to contain potentially significant archaeological remains utilising a 1km radius study area.

It will also identify any designated heritage assets within a 2km study area, describe their setting and its contribution to their heritage value, and whether and to what degree the site also contributes in order to inform the operational development assessment.

12.6.4 Following completion of the desk-based assessment and a review of the results of the geophysical survey undertaken in 2015 (SUMO, 2015), discussions with the Archaeological Advisor to WCC will confirm the need for any Trial Trench Evaluation. If required, this will be set out and agreed through the submission of a Written Scheme of Investigation/Method Statement (following a methodology and scope agreed with the Archaeological Advisor) and then undertaken under a suitably worded planning condition.

Assessment Thresholds / Magnitude Of Effects / Significance Of Residual Effects

12.6.5 The evaluation of potential significant effects on a heritage asset will be based on a combination of the designation, the heritage significance or sensitivity of the asset in question, and the magnitude of change that is predicted to result from the development. The assessment of likely significant effects, as a result of the development will take into account both the construction phase and the operational phase.

12.6.6 The assessment set out in the ES Chapter will attribute 'sensitivity' to archaeological and cultural heritage assets, as shown in **Table 12.1**.

Table 12.1: Preliminary Assessment of Effects

Receptor	Sensitivity of Receptor
World Heritage Site	Very High
Scheduled Monument	High
Grade I or II* Listed Building	High
Grade I or II* Registered Park or Garden	High
Registered Battlefield	High/Medium
Other Nationally important Heritage Asset	High/Medium
Grade II Listed Building	High/Medium
Grade II Registered Park or Garden	High/Medium
Conservation Area	Medium/Low
Other asset of Regional or County Importance	Medium/Low
Locally important asset with cultural or educational value	Low/Very Low
Heritage site or feature with no significant heritage value or interest	Low/Very Low

12.6.7 The classification of the magnitude of change to heritage assets will be based on consistent criteria. It will take account of such factors as the physical scale and type of disturbance and whether features or evidence would be lost that are fundamental to their historic character, integrity and therefore significance. Both physical and nonphysical (e.g. visual) changes to heritage assets will be considered. The magnitude of impact is assessed using the criteria in **Table 12.2**.

Table 12.2: Magnitude of Impact

Magnitude	Description
Very High	Change to a heritage asset so that it is completely altered (positive or negative) or destroyed (negative).
High	Change to a heritage asset so that it is heavily modified (positive or negative).
Medium	Change to a heritage asset so that it is noticeably different (positive or negative).

Magnitude	Description
Low	Change to a heritage asset so that it is slightly altered (positive or negative).
Very Low	Change to a heritage asset that hardly affects it (positive or negative).

12.6.8 Following the evaluation of the sensitivity of specific cultural heritage receptors, and the magnitude of the impact upon them, the significance of the effect will be assessed using a matrix approach in accordance with the overarching EIA methodology.

12.7 References

- Chartered Institute for Archaeologists (CIfA) 2020 *Standard and Guidance for Historic Environment Desk-based Assessment, Reading*.
- Historic England (HE) 2017 *Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets*.
- Ministry of Housing, Communities and Local Government (MHCLG) *2021 National Planning Policy Framework*.
- Rugby Borough Council 2019. *Local Plan 2011-2031*.
- SUMO services, 2015, *Geophysical Survey Report G1503; Rugby South.*

13 Landscape and Visual

13.1 Introduction

13.1.1 This chapter of the ES will be produced by The Environmental Dimension Partnership Ltd (EDP).

13.1.2 The purpose of this section is to set out the technical details of the assessment of landscape and visual impact being undertaken and the way in which it will be reported within the ES.

13.1.3 Landscape and visual effects are independent but related issues. Landscape effects relate to changes to the landscape fabric and the features contributing to the landscape character and quality; visual effects relate to the appearance of such changes within views and the resulting effect on visual amenity.

13.1.4 The landscape and visual assessment has already commenced and EDP has examined the current landscape and visual baseline conditions within the Site and its broader context with reference to sensitive visual receptors and landscape designations. The assessment process will involve an ongoing analysis of the likely landscape and visual effects of the evolving development proposals and, where impacts cannot be avoided through design, will recommend additional mitigation measures.

13.2 Baseline

13.2.1 The character of the Site is predominately an intensively farmed landscape under active agricultural management which is affected by a number of detracting landscape elements which surround the site including the A45/M45/A4071 road network and 'suburban developments' including the Dunchurch Trading estate just outside the south western Site boundary. In terms of landscape features, the Site comprises a large arable field parcel within limited internal landscape features. Around the site are a number of low, gappy hedgerows that have been intensively managed and are generally of 'negligible' intrinsic ecological value. Trees adjacent to the Site include scattered mature oak within hedgerows and a small copse surrounding a pond to the east of Station Farm. To the east lies a small reservoir, with ancient woodland beyond.

13.2.2 The Site is located on the boundary between the Dunsmore: Plateau Farmlands Landscape Character Type (LCT) and the Dunsmore Plateau Fringe LCT as defined in the LCA Sensitivity and Condition Study (2006). Being divorced from the wider Dunsmore Plateau Fringe LCT by a disused railway line and newly built form to the north of Coventry Road, the Site and its surroundings exhibit many of the broad characteristics of the Plateau Farmlands – the gently rolling, low glacial plateau, an empty landscape of former waste, a regular geometric field pattern, defined by closely cropped hawthorn hedges, many mature hedgerow oaks, large blocks of ancient woodland.

13.3 Consultation

13.3.1 No formal consultation has been undertaken in relation to this application to date.

13.3.2 A Plan (edp6981_d001) contained at **Appendix D**, identifies 12 representative viewpoints upon which it is proposed will form the basis of the visual assessment. Views have been selected to give the full range of visual circumstances including close, medium and longer-range views, views from local roads and public rights of way and views from within residential areas as well as open countryside. A number of factors serve to limit the opportunity for views in the local area, Cawston Spinney being the most significant, as well as other copses and tree belts, settlement edge development and local topography. Agreement to the above approach is sought by way of this scoping exercise. Discussions may take place directly with the relevant officer in RBC in the intervening period.

13.4 Potential Effects

Insignificant Effects

13.4.1 The landscape and visual assessment has already commenced and has examined the current landscape and visual baseline conditions within the Site and evaluated the Site in its broader context, with reference to sensitive visual receptors and landscape designations within a 2km study area. The assessment process will involve an ongoing analysis of the likely landscape and visual effects of the evolving development proposals and, where impacts cannot be avoided through design, will recommend additional mitigation measures.

13.4.2 Insignificant landscape effects include the removal of sections of hedgerow and occasional individual boundary trees to allow for access and layout, together with the planting of new hedgerows and trees to strengthen the structure of the landscape.

13.4.3 In visual terms, the overlying pattern of trees and hedgerows defining agricultural fields and highway corridors heavily filter views across the landscape surrounding the Site. A recent on-site visual appraisal has shown that:

- Views from close quarters are generally only available from very small sections of busy road corridors and from sections of the local public rights of way network through and immediately surrounding the Site;
- From most roads and footpaths, views towards the Site are filtered by intervening vegetation and landform;
- There are a small number of residential properties with close-quarter views of the Site. Any middle distance to distant views of the Site are gained across gently undulating agricultural landscape and tend to be heavily filtered or fragmented by intervening vegetation; and
- Much of the wider study area lies outside of the visual envelope from where no views of the entire Site are possible.

13.4.4 In summary, potential visual effects would include changes to views from the following receptors:

- Users of public rights of way in the local vicinity and users of Cawston Greenway;
- Users of the A4071;
- Residents of Station Farm Cottage;
- Residents of Potford Dam Farm and future residents of Cawston Phase I; and
- Workers in the Dunchurch Trading Estate.

13.4.5 Consideration will also be given to the likely cumulative landscape and visual effects that may arise as a result of the Proposed Development being built alongside wider allocations. Given the early stages of the development of the wider allocation, the cumulative assessment will be based on the information set out in the SPD including the Framework Plan for the allocation.

13.4.6 Again, given the visual containment that exists as a result of Cawston Spinney and other woodland belts in the area, cumulative impacts are likely to be limited to receptors to the immediate south and east of the site.

Significant effects

13.4.7 The most notable landscape effect as a result of the development would be the change in character from open agricultural land to residential development across much of the Site.

13.4.8 The most notable changes to views will occur from those receptors which lie within or on the boundary of the Site including users of the public rights of way and residents of Station Farm Cottage.

13.5 Methodology

13.5.1 EDP's methodology for undertaking the LVIA (included at **Appendix E**) follows the guidelines set out in the third edition of Guidelines for Landscape and Visual Impact Assessment (GLVIA) (Landscape Institute and Institute of Environmental Management and Assessment, 2013). This will be used as a basic approach and amended as necessary to cover specific site issues.

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

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

13.5.3 Initial site appraisals have already been undertaken. However, a further and more detailed site appraisal would be undertaken, the purpose of which would be to:

- Confirm the extent of study areas for the landscape and visual assessments respectively;
- Confirm status of baseline conditions identified by the desktop;
- Confirm the landscape character areas within the study area and compare these to the actual baseline condition. This will also include consideration of the findings of the Archaeology and Heritage, Ecology and Arboricultural assessments which present findings on features within the study area; and
- Identify the Primary Visual Envelope of the Site and record key viewpoints from within this, which will be used to inform the landscape and visual assessment of the Proposed Development.

13.5.4 Following initial analysis and subsequent field work, and having an appreciation of the development proposed, a refinement of the wider study area would be undertaken, which focuses on those areas and features that are likely to be affected by the proposals.

13.5.5 The second stage of the LVIA would seek to describe and make a judgement on:

- Effects on the Landscape Character: The effects which may arise as a result of the Proposed Development on discrete character areas and/or character types comprising features that may possess a particular quality or merit. In this case, the effects on the historic landscape will be considered and cross referenced with the Archaeology and Heritage ES Chapter; and

- Visual Effects: Effects that may arise as a result of the Proposed Development on views from visual receptors, such as users of local rights of way, and upon the amenity value of the views from surrounding uses.

13.5.6 The detailed methodology for the assessment of effects is included at **Appendix E** and will be agreed with the LPA's Landscape Officer, including the final selection of viewpoints to form the basis of the assessment.

13.5.7 As part of the development proposals, measures to mitigate any visual impacts and enhance the landscape value and visual quality of the area are integral to architectural and landscape design work and particularly pertinent to the Proposed Development. The approach of the developer is to produce a scheme of high architectural and landscape quality and design, taking full account of the setting of the Site, and particularly the Site's relationship with the wider context to the south-west of Rugby. If any adverse visual impacts are identified through the assessment, mitigation measures will be considered such as through choice of scale, massing, materials and finishes; landscape strategy; and screening during construction.

13.5.8 Finally, an assessment of any residual effects which may arise following the incorporation of mitigation measures will be undertaken. The evaluation of residual effects will be considered for Day 1 (completion of final dwelling with any construction activities finished and landscaping implemented) and Year 15 allowing for the consideration of the screening effects of screen planting that will be incorporated as mitigation for the development.

13.5.9 The final output of the exercise will be to provide text and illustrative material which:

- Establishes the baseline conditions at a point at which the Site will become available for development;

- Assesses the landscapes sensitivity to change of nature and extent of the Proposed Development;

- Assesses the landscape and visual impact of the development on the Site and relevant surrounding area;

- Identifies areas of landscape and visual concern and/or benefit in relation to the development and during its construction;

- Advises on any proposals to mitigate material negative effects; and

- Identifies the residual impacts of the development.

13.6 References

- Rugby Borough Council, 2006, Landscape Assessment of the Borough of Rugby Sensitivity and Condition Study. Published 2006.

- Rugby Borough Council, 2017. The Submission Rugby Borough Council Local Plan 2011-2031.
- Landscape Institute / Institute of Environmental Management and Assessment, 2013. Guidelines for Landscape and Visual Impact Assessment, Third Edition. Published 2013.
- Rugby Borough Council South West Rugby Masterplan Supplementary Planning Document. Adoption version – adopted 17 June 2021.

14 Biodiversity

14.1 Introduction

14.1.1 This chapter of the Environmental Statement (ES) will be produced by The Environmental Dimension Partnership Ltd (EDP).

14.1.2 The chapter will assess the impact of the Proposed Development on ecological features of the Site and the surrounding area based upon the findings of the desk study, consultations and field surveys undertaken across the Site and wider study area. In particular it will consider the potential key impacts of the Proposed Development on habitats and protected and notable species.

14.1.3 The chapter will further describe the nature and significance of the effects likely to arise in relation to ecological receptors within a defined study area, including direct and indirect effects.

14.2 Baseline

Designated Sites

14.2.1 A desk study was undertaken in February 2021 to collate pertinent biological data about the Site and surrounding study area, including designated sites and protected/priority species.

14.2.2 No part of the Site is covered by any statutory designations and there are no international statutory designations within 10km of the Site.

14.2.3 Draycote Meadows Site of Special Scientific Interest (SSSI) is situated 2km to the south-west of the Site. The SSSI consists of two 'ridge and furrow' meadows lying on clay soils supporting seventeen species of butterfly.

14.2.4 Seventeen non-statutory designated sites fall within the Site's potential Zone of Influence, with two of these Local Wildlife Sites (LWS) situated adjacent to the Site, as follows:

- Fox Covert and Cawston Spinney LWS: A largely replanted ancient woodland with some areas listed as ungraded nature conservation status; and
- Dismantled Railway Rugby to Leamington: Noted for bloody-nosed beetle. Habitats of note include regenerating woodland and scrub. A section is botanically diverse.

Ecology Surveys

14.2.5 Baseline surveys have been undertaken at the Site since 2014, and most recently updated in part during 2021 including:

- Extended Phase 1 habitat survey;
- Breeding bird survey;
- Wintering bird survey;
- Bat surveys (activity and roost surveys) consisting of:
- Automated detector surveys;
- Manual transect surveys;

- Bat roost inspection survey of buildings at Cawston Farm;
- Bat emergence/re-entry surveys of buildings at Cawston Farm;
- Dormouse presence/absence survey;
- Water vole and otter presence/absence survey;
- Badger walkover survey;
- Great crested newt presence/absence surveys;
- Reptile presence/absence survey; and
- Bloody-nosed beetle presence/absence survey.

14.2.6 The Site is largely composed of agricultural land, with associated species-poor hedgerows and species-poor grassland field margins. Fox Covert and Cawston Spinney LWS, an area of replanted ancient woodland is present along a short section of the eastern Site boundary and the Dismantled Railway Rugby to Leamington LWS delineates the western boundary. A seasonally wet ditch runs along the eastern boundary which is small tributary of the River Avon and which is fed in part by a large irrigation pool located offsite to the east of the Site. The majority of the onsite habitats identified are considered to be of only Local nature conservation value or lower, such that their unmitigated loss is unlikely to represent 'significant harm to biodiversity' in planning policy terms and would only be significant at the Local level however the habitats associated with Dismantled Railway Rugby to Leamington LWS are considered to be of County level ecological importance.

14.2.7 Species surveys have identified assemblages of foraging bats, otter, grass snake, toads and bloody nosed beetle of Local level ecological value within the Site. Assemblages of wintering birds and breeding birds as well as badger have been identified within the Site though these are considered to be of less than local value. Dormice and great crested newt are considered to be absent from the Site.

14.2.8 Due to the generally limited intrinsic value of habitats on site, and based upon previous survey results, the site does not support any exceptional nor unique populations/assemblages of protected/Priority species (of District-level value). In the absence of mitigation, it is possible that potentially significant direct or indirect effects could occur to species during construction and/or occupation of the development due to habitat loss and disturbance.

14.3 Consultation

14.3.1 The following stakeholders will be consulted prior to the completion of the baseline assessment:

- Warwickshire County Council's Ecology Team – with regard to the scope of the desk-based assessment and onsite ecology surveys.
- Natural England – with regard to the development and its potential impact on designated sites and protected species assemblages.

14.4 Potential Effects

Insignificant Effects

14.4.1 An initial review of the baseline data has identified the following potentially insignificant effects, subject to the results of the full assessment process.

Wintering Birds

14.4.2 The large arable field present within the Site was considered to have potential to support foraging wintering birds, some of which may be of conservation concern. To determine the usage of the Site by wintering birds, a wintering bird survey involving two visits was undertaken during the winter of 2018/19 and a pilot wintering bird survey in 2021.

14.4.3 The surveys found that the Site supported very few wintering birds with only occasional skylark (Alauda arvensis) recorded flying across the Site. Within adjacent, offsite habitats a number of common resident and winter migrant species were recorded; none of which were rare or notable. On the basis of the wintering bird survey results, it is considered that the wintering bird assemblage is of less than local value and will be scoped out of further assessment.

Breeding Birds

14.4.4 The large arable field and boundary features within the Site provide some limited suitability habitat for breeding birds. A pilot breeding bird survey entailing a single visit with reference to the Common Bird Census (CBC) approach was undertaken in July 2018 and updated in July 2021.

14.4.5 A number of species of note were recorded during previous surveys within the wider study area, including dunnock, skylark, yellowhammer and song thrush and the arable land, hedgerows and woodland edge on-site are considered to represent a potential breeding resource for some of these species. However, the pilot breeding bird surveys revealed a fairly species-poor assemblage onsite, comprising common and widespread species. Those species of conservation concern recorded were in low numbers and, whilst considered to possibly utilise the Site to breed, would be confined to the peripheries of the Site due to the available habitats. On the basis of the breeding bird survey results, it is considered that the breeding bird assemblage is of less than local value and will be scoped out of further assessment.

Significant effects

14.4.6 An initial review of baseline data and feedback from initial consultation has identified potentially significant effects on the following ecological features.

Table 14.1 Potentially Significant Effects

Feature	Key Attributes/Location	Protected Status and Value
Designations and Habitats		
Dismantled Railway Rugby to Leamington	Local Wildlife Site situated adjacent offsite (adjacent west)	LWS is County level nature conservation value. The LWS is considered by EDP as likely to be of at least Local value
Fox Covert and Cawston Spinney	Local Wildlife Site. Short section situated adjacent offsite (east)	LWS is County level nature conservation value. The LWS is considered by EDP as likely to be of at least Local value
Ditch and irrigation pool	Site supports a ditch and an irrigation pond (offsite to east) known to support a large population of common toads, which together provide a local blue corridor/ stepping stone	Local nature conservation value

Feature	Key Attributes/Location	Protected Status and Value
	habitat in an agricultural landscape	
Hedgerow	Site supports a network of hedgerows along the peripheries of the site and with one length running into the site from the north	Local nature conservation value.
Species Populations/Assemblages		
Foraging bat assemblage	Only moderate numbers of species typical for the locality; with very small numbers of less common bat species	Fully protected; of Local nature conservation value.
Otter population	Using pond east of the site which connects to Site via ditch network, therefore potential likelihood of presence on-site.	Fully protected; The population in the wider study area, partly supported by the Site, is of Local nature conservation value.
Badger population	No signs of setts within the Site though considered to be using the land to forage	Badgers not of conservation concern due to population declines, but fully protected for reasons of animal welfare. Therefore, of Site value.
Grass snake population	Large population using hedgerow and ditch network throughout the wider study area to the south and east. Small population recorded within the Site.	Partial protection; present across the wider study area with the Site partly supporting this population, therefore Local nature conservation value.
Bloody-nosed beetle population	Present within boundary vegetation/field margins supporting the species' food plants (cleavers and hedge bedstraw)	Not protected; common and widespread in UK but declining in Warwickshire and therefore of Local nature conservation value.
Common Toad	Large breeding population present in offsite adjacent habitats	Not protected; common and widespread in UK but notable population and therefore of Site level conservation value

14.5 Methodology

14.5.1 The following methodology for the assessment is proposed:

- The assessment will follow the methodology provided in the Guidance for Ecological Impact Assessment (CIEEM, 2018).
- Existing data held by the Warwickshire Biological Records Centre, Natural England and the Environment Agency will be examined to identify the known locations of designated sites and protected/priority species.
- The survey technique adopted for the initial habitat assessment was at a level intermediate between a standard Phase 1 survey technique, based on habitat mapping and description, and a Phase 2 survey, based on detailed habitat and species surveys. The survey technique is commonly known as an Extended Phase 1 survey. The results of

the Phase 1 habitat survey, were used to identify the habitats present within the Site as well as the protected species surveys required to establish the baseline assessment.

- Further protected species have been/will be conducted with reference to the following best practice guidance where it exists for wintering and breeding bird surveys, bat roost assessments and activity surveys, dormice, otter, water vole, badger, great crested newt and reptiles.

- Findings from the ecological assessment will inform the master planning and mitigation strategy. Should any significant effects remain after mitigation/enhancement, these will be considered against legislation and policy.

Baseline surveys

14.5.2 A range of surveys have been completed historically and updated in 2021, with further updates scheduled for completion in spring 2022. These surveys will be reported in an updated ecological baseline report to inform the ES Chapter.

Assessment Thresholds / Magnitude Of Effects / Significance Of Residual Effects

Geographical Scope

14.5.3 CIEEM guidelines require ecological receptors to be valued (or to have the potential to be valued) according to a geographical scale. Assigned ecological values are based purely on the innate biodiversity value of the flora, fauna and habitats in terms of the conservation of genetic resources and do not take account of their amenity or economic values.

Temporal Scope

14.5.4 CIEEM guidelines aim to establish a standard in the assessment of the effects of potential development on wildlife receptors, which is then informed by the interpretation of contextual information and professional judgement. The assessment of significance is based on a number of features including the value and sensitivity of the receptor; the magnitude or size of the effect; the frequency of the effect and whether it is permanent or temporary and the likelihood of it actually occurring.

14.5.5 Assessment of potential ecological effects resulting from the development proposals is based on predicting ecologically significant changes to the baseline conditions that are likely to occur as a result of the development. An impact is significant or not based upon its effect on the 'integrity' of a nature conservation site or 'conservation status' of habitats and species.

14.5.6 CIEEM guidance requires that impacts be assessed with and without mitigation. However, there are a range of standard working practices and avoidance measures (in relation to ecology) that are used during construction phases to avoid statutory offences. In addition, a number of measures have been 'designed in' to the scheme as part of the iterative assessment process to avoid or minimise impacts on ecological features. As it is certain these "embedded" mitigation measures will be applied to the development, pre-mitigation impacts are assessed on the basis these measures would be applied.

Determining Sensitivity of Receptor

14.5.7 The sensitivity of affected receptors will be considered on a scale of high, medium, low or negligible. Receptor sensitivity will be considered as a habitats/species ability to withstand change and the likelihood for deterioration as a result of nearby development as detailed in the table below.

Table 14.2 Defining Receptor Sensitivity

Receptor Sensitivity	Details
High	Receptor supports habitats/species of international or national importance. Designated sites including SACs, SPAs, Ramsar Sites, SSSI and NNR. Species including Annex II and UK Priority species[i]. Receptor has limited or no capacity to withstand changes or increased disturbance and with limited potential for substitution / replacement.
Medium	Receptor supports habitats/species of national or Local importance. National designations where supported habitats are less sensitive or more spatially separated from the site and direct impacts on non-statutory designations (LWS, ancient woodland) with higher sensitivity habitats. Receptor has limited capacity to withstand changes or increased disturbance and with limited potential for substitution / replacement.
Low	Habitat and species receptors which have a moderate capacity to accommodate physical changes and possess characteristics which are locally distinctive only, are of low to medium importance and rarity that is local in scale and potentially can be substituted / replaced.
Negligible	Receptor is generally tolerant of physical changes and can accommodate change. The receptors do not make a significant contribution to local character or distinctiveness, and is of very low importance and rarity, are not designated, and are easily substituted / replaced.

Determining the Magnitude of Change

14.5.8 The magnitude of change will be considered as the change experienced from the baseline conditions at the sensitive receptor and has been considered on a scale of large, medium, small or negligible.

14.5.9 The magnitude of an effect is typically defined by four factors:

- The spatial extent over which the impact would occur;
- The temporal duration of the impact;
- Whether the impact is reversible and over what timeframe; and
- The timing and frequency of the impact.

14.5.10 In order to help define impact magnitude, the criteria presented in the table below will be adopted for the purposes of the EIA.

Table 14.3 Defining Magnitude of Change

Magnitude of Change	Details
Large	Adverse: Significant loss and/or damage of the resource resulting in a permanent negative effect. Beneficial: Significant improvement to the quality and/or resilience of the resource.
Medium	Adverse: Significant loss of resource or damage to key characteristics, features or elements. Beneficial: Improvement to the quality and/or resilience of the resource or key defining characteristics.
Small	Adverse: Minor loss or alteration of resource or key characteristics with a measurable change in attributes, quality or vulnerability. Beneficial: Minor improvement of resource or key characteristics, features or elements.
Negligible	Adverse: Very minor, temporary or intermittent loss of resource or alteration to key characteristics. Short term or reversible impacts.

Magnitude of Change	Details
	Beneficial: Very minor improvement to the receptor or key characteristics.

14.6 References

Statutory Instruments 30 November 2017 No. 1012 The Conservation of Habitats and Species Regulations 2017. Online at http://www.legislation.gov.uk/uksi/2017/1012/contents/made

The Wildlife and Countryside Act 1981 (as amended, principally by the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006). Online at http://www.legislation.gov.uk/ukpga/1981/69

Section 40 of the NERC Act 2006. Duty to conserve biodiversity. Online at http://www.legislation.gov.uk/ukpga/2006/16/section/40

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester

British Standards Institute (2013) BS 42020 – Biodiversity – Code of Practice for Planning and Development

15 Topics Not Included in the EIA Scope

15.1 Introduction

15.1.1 The ES should be focused, documenting only the assessment of likely significant environmental effects, both positive and negative. Those effects which are not likely to be significant should not be included in the ES and should be scoped out of the EIA. This is clearly set out in Planning Practise Guidance on EIA.

15.1.2 The following section sets out those topics that are not considered be significant in EIA terms and are therefore not proposed to be included in the EIA, and the rationale for scoping these topics out of the EIA is provided below. Where specific topics are proposed be addressed separately in standalone non-EIA assessments, or in other chapters of the ES, this is noted.

15.2 Socioeconomics

Potential Effects

15.2.1 The Proposed Development would provide employment opportunities during the construction phase which would result in economic benefits to the local economy. Furthermore, workers in the area can be expected to spend money locally on hotels and sustenance which will result in secondary indirect economic benefits.

15.2.2 During operation, the Proposed Development will provide new residential properties, which accords with the vision for the Site in the South West Rugby Allocation and makes an important contribution to the sustainable economic growth of the Borough, as set out in the Local Plan.

15.2.3 In terms of adverse effects, the Proposed Development will result in the permanent loss of some agricultural activity at the Site.

15.2.4 Overall, during construction the Proposed Development will result in Minor Positive Direct and Indirect economics effects, which are Temporary in nature. During operation, effects are Minor Positive and Permanent - as the Proposed Development will play an important role in providing housing in accordance with local and national planning policy.

15.2.5 Economic effects associated with the loss of agricultural activity are considered Negligible.

Proposed Approach

15.2.6 Based on the above, it is not considered that socio-economic effects associated with the Proposed Development would be significant in EIA terms, either on their own or cumulatively with other committed development.

15.2.7 No specific socio-economic assessment is required to support the outline planning application, however, the Planning Statement will set out the implications of the Proposed development in terms of its social and economic effects. These include its contribution to meeting identified housing need in the Borough, in accordance with applicable local and national planning policy.

15.3 Human Health

Potential Effects

15.3.1 Potential risks to human health may occur during the construction phase, principally in terms of effects associated emissions from construction vehicles and noise and vibration from construction activities. Any effects would be Direct and Temporary. With the implementation of standard industry controls and best practise constriction measures (set out in a Construction

Management Plan which could be secured by standard planning conditions) effects are considered Minor Negative, Temporary, and not significant

15.3.2 Risks to human health during operation may result principally from effects related to air quality, noise and contamination. Further to this, health and wellbeing may be affected where developments by their provision, or not, of adequate services, amenities and a sense of community that supports healthy lives.

Proposed Approach

15.3.3 Likely significant effects during construction and operation related to air quality, noise and vibration and from potential unforeseen contamination will be addressed within the relevant technical ES chapters, which will consider effects on sensitive human receptors. Where potentially significant effects are anticipated, appropriate mitigation measures will be proposed to reduce effects to a level where they are not significant and meet the relevant national and local guidance and policy.

15.3.4 It is therefore considered that a separate health assessment is not required within a specific chapter of ES. A Health Impact Assessment (HIA) Screening report will be prepared to support the outline planning application in order to demonstrate that the potential impacts of the Proposed Development on health and wellbeing accord with the requirements of Local Plan Policy HS2.

15.4 Sustainability

Potential Effects

15.4.1 It is considered that sustainability, as an environmental topic, does not require specific assessment within the ES and is not proposed to form part of the scope of the EIA. Topics with relevance to the creation of sustainable development, such as sustainable transport and active travel and the provision of amenity space and biodiversity net gain, will be addressed as appropriate through technical assessments and associated ES chapters of other environmental topics.

Proposed Approach

15.4.2 A Sustainability Statement will be submitted as part of the outline planning application. The initial results of this exercise will be used to inform the masterplan for the Proposed Development and the report will outline measures which may be included at the detailed design stage. Measures include those to reduce the energy demand of the development and utilise resources efficiently and effectively during construction and operation.

15.4.3 This statement will utilise guidance provided within RBC's Sustainable Design and Construction Supplementary Planning Document (2012) and identify relevant targets for the Proposed Development.

15.5 Climate Change

Potential Effects

15.5.1 Regulation 4(2)(c) of the 2017 EIA Regulations requires significant effects on climate to be considered, as appropriate, within the EIA process. In addition, Schedule 4 to the 2017 EIA Regulations requires likely significant effects resulting from "*the impact of the project on climate…and the vulnerability of the project to climate change"* to be addressed within an ES.

15.5.2 New development has the potential to both impact the climate (in terms of greenhouse gas emissions), and to be impacted by the climate (through impacts relevant to adaption). With regards to the impact of the Proposed Development on climate change, it is acknowledged that the construction activities would utilise energy intensive materials (e.g. concrete and

metals) as well as fossil fuels for construction plant / vehicles. In addition, once occupied the Proposed Development would import electricity and gas from the national grid for commercial consumption.

15.5.3 However, the scale of the development is limited in the context of the residential sector and the local administrative area and (drawing upon the Institute of Environmental Management and Assessment's Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance, 2017) such activities, during construction and operation, will not have a significant effect on the climate.

Proposed Approach

15.5.4 With regards to the vulnerability of the Proposed Development to climate change, potential climate related flood risk will be considered within the Flood Risk Assessment and the Flood Risk and Drainage ES chapter. In accordance with planning policy, suitable mitigation will be incorporated into the Proposed Development to ensure that the Proposed Development is not at a significant risk of flooding, allowing for the impact of climate change.

15.5.5 As a result, the Proposed Development is not considered to have significant effects on the climate or to be significantly affected by climate change. It is therefore proposed to scope climate change out of the EIA.

15.6 Materials and Waste

Potential Effects

15.6.1 The consumption of natural resources in the form of land and soil is inevitable for such a development, however, given the nature of the Proposed Development, materials required for its construction are unlikely to be particularly scarce or environmentally sensitive, nor is the Proposed Development likely to result in materials becoming scarce.

15.6.2 Consideration will be given throughout the design process to the specification of suitable materials, including their sustainability and environmental implications, to support an environmentally sensitive and high-quality development.

15.6.3 The construction of the Proposed Development will use small quantities of energy intensive resources, including fossil fuels to power mechanical excavators and other machinery. The construction phase will also utilise land and construction materials including bricks, tiles, cement, concrete, timber, asphalt, piping, cladding, etc.). Soil (reused from onsite resources wherever practicable) and seeded grass or turf will also be used for landscaping purposes.

15.6.4 Waste generation during the construction phase is likely to result from the construction of the new buildings. Waste management will be considered carefully throughout the design and construction of the Proposed development to ensure compliance with legislation and to minimise costs associated with waste disposal. The volume of waste likely to be generated by the development is relatively limited and will not significantly affect the capacity of local waste infrastructure. Construction waste expected to be generated by the Proposed development primarily includes:

- Normal non-hazardous construction materials such as off-cuts of timber, bricks, wire, fibreglass, cleaning cloths, paper, materials packaging and similar materials.

15.6.5 During the operational phase, electricity, gas, and water resources will also be used as required to heat and power dwellings. During the operation of the development, waste (including recyclables) generated by dwellings will be managed by the local waste authority. The wastes generated by the Proposed Development, as an allocated site in the Local Plan, should not significantly affect the capacity of or pressure on local waste infrastructure.

Proposed Approach

15.6.6 Where possible, and subject to geotechnical testing, any material generated by excavation of building / structural foundations will be expected to be re-used on site. Excavated material will (depending on type) be used to backfill excavations and for site re-profiling purposes where appropriate.

15.6.7 The Proposed Development would generate waste both during construction and operation. While it would be aimed to reduce the volumes of waste generated, arising's would be recycled where possible in accordance with the Waste Hierarchy.

15.6.8 It is therefore anticipated that there will be no significant effects in relation to the use of natural resources and production of waste.

15.7 Agricultural Land

Potential Effects

15.7.1 Agricultural Land Classification (ALC) provides a method for assessing the quality of farmland, enabling informed choices to be made about its future use. A desktop survey of the Natural England ALC Map for the West Midlands has identified that the Site is mostly comprised of Grade 3 (Good to Moderate) land which is broadly typical of the agricultural land quality in the local area, and the wider South West Rugby allocation.

15.7.2 Surveys undertaken for Cawston Farm Phase I residential application (R18/0995) extended into the Site and identified a mix of Grade 3a and Grade 3b land with a small parcel of Grade 2 adjacent to Station Farm Cottage to the south. The Proposed Development will result in the loss of approximately 12 ha of agricultural land.

15.7.3 RBC considered ALC when preparing the Local Plan and during the creation of the SPD for the South West Rugby allocation, proceeding with the allocation of circa. 390 hectares of land (including the Site) for development. As such, a decision has already been taken on the future use of the Site and the relative significance of the loss of BMV land has already been assessed by RBC, and confirmed to be acceptable. On this basis, the residual effect of the Proposed Development on agricultural land is regarded as Minor Negative and therefore not significant.

15.7.4 It is also important to consider the effect of the Proposed Development on soil resources. Of principal importance is their potential to provide ecosystem services and support green infrastructure and landscaping post-development, which could be adversely affected by construction activities without appropriate mitigation measures in place.

15.7.5 During construction, mitigation for the loss or damage of soil resources at the Site will be addressed through the adoption of a Soil Management Plan. This will prepared by a suitably qualified practitioner in accordance with the principles outlined in the 'Construction Code of Practice for Sustainable Use of Soils on Construction Sites' and will detail:

- The depth and method of topsoil stripping and stockpiling;
- An identification of landscaping topsoil requirements and assessment of suitability and availability of on-site resources; and
- Suitable means of subsoil protection from compaction damage during construction and remedial measures (such as ripping/subsoiling) to remove any damage.

15.7.6 The Soil Management Plan could be secured by way of planning condition and be provided as part of the wider Construction Environmental Management Plan (CEMP). With this in place, the residual effect of the Proposed Development on soil resources is considered Negligible and not significant.

Proposed Approach

15.7.7 The planning status of the Site and the fact that a decision on its future use has already been taken by RBC should be recognised in assessing the loss of agricultural land, which has been pre-considered and found to be acceptable.

15.7.8 The effects on soils can be mitigated to an acceptable level through standard planning conditions and best practise measures during construction.

15.7.9 Consequently, the effect of the Proposed Development on agricultural land and / or soils is considered not to be significant in EIA terms and it is proposed that agricultural land be scoped out of the ES.

16 Summary and Next Steps

16.1 Summary

16.1.1 This Scoping Report has been prepared to provide an overview of the likely significant environmental effects associated with the Proposed Development. It provides information regarding the Proposed Development, sets out the intended EIA scope and methodologies for the assessment of likely significant environmental effects, and outlines the proposed content of the ES.

16.1.2 The aim of the EIA is to identify likely significant environmental effects, provide mitigation measures where possible, and take advantage of opportunities for environmental enhancement.

16.2 The Environmental Statement

16.2.1 The outcome of the EIA process is the production of an ES. The ES will be prepared in compliance with the EIA Regulations, and will:

- Describe the Proposed Development;
- Outline the reasonable alternatives considered;
- Describe the baseline environment;
- Describe the likely significant effects;
- Describe the measures to mitigate adverse effects; and
- Include a non-technical summary.

16.3 Next Steps

16.3.1 The Scoping Report has proposed that the following topics are scoped into the EIA:

- Traffic and Access;
- Noise and Vibration;
- Air Quality;
- Ground Conditions;
- Flood Risk and Drainage;
- Cultural Heritage;
- Landscape and Visual;
- Biodiversity; and
- Cumulative Effects.

16.3.2 The Scoping Report has proposed that the following topics are scoped out of the EIA:

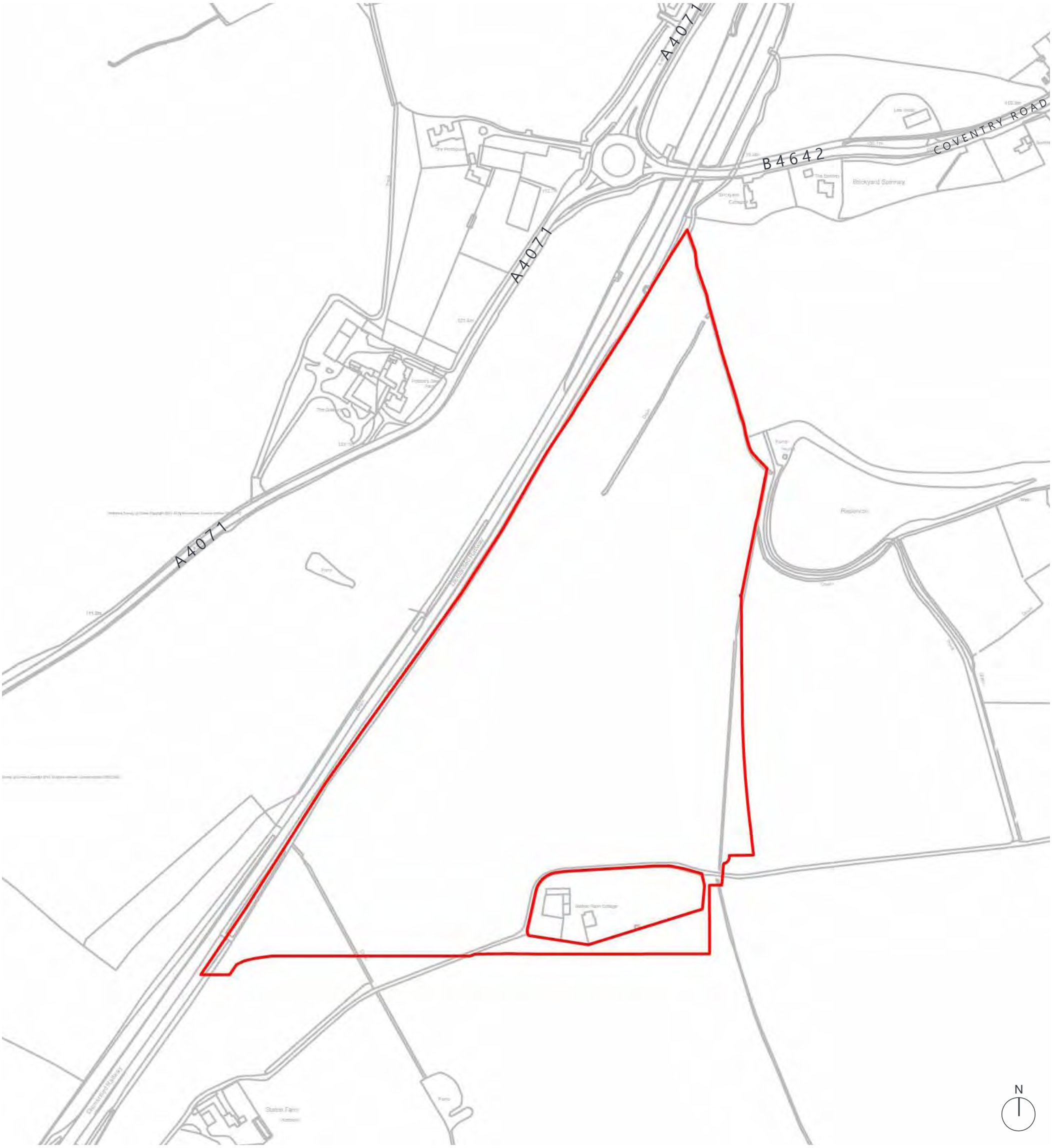
- Socio-economics;

- Human Health;
- Sustainability;
- Climate Change;
- Materials and Waste;
- Risks of Accidents and Disasters;
- Agricultural Land.

16.3.3 The next steps in the EIA process are as follows:

- Receipt of the Scoping Opinion from RBC (w/c 7th March 2022); and
- Submission of the ES with the planning application (March 2022).

Appendix A Preliminary Site Location Plan



Red Line Boundary

Revisions	
Rev	Description

N

Cawston Farm, Phase II

on behalf of Tritax Symmetry

drawing no.	01	drawing	Red Line Plan		
revision	A	scale	NTS	job no.	-
drawn by	ZP	checked by	CM	date	01 February 2022

Urban Design Studio | savills

Appendix B Extracts from the EIA Regulations

B.1 Regulation 18 extracted from the EIA Regulations

"1. Subject to regulation 9, an EIA application must be accompanied by an environmental statement for the purposes of these Regulations.

2. A subsequent application is to be taken to be accompanied by an environmental statement for the purpose of paragraph (1) where the application for planning permission to which it relates was accompanied by a statement referred to by the applicant as an environmental statement for the purposes of these Regulations, but this is subject to regulation 9.

3. An environmental statement is a statement which includes at least—

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

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

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

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

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

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

4. An environmental statement must—

(a) where a scoping opinion or direction has been issued in accordance with regulation 15 or 16, be based on the most recent scoping opinion or direction issued (so far as the proposed development remains materially the same as the proposed development which was subject to that opinion or direction);

(b) include the information reasonably required for reaching a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment; and

(c) be prepared, taking into account the results of any relevant UK environmental assessment, which are reasonably available to the person preparing the environmental statement, with a view to avoiding duplication of assessment.

5. In order to ensure the completeness and quality of the environmental statement—

(a) the developer must ensure that the environmental statement is prepared by competent experts; and

(b) the environmental statement must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts."

B.2 Schedule 4 of the EIA Regulations

"1. A description of the development, including in particular:

(a) a description of the location of the development;

(b) a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;

(c) a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; and

(d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases.

2. A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

3. A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.

4. A description of the factors specified in regulation 4(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.

5. A description of the likely significant effects of the development on the environment resulting from, inter alia:

(a) the construction and existence of the development, including, where relevant, demolition works;

(b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;

(c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;

(d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);

(e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;

(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;

(g) the technologies and the substances used.

The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and

long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project, including in particular those established under Council Directive 92/43/EEC(1) and Directive 2009/147/EC(2).

6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.

7. A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.

8. A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU(3) of the European Parliament and of the Council or Council Directive 2009/71/Euratom(4) or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.

9. A non-technical summary of the information provided under paragraphs 1 to 8.

10. A reference list detailing the sources used for the descriptions and assessments included in the environmental statement."

Appendix C Approved Development

No.	Site name	Planning Ref.	Development Description	Status	Distance from Site
1	Land South of Coventry Road, Rugby	R18/0995	Residential development of up to 275 dwellings (Use Class C3); provision of open space, including means of access into the site (not internal roads) and associated works, with all other matters (relating to appearance, landscaping, scale and layout) reserved. Demolition of buildings referenced A-K and 6 silos.	Under determination	Adjascent to east
2	South Eastern part of zone D – Land north of Coventry Road, Coventry Road, Thurlaston	R21/0829	Provision of an energy centre	Under determination	Adjascent to south
3	Eastern Part of Zone D – Land north of Coventry Road, Coventry Road, Thurlaston	R21/0790	Erection of a building within Class B8 with ancillary office; ancillary structures; with associated access roads; servicing yard; car parking and cycle shelter and compound; external plant; acoustic fencing; security fencing. Approval of reserved matters (access, appearance, landscaping, layout and scale) relating to R16/2569	Under determination	Adjascent to south
4	Land north of Coventry Road, Coventry	R21/1071	Extended landscape mound to that approved under planning permission R20/1026 on northern boundary of Zone D of parameters plan. (Alternative scheme	Under determination	Adjsacent to south
5	Land North of Tritax Site - Land North of Coventry Road, Coventry Road, Thurlaston	R21/0823	Extended landscape mound to that approved under planning permission R20/1026 on nothern bounday of Zone D Parameters Plan, with 3.5m high accoustic fence.	Approved 13.1.22	Adjascent to south
6	Zone E - and North of Coventry Road, Conventry Road, Thurlaston	R21/0789	Erection of 50,965 square metre building (GEA, floorspace) within Class B8 with ancillary office; ancillary structures; with associated access roads; servicing yard; car parking and cycle shelter and compound; external plan and access details for the continuation of the spine road north of Northampton lane; landscaped embankments with landscaping details; the provision for a noise attenuating fence on top of the embankment and security fencing. Approval of reserved matters (access, appearance, layout, landscaping and scale) relating to R16/2569.	Approved 11.11.21	Adjascent to south
7	Land South of Coventry Road and Cawston Lane, Coventry Road, Cawston, Rugby	R18/0936	Outline planning application for up to 210 dwellings, a two form entry primary school, and creation of associated vehicular access, pedestrian /cycle and emergency accesses, highway improvements to Cawston Lane, parking, landscaping, drainage features, open space and associated infrastructure (all matters reserved except vehicular access to the site).	Heard at committee - resolved to be approved subject to completion of s106	500m east
8	Units 1 and 2 Tritax Symmetry Site – Land North of Coventry Road, Thurlaston	R20/1026	Full planning application for the erection of two logistics units development comprising a total of 30,435 sqm (327,599 sq.ft.) (measured GEA) of Class B8 floorspace of which 1,817.2 sq.m (measured GIA) (19,560 sq. ft.) comprises Class E(g)(i) ancillary office floorspace (measured GIA) with associated infrastructure including lorry parking, landscaping including permanent landscaped mounds, sustainable drainage details, sprinkler tank pump houses, gas and electricity substations, temporary construction access from Coventry Road, temporary marketing suite and temporary stockpile area for additional soil disposal.	Approved 4.5.21	400m south
9	Land South of Coventry Road and North of Lime Trees Avenue	R15/1816 & R18/0262	Residential development of up to 150 dwellings including vehicular access from Coventry Road, open space, landscaping, surface water attenuation ponds, footpaths, cycleways and associated infrastructure (outline planning application to include access with appearance, landscaping, layout and scale reserved)	Approved 29.8.18	1.2km north east
11	Cawston Extension Site Coventry Road	R11/0114, R16/1780, R16/1721 & R17/1895	Outline application for residential development (up to 600 dwellings, use class C3), new accesses to Coventry Road and Trussell Way, open space, associated infrastructure and ancillary works (access not reserved).	Under construction	0.2km north
12	Land Adj Cawston House, Lime Tree Village	R16/1910	Proposed construction of 25 extra care dwellings (Class C2) and the erection of ground mounted solar panels (partial revised scheme to application 665) Site has extant permission for extant approval for a 30 bed Care Home and 12 Extra Care apartments. These were in a single large building located in the centre of the village extension.	Approved 10.17	0.8km east
13	Land North of A45/M45 Junction – symmetry park	R16/2569	Outline planning application for up to 186,500 sq m of buildings for Use Class B8 (Warehousing and Distribution), with ancillary Use Class B1(a) (Offices), land for a fire station (0.4 hectares) with site infrastructure including vehicle parking, landscaping, and sustainable drainage system. Demolition of Station Farmhouse and outbuildings. All matters reserved except means of access from A45/M45 junction up to and including the link to the crossing of the Northampton Lane right of way.	Approved 3.11.20	0.4km south
14	Dipbar Fields, Daventry Road, Dunchurch	R13/0690	Outline planning application for the development of the Site for up to 86 dwellings (Use Class C3) and associated works including means of access from the A45/M45 roundabout and an emergency access from Daventry Road. All other matters are reserved	Approved 18.7.16 RM under determination	2.7km south east
15	Land North of Ashlawn Road Ashlawn Road Rugby	R13/2102	Outline application for up to 860 dwellings, primary school, open space and green infrastructure	Under construction	2.7km east

Appendix D Proposed Viewpoint Locations

DRAFT

Site Boundary

Range Rings (at 1km intervals)

2km Detailed Study Area

National Tree Map Data

National Cycle Routes

Zone of Theoretical Visibility

South West Rugby SPD Boundary

Photoviewpoint Location

Note: ZTV has been modelled using a digital terrain model and does not account for surface features such as trees, hedgerows and built form. The extent of the ZTV is based on a proposed development height of 11m.

client

Tritax Symmetry Ltd

project title

Cawston Farm, Phase 2

drawing title

Proposed Viewpoint Locations

date	**27 JANUARY 2022**	drawn by	**BC**
drawing number	**edp6981_d001**	checked	
scale	**1:17,500 @ A3**	QA	

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Appendix E LVIA Methodology

Appendix EDP 1
Glossary

TERM AND DEFINITION
Baseline
The existing (pre-development) landscape and visual context of a study area, including landscape fabric, landscape character and existing views. The landscape baseline is not static and may be changing for various reasons. The landscape baseline can also consider such factors and describe the likely future landscape character of the landscape, without the proposed development.
Effects
A predicted change in the environmental baseline as a result of the proposed development. Effects can be positive or negative.
Field Pattern
The pattern of hedges and walls that define fields in farmed landscapes (LI/IEMA 2002).
Intervisibility
Two points on the ground or two features are described as "intervisible" when they are visible from each other.
Landscape
Landscape results from the way that different aspects of our environment (physical, social, aesthetic and perceptual) interact together and are perceived by us: • Physical elements – e.g. geology, landform, soils, flora and fauna; • Social elements – e.g. land use, enclosure patterns, and the patterns, form and scale of settlements and other built development; • Aesthetic factors – e.g. colour, form, visual texture and pattern, sounds, smells and touch; and • Perceptual factors – e.g. memories, associations, stimuli and preferences.
Landscape capacity
The degree to which a particular landscape character type or area is able to accommodate change without significant effects on its character. Capacity is likely to vary according to the type and nature of change being proposed.
Landscape character
Landscape character arises from a distinct, recognisable and consistent pattern of physical and social elements, aesthetic factors and perceptual aspects in the landscape.
Landscape character areas (LCAs)
Single unique areas that are discrete geographical areas containing one or more landscape types.
Landscape character types (LCTs)
Generic units of landscape that display a distinct, consistent and recognisable landscape character.
Landscape condition
Description of the maintenance and condition of landscape elements and the degree to which landscape elements are representative of the landscape character area.
Landscape element
A physical component (both natural and manmade) of the landscape.
Landscape fabric
The elements and features that constitute the physical components of the landscape, including ground vegetation, hedgerows, trees, shrubs, walls, fences, and vernacular structures.
Landscape units
An umbrella term for landscape character areas and landscape character types.

TERM AND DEFINITION
Landscape value
The importance or value of the landscape to society, usually based on landscape designations or policies as indicators of recognised value .
Mitigation
Measures, including any process, activity or design that will avoid, reduce, remedy or compensate for the predicted significant effects of a development on the environmental baseline.
Public access
Land with public access includes: • **Definitive rights of way** – public footpaths, bridleways, cycle routes, Byways Open to All Traffic (BOATS) and highways. Shown on Definitive Rights of Way maps held by the Local Authority. Most routes are also shown on Ordnance Survey maps; • **Permissive paths and bridleways** – routes where there is public access with the permission of the landowner. Such routes are usually closed at least one day a year to prevent establishment of a public right of way; • **Public open space** – areas designated for specified public uses, usually in the ownership of the Local Authority. Includes parks and recreation grounds. Shown on Local Development Plans; • **Beaches** – the public have permitted access to much of the foreshore (intertidal zone – between high and low tide marks) owned by the Crown Estate, and on land above high water mark owned by the Local Authority. Some beaches above high tide mark are privately owned and some beaches and foreshore have restricted access for military purposes; • **Access land** – land where public access is currently permitted with the permission of landowners. Includes land outlined in purple on the OS Explorer (1:25,000) sheets and with: o No symbol – land open to public with permission of owners; o White oak leaf in purple box – National Trust, always open; o Purple oak leaf in white box – National Trust limited access; o Tree symbols in purple box – Forestry Commission; o Single leaf in purple box – Woodland Trust; and o White “AL” in purple box – other access land. • **Open access land** – areas of mountains, moor, heath, down, common land and coastal foreshore that have been designated under Section 2 of the Countryside and Rights of Way Act 2000. The right of access is for walkers only and does not extend to cycling, horse riding or driving a vehicle, nor does the right of access apply to developed land, gardens or cultivated land. Under the CRoW Act 2000, there was a process of consultation that allowed the right of appeal for those with a legal interest in the land, and for sensitive ecological or archaeological sites to be excluded. Conclusive maps showing the areas designated as open access land (Registered Common Land and Open Country) are now available from Natural England (in England) and the Countryside Council for Wales (in Wales).
Viewing distance
That distance that a viewpoint illustration should be held from the eye in order for the illustration to match the scale of the actual view when used in the field to identify the location and scale of the proposed development.
Visibility
Visibility is a measure of the distance that can be seen by the human eye at any one time. Daylight visibility will depend on several factors, including: • Atmospheric transparency (governed by the solid and liquid particles held in suspension in the atmosphere); • Degree of contrast between an object and the background against which it is observed; • Position of the sun; and • Observer’s visual acuity.

TERM AND DEFINITION
Visual receptor(s)
An individual observer or group of observers who are capable of experiencing a change in the view.
Zone of Theoretical Visibility (ZTV)
The ZTVs consider the 'bareground' situation and assume excellent visibility with no atmospheric attenuation. The ZTVs therefore represent the maximum potential, theoretical visibility i.e. the worst-case situation. In reality, other components of the landscape such as forestry, trees, buildings etc. will introduce screening effects which, coupled with the atmospheric conditions, will reduce this visibility, in some instances to a considerable extent.

Appendix EDP 2
LVIA Assessment Methodology

Introduction

A2.1 The development proposed falls within the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. This report therefore constitutes a full Landscape and Visual Impact Assessment (LVIA) of the proposed development of the site.

A2.2 The assessment methodology for assessing landscape and visual effects prepared by EDP is based on the following best practice guidance:

- Guidelines for Landscape and Visual Impact Assessment (GLVIA) – Third Edition (LI/IEMA 2013);
- An Approach to Landscape Character Assessment (Natural England 2014);
- Landscape Character Assessment – Guidance for England and Scotland (Swanick & LUC 2002) produced on behalf of the Countryside Agency and Scottish Natural Heritage; and
- Landscape Institute Technical Guidance Note (TNG) 06/19 Visual Representation of Development Proposals (17 September 2019).

A2.3 Landscape assessment is concerned with the changes in the physical landscape in terms of features/elements that may give rise to changes in the character of the landscape. Visual appraisal is concerned with the changes that arise in the composition of available views as a result of changes to the landscape, people's responses to the changes and to the overall effects on visual amenity. Changes may result in adverse (negative), beneficial (positive) or neutral effects.

A2.4 The nature of landscape and visual assessment requires both objective analysis and subjective professional judgement. Accordingly, the following assessment is based on the best practice guidance listed above, information and data analysis techniques, uses subjective professional judgement and quantifiable factors wherever possible, and is based on clearly defined terms (see Glossary, **Appendix EDP 1**).

A2.5 The characteristics of the development and the nature of landscape and visual effects arising will vary throughout the different phases of the lifecycle of the project. LVIA undertaken as part of an Environmental Impact Assessment (EIA) is required to include an assessment of effects at different stages of the life-cycle of the development, and commonly includes:

- Construction effects; and
- Operational Effects (often including Year 1 and Year 15 effects such that mitigation is considered).

A2.6 Year 1 considers the effects of the development upon completion of the construction phase. The assessment of landscape and visual effects at Year 15 takes into account any proposed mitigation measures, including structural or developmental planting. The assessment undertaken at Year 15 assumes that such proposals have the opportunity to grow and become effective. For the purposes of most LVIAs Year 15 effects are also taken to be the 'residual effects' of the development. Residual effects are those which are likely to remain on completion of the development and are to be given the greatest weight in planning terms.

A2.7 In some cases, the scope of the EIA also requires the assessment of effects during decommissioning and restoration; an assessment of these effects is included in the LVIA when requested or required.

A2.8 The need for the consideration of cumulative effects is agreed as part of the EIA scoping process. Cumulative effects are considered in further detail below.

Current Guidance and the Assessment Process

A2.9 The GLVIA presents guidelines for undertaking the assessment process using a non-prescriptive methodology. As stated at paragraph 1.20 of the GLVIA:

"The guidance concentrates on principles while also seeking to steer specific approaches where there is a general consensus on methods and techniques. It is not intended to be prescriptive, in that it does not follow a detailed 'recipe' that can be followed in every situation. It is always the primary responsibility of any landscape professional carrying out an assessment to ensure that the approach and methodology adopted are appropriate to the particular circumstances."

A2.10 The summary following paragraph 3.45 of the GLVIA sets out the advice on good practice to be followed in undertaking the assessment and includes the following points:

- *"Assessing the significance of landscape and visual effects is a matter of judgement. It is vital that the basis of such judgements is transparent and understandable, so that the underlying assumptions and reasoning can be examined by others;*

- *A step-by step approach should be taken to make judgements of significance, combining judgements about the nature of the receptor, summarised as its sensitivity, and the nature of the effect, summarised as its magnitude;*

- *The contribution of judgements about the individual criteria contributing to the sensitivity and magnitude should be clear, and the approach to combining all the judgements to reach an overall judgement of significance should be transparent as possible;*

- *LVIAs should always distinguish clearly between what are considered to be the significant and non-significant effects; and*

- *To ensure that the reasoning behind the judgements is clear there should be more emphasis on narrative text describing the landscape and visual effects and the judgements made about their significance, with tables and matrices used to support and summarise the descriptive text, not to replace it. The key issues must be made clear."*

A2.11 This assessment is considered to comply with the general principles of good practice in the GLVIA 3rd edition as set out above.

A2.12 The assessment involves information review, consultations, fieldwork observations and photography, computer-based data processing and analysis, and subjective professional judgement. It is an iterative process, and involves up to nine main stages, and is tailored in terms of its proportionality to the size and scale of the development proposed, and its location:

- **Stage 1**: **Review the development proposals:** to understand the nature of the development proposals in respect of potential landscape and visual effects to inform the extent of the study area and the baseline assessment;

- **Stage 2**: **Landscape baseline assessment:** an analysis of the characterisation and evaluation of the existing landscape baseline, in respect of its value. This analysis is aided where possible by available published landscape character assessment;

- **Stage 3**: **Visual baseline assessment:** establish the zone of visual influence of the proposals including, where appropriate, the use of computer-generated zones of theoretical visibility, based on topographical data only, and through fieldwork analysis. This establishes the locations where views of the development may be available. Fieldwork and data trawl information review to establish the types and locations of receptors within this theoretical zone;

- **Stage 4**: **Viewpoint selection:** selection of viewpoints to represent the various receptor types in the study area. Locations are agreed with the Local Planning Authority (where practical) and any other relevant statutory consultees, where possible;

- **Stage 5**: **Mitigation:** commentary on the input provided into the iterative design process, where appropriate, to avoid, reduce or compensate for potential effects on the landscape and visual receptors identified;
- **Stage 6**: **Landscape assessment:** an assessment to identify the potential residual effects on landscape fabric, the character of the landscape units and the special characteristics and purposes of any landscape designations;

- **Stage 7**: **Visual assessment:** an assessment of the potential residual effects upon visual amenity at the selected visual receptor locations identified within the study area;

- **Stage 8**: **Judgement of landscape capacity:** a discussion about the ability of the landscape to accommodate the changes proposed; and

- **Stage 9**: **Cumulative effects assessment:** the assessment of the development proposals in conjunction with other known proposals which have not been implemented but may have planning permission, are awaiting determination or other proposals identified as requiring inclusion in the cumulative effects assessment.

A2.13 Each of these key stages is described in more detail below, with reference to the GLVIA 3rd Edition.

Stage 1: Review of Development Proposals and Defining the Study Area(s)

A2.14 Study areas are defined in accordance with the EIA Regulations 2017, which require an assessment to be made which provides *'a description of the aspects of the environment likely to be* significantly *affected by the development'*[1]. Guidance contained within the GLVIA 3rd edition is also pertinent, with this document advising that the study area for landscape and visual assessment should cover the following:

Landscape (paragraph 5.2 of the GLVIA)

"Scoping should also identify the area of landscape that needs to be covered in assessing landscape effects. This should be agreed with the competent authority, but it should also be recognised that it may change as the work progresses, for example as a result of fieldwork, or changes to a proposal. The study area should include the site itself and the full extent of the wider landscape around it which the proposed development may influence in a significant manner."

Visual (paragraph 6.2 of the GLVIA)

"Scoping should identify the area that needs to be covered in assessing visual effects, the range of people who may be affected by these effects and the related viewpoints in the study area that will need to be examined. The study area should be agreed with the competent authority at the outset and should consider the area from which the proposed development will potentially be visible. The emphasis must be on a reasonable approach which is proportional to the scale and nature of the proposed development. At the scoping stage the study area will only be defined in a preliminary way and is likely to be modified as more detailed analysis is carried out, in discussion with the competent authority."

A2.15 It is therefore imperative that an understanding of the development proposed, its scale, character and geographical extents is required to be able to define the study area.

Stages 2 and 3: Establishing the Landscape and Visual Baseline

A2.16 The purpose of baseline studies is to record and analyse the existing landscape features, characteristics, the way in which the landscape is experienced and the value or importance

[1] Schedule 4, Part 1, clause 3, DETR 2011

of the landscape and visual resource in the study area. The third edition of the GLVIA sets out guidance in relation the landscape baseline at paragraph 5.3:

"Baseline studies for assessing landscape effects require a mix of desk study and field work to identify and record the character of the landscape and the elements, features and aesthetic and perceptual factors which contribute to it. They should also deal with the value attached to the landscape (see paragraph 5.19). The methods used should be appropriate to the context into which the development proposal will be introduced and in line with current guidance and terminology."

A2.17 As set out above, it is also a requirement of the baseline stage to establish the value of the landscape receptors identified:

"As part of the baseline description the value of the potentially affected landscape should be established. This means the relative value that is attached to different landscapes by society, bearing in mind that a landscape may be valued by different stakeholders for a whole variety of reasons. Considering value at the baseline stage will inform later judgements about the significance of effects. Value can apply to areas of landscape as a whole, or to the individual elements, features and aesthetic or perceptual dimensions which contribute to the character of the landscape…"

Stage 4: Viewpoint Analysis

A2.18 To aid the assessment of landscape and in particular visual, receptors, a number of representative viewpoints have been visited, photographed and assessed. These have been identified following analysis of the potential visual influence of the proposals, site survey and liaison with the local authority. The final selection of viewpoints have been selected taking account of the following:

- The accessibility to the public;
- The potential number and sensitivity of viewers who may be affected;
- The viewing direction and/or distance;
- The nature of the viewing experience;
- The type and extent of view; and
- The potential for cumulative views.

A2.19 The viewpoints selected include a variety of public viewpoints (with public access), transport routes, areas of landscape designation and landscape character areas. In no instance (unless specifically stated) have private views been included.

A2.20 The Landscape Institutes (LI) guidance note (TGN 06-19) recommends that practitioners should justify their approach and utilise a methodology appropriate to the project. A good

understanding of the options and early engagement with regulatory authorities can ensure that visualisations are prepared to an appropriate standard. The use of full frame sensor Digital Single-Lens Reflex (SLR) cameras is recommended for all visualisation types. The use of fixed focal length lenses of 50mm, 35mm/28mm, is also required to meet the guidance. Full-Frame Sensor (FFS) 50mm lenses should be used wherever possible. A good quality tripod is also recommended, together with panoramic head and leveller if Type 4 verified panoramic visualisations are to be prepared.

A2.21 The guidance defines the preparation of different types of technical visualisations in a table, which are prepared as part of different planning applications. The guidance defines four main types of visualisation, and although there can be some overlap, these are:

- Type 1: Annotated Viewpoint Photographs (LVAs and LVIAs etc);
- Type 2: 3D Wireline / 3D Model (including Dynamic Visualisations; Augmented and Virtual Reality);
- Type 3: Photomontage / Photo-wire (not survey scale verifiable); and
- Type 4: Photomontage / Photo-wire (survey/scale verifiable).

A2.22 Where Type 3 and Type 4 photomontages or 'verified' views are presented in the assessment, the methodology for their production is provided separately.

Stage 5: Mitigation

A2.23 Mitigation measures seek to avoid, reduce or compensate for any adverse landscape or visual effects resulting from the development proposals. Mitigation measures are considered under two categories:

- Primary, or embedded, mitigation measures are those that are intrinsically part of the development proposals, such as the height, scale, massing, orientation and location of development, the nature of materials used or retention of existing 'inherent' landscape features; and
- Secondary, or reduction, mitigation measures are designed to address remaining adverse effects (both significant and non-significant effects), and include proposals such as areas of new planting to filter views towards the development or new hedgerows to compensate for those lost.

A2.24 Recommendations for mitigation and enhancement measures are fed into the design process following the baseline studies and the identification of landscape and visual receptors. This early stage involvement of the landscape practitioner ensures that the proposals which come forward have taken account of the most important landscape and/or visual constraints within the wider landscape.

A2.25 Enhancement is a separate issue to mitigation and involves the identification of measures which can positively contribute to the landscape or to visual amenity. For example, restoring or reconstructing local landscape character, improving the management of new and existing landscape fabric or the removal of landscape detractors.

Stage 6: Landscape Assessment

A2.26 The assessment of effects on landscape draws on the description of the development, the landscape context and the visibility and viewpoint analysis, and considers whether the proposed development is likely to have a significant beneficial or adverse effect on landscape fabric, the character of the landscape units and the special characteristics of any landscape designations in the study area such that their ability to fulfil their purposes is likely to be compromised.

Effects on Landscape Fabric

A2.27 Landscape fabric is composed of the physical components of the landscape. Developments can bring about both direct and indirect effects on landscape fabric. Direct effects occur where changes to the fabric of the landscape arise as the result of physical disturbance; for example, the loss of landscape elements such as hedgerows, walls and trees. Indirect effects are consequential changes that are separated from the source of the change in a temporal or spatial manner; for example changes in vegetation downstream as the result of modifications to surface water patterns in a catchment area.

A2.28 The assessment of effects on landscape fabric considers the existing landscape fabric of the site and the predicted losses and gains to landscape fabric as a result of the development, and makes a judgement as to whether there is likely to be a significant beneficial, adverse or neutral change to landscape fabric.

A2.29 Significant beneficial effects on landscape fabric could occur where important/mature/diverse/distinctive components, which had previously been lost or degraded as the result of agricultural operations or other development, will be added, reinstated or improved. Significant adverse effects on landscape fabric could occur where important/mature/diverse/distinctive components will be permanently lost and the effect cannot be adequately mitigated.

Effects on Landscape Character

A2.30 In order to reach an understanding of the effects of development on landscape character, it is necessary to consider the different aspects of the landscape, and how these interact to create landscape character. These aspects are as follows:

- **Elements**: The individual elements that make up the landscape, including prominent or eye-catching features such as hills, valleys, woods, trees and hedges, ponds, buildings and roads. They are generally quantifiable and can be easily described;
- **Characteristics**: Elements or combinations of elements that make up a particular contribution to the character of an area, including experiential characteristics such as tranquillity and wildness; and
- **Character**: The distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human

settlement. It creates the particular sense of place of different areas of the landscape. Character is identified through the process of characterisation, which evaluates the landscape as a resource in its own right and identifies geographical areas of similar character.

Assessment of Landscape Effects

A2.31 The assessment of effects includes a combination of objective and subjective judgements. The development proposals are assessed against the baseline information to enable an evaluation of the effects that would occur upon the existing landscape resource.

A2.32 Typically, the landscape receptors identified in the assessment are likely to include:

- Site landscape fabric;
- The landscape character of the site and local context through an assessment of the effects of the proposals on the key characteristics of the landscape identified in the baseline assessment and site visit;
- The 'host' character of the landscape character area/unit in the published landscape character assessment;
- Non-host' landscape character areas surrounding the host character area and may be affected by the proposals (where relevant); and
- The character of any local or national landscape designations (where relevant) through an assessment of the likely effects on the published key characteristics or special qualities.

A2.33 The landscape effects are defined as the result of the interaction between the sensitivity of the landscape receptor and the magnitude of change predicted for that receptor.

Sensitivity of the Landscape Resource

A2.34 A number of factors influence professional judgement when assessing the degree to which a particular landscape receptor can accommodate change arising from a particular development. Sensitivity is made up of judgements about the value attached to the receptor determined at baseline stage (paragraph 5.19 of the GLVIA) and the susceptibility of the receptor to the type of change arising from the development proposal.

A2.35 A location may have different levels of sensitivity according to the types of receptors at that location and any one receptor type may be accorded different levels of sensitivity at different locations e.g. due to differences in value or susceptibility to change.

Susceptibility to Change for Landscape Receptors

A2.36 The susceptibility of a landscape receptor relates to the ability of the receptor to accommodate the proposed development without undue consequences for the

maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies as defined within the Local Development Plan or landscape character assessments.

A2.37 It is important when considering susceptibility that heed is taken of the type of development proposed i.e. intrinsic or inherent sensitivity (such as is commonly indicated within published sensitivity in capacity assessments) cannot reliably inform the identification of susceptibility as they are carried out without any reference to the particular type of development proposed. Judgements about the susceptibility of landscape receptors within this assessment are provided on a verbal scale as indicated in **Table EDP A2.1**.

Table EDP A2.1: Susceptibility to Change Criteria for Landscape Receptors

Category	Landscape Receptor Criteria
Very High	Strong/distinctive landscape elements/aesthetic/perceptual aspects; absence of landscape detractors; landscape receptors in excellent condition. Landscapes with clear and widely recognised cultural value. Landscapes with a high level of tranquillity.
High	Many distinctive landscape elements/aesthetic/perceptual aspects; very few landscape detractors; landscape receptors in good condition. The landscape has a low capacity for change as a result of potential changes to defining character.
Medium	Some distinctive landscape elements/aesthetic/perceptual aspects; few landscape detractors; landscape receptors in fair condition. Landscape is able to accommodate some change as a result.
Low	Few distinctive landscape elements/aesthetic/perceptual aspects; presence of landscape detractors; landscape receptors in poor condition. Landscape is able to accommodate large amounts of change without changing these characteristics fundamentally.
Very Low	Absence of distinctive landscape elements/aesthetic/perceptual aspects; presence of many landscape detractors; landscape receptors in very poor condition. As such landscape is able to accommodate considerable change.

Value of Landscape Receptors

A2.38 The value attached to the landscape receptors within the assessment will cover the following:

- The value of the landscape character types or areas that might be affected by the development, based upon review of any designation s at both national and local levels, and, where there are no designations, judgements based on criteria that can be used to establish landscape value; and

- The value of individual contributors to landscape character, especially the key characteristics, which may include individual elements of the landscape, in particular landscape features, notable aesthetic, perceptual or experiential qualities, and combinations of these contributors.

A2.39 The potential information/designations that will contribute to understanding value is summarised below, with reference to paragraph 5.20 of the GLVIA:

- Statutory designations e.g. National Parks, National Scenic Areas, Areas of Outstanding Natural Beauty;
- Heritage Coasts;
- Conservation areas, listed buildings, Tree Preservation Orders, important hedgerows, scheduled monuments, historic gardens and battlefields;
- Local landscape designations in Development Plans;
- Local/community interests e.g. local green spaces, village greens and allotments; and
- Art and literature including e.g. tourism literature or specially promoted views.

A2.40 In the absence of existing evidence to indicate value, it is advised that new survey and analysis may be needed to establish landscape value. The range of factors that can help in the identification of valued landscape are listed at paragraph 5.28 of the GLVIA and summarised below and defined in the glossary:

- Landscape condition/quality;
- Scenic quality;
- Rarity;
- Representativeness;
- Conservation Interests;
- Recreational value;
- Perceptual aspects e.g. wildness and/or tranquillity; and
- Associations.

A2.41 **Table EDP A2.2** provides an indication of the criteria by which the value of a landscape receptor is judged within this assessment.

Table EDP A2.2: Landscape Value Criteria for Landscape Receptors

Category	Landscape Receptor Criteria
Very High	Nationally/Internationally designated/valued countryside and landscape features; strong/distinctive landscape characteristics; absence of landscape detractors.
High	Locally designated/valued countryside (e.g. Areas of High Landscape Value, Regional Scenic Areas) and landscape features; many distinctive landscape characteristics; very few landscape detractors.
Medium	Undesignated countryside and landscape features; some distinctive landscape characteristics; few landscape detractors.

Category	Landscape Receptor Criteria
Low	Undesignated countryside and landscape features; few distinctive landscape characteristics; presence of landscape detractors.
Very Low	Undesignated countryside and landscape features; absence of distinctive landscape characteristics; despoiled / degraded by the presence of many landscape detractors.

A2.42 It is important to note that there can be complex relationships between landscape value and susceptibility to change, which are particularly important when considering development proposals near to designated landscapes. For example, an internationally, nationally or locally designated landscape does not automatically, or by definition, have high susceptibility to all types of change. Designated landscapes, by virtue of the characteristics of the landscape and/or the nature of the proposal, can have a low susceptibility to change.

Defining Overall Sensitivity

A2.43 The overall sensitivity of any landscape receptor is determined by combining judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape as set out at paragraph 5.39 of GLVIA 3rd Edition (2013). For example a high susceptibility to change and a low value may result in a medium overall sensitivity. A degree of professional judgement will always apply in arriving at the overall sensitivity for landscape receptors, and a five point word scale is used to define this – Very High, High, Medium, Low and Very Low – this reflecting the definition used for value and susceptibility individually.

Magnitude of Change

A2.44 The magnitude of change is determined through a range of considerations particular to each effect receptor and effect. In line with the GLVIA, the three main attributes considered are:

- Scale of Change
- Geographical Extent; and
- Duration and Reversibility.

A2.45 **Scale of Change:** The considerations set out at paragraph 5.49 of the GLVIA are summarised as follows:

- The extent of any existing landscape fabric elements lost including the proportion of the total extent that this represents and the contribution of that element to the character of the landscape;
- The degree to which aesthetic or perceptual aspects of the landscape are altered by removal of features e.g. hedgerows and/or the introduction of new features e.g. buildings; and

- Consideration of whether the effect changes the key characteristics of the landscape which are critical to its distinctive character.

A2.46 **Table EDP A2.3** provides an indication of the criteria by which the size/scale of change at a landscape receptor is judged within this assessment.

Table EDP A2.3: Scale of Change Criteria for Landscape Receptors

Category	Landscape Receptor Criteria
Very High	Total loss of or major alteration to key elements/features/characteristics of the baseline condition. Addition of elements which strongly conflict with the key characteristics of the existing landscape.
High	Notable loss or alteration to one or more key elements/features/characteristics of the baseline condition. Addition of elements that are prominent and may conflict with the key characteristics of the existing landscape.
Medium	Partial loss or alteration to one or more key elements/features/characteristics of the baseline condition. Addition of elements that may be evident but do not necessarily conflict with the key characteristics of the existing landscape.
Low	Minor loss or alteration to one or more key elements/features/characteristics of the baseline landscape. Addition of elements that may not be uncharacteristic within the existing landscape.
Very Low	Barely discernible loss or alteration to key elements/features/characteristics of the baseline landscape. Addition of elements not uncharacteristic within the existing landscape.

A2.47 **Geographical Extent:** This is distinct from the size or scale of effect and a range of scales that typically apply are listed below:

- Large scale effects influencing several landscape types or character areas;
- Effects at the scale of the landscape type or character areas within which the proposal lies;
- Effects within the immediate landscape setting of the site;
- Effects at the site level (within the development site itself); and
- Effects only experienced on parts of the site at a very localised level.

A2.48 **Table EDP A2.4** provides an indication of the criteria by which the geographical extent of the area will be affected within this assessment for landscape receptors.

Table EDP A2.4: Geographical Extent Criteria for Landscape Receptors

Landscape Receptors
Large scale effects influencing several landscape types or character areas
Effects at the scale of the landscape type or character areas within which the proposal lies
Effects within the immediate landscape setting of the site

Landscape Receptors
Effects at the site level (within the development site itself)
Effects only experienced on parts of the site at a very localised level

A2.49 **Duration and reversibility** are separate but linked considerations. Duration is judged according to the defined terms set out in below. Reversibility is a judgement about the prospects and practicality of the particular effect being reversed in, for example, a generation. The categories used in this assessment are set out below.

Duration:

- Long term (20 years+);
- Medium to long term (10 to 20 years);
- Medium term (5 to 10 years);
- Short term (1 year to 5 years); and
- Temporary (less than 12 months).

Reversibility:

- Permanent with unlikely restoration to original state e.g. major road corridor, power station, urban extension etc.;
- Permanent with possible conversion to original state e.g. agricultural buildings, retail units;
- Partially reversible to a different state e.g. mineral workings;
- Reversible after decommissioning to a similar original state e.g. wind energy development; and
- Quickly reversible e.g. temporary structures.

Defining Overall Magnitude of Change

A2.50 The overall magnitude of change experienced by landscape receptor is determined by combining judgements of their scale of change, the geographical extent of any change and the duration and/or reversibility of that change. For example a high scale of change experienced for a short period and over a small geographical extent may result in a medium overall magnitude of change. A degree of professional judgement will always apply in arriving at the overall magnitude of change for landscape receptors, and a five point word scale is used to define this – Very High, High, Medium, Low and Very Low – this reflecting the definition used for scale of change.

Defining Landscape Effects

A2.51 To define the significance of an effect, the separate judgements about the sensitivity of the receptors and the magnitude of change at those receptors need to be combined to allow a final judgement to be made about whether each effect is significant in terms of the EIA Regulations, or not. This is undertaken within this assessment, in the first instance, using a matrix which combines the two facets to determine a level of effect. Further professional judgement is applied, relevant to the development and its location, to finalise the level of effects and thus its significance.

Stage 7: Assessment of Visual Effects

A2.52 The visual amenity assessment is often informed by the preparation of a Zone of Theoretical Visibility (ZTV) using a Geographical Information System (GIS). This typically uses only landform data (of various resolutions) to assess the theoretical visibility of the development proposals. In reality, vegetation and built form substantially reduce the locations from where the proposals are visible; however the ZTV is a useful starting point to inform the field assessment.

A2.53 The field assessment identifies locations and routes from where the proposals can be seen, taking into account the effects of built form and vegetation to establish the primary zone of visibility. The assessment may consider 'average' conditions and 'worst-case' conditions, the latter being when leaf-cover is minimal. Where visual assessments cannot be undertaken in the winter months due to the project programme, the assessment will state any limitations this is considered to have on the certainty with which the assessment can be undertaken.

A2.54 The assessment of effects is aided through consideration of a representative selection of viewpoints from where principal receptors may obtain clear views of the proposed development. The viewpoints selected typically represent specific locations from where the maximum visibility of the proposals is available in the local area. As a result of the selection of only viewpoints in which the proposed development will be visible and those where it is most conspicuous, there will be a tendency to overstate the true extent of visibility of the development and its effects on visual amenity.

Identifying Visual Receptors

A2.55 The locations and types of visual receptors within the defined study areas are identified from Ordnance Survey maps and other published information (such as walking guides), from fieldwork observations and from information provided during the consultation process.

A2.56 The selected viewpoints provided within the report will be agreed through consultation with the Local Planning Authority, where possible and practical. They will illustrate clear views of the development from locations within the study area which typically cover a range of:

- Designated landscapes (where present);

- Landscape character areas/ types;
- Distances and orientations from the proposals; and
- Receptor types.

A2.57 A typical range of receptors and the locations and activities that they may be undertaking is provided in **Table EDP A2.5**. As shown, these are grouped into primarily two, but sometimes three, main receptor groups (zonal, linear route and marine-based receptors) whose location and activities influence the way that they experience the landscape and views.

Table EDP A2.5: Typical Visual Receptors

	Receptor type	Typical Locations	Activities
Zonal	Residents	Residential properties, farmsteads, settlements and towns	Enjoying views from within the curtilage of their properties, from windows, driveways and gardens
	Walkers, cyclists, horse riders	Open access areas	For exercise and to enjoy the landscape and views
	Motorists, walkers, cyclists and horse riders	Scenic vantage points	Stopping a journey to enjoy the view
	People at leisure (outdoors) e.g. golfers, fishermen, campers, bathers	Golf courses, fishing lakes, recreational grounds, picnic sites, camping and caravan sites, holiday villages	Playing golf, fishing or other outdoor sports, picnicking, camping and caravan holidays
	People at work (outdoors)	Farms, mineral extraction sites, waste disposal sites	Working but with views of surroundings
	People at leisure (indoors)	Indoor recreational centres, cinemas	Indoor sports and leisure activities with few views of surroundings
	People at work (indoors)	Offices, business parks, industrial estates	Working with few views of surroundings
	Ferry, rail and air travellers	At ferry terminals, railway stations and airports	Waiting to catch their chosen mode of transport
Linear	Walkers, cyclists and horse riders	On footpaths, cycle routes, bridleways and other public rights of way	Travelling at a steady pace with ample opportunity to enjoy the specific qualities of the landscape
	Motorcyclists, motorists and passengers	On motorways, A- B class roads, minor roads and tracks	Travelling at various speeds, depending on the class of road and driver, with views of surroundings
	Rail and air travellers	On trains and aeroplanes	Travelling at various speeds and with various views
Marine-based	Recreational water users, e.g. swimmers, surfers, sailors	Moving around the inshore waters	Swimming, surfing, skiing, sailing, fishing, with views

	Receptor type	Typical Locations	Activities
	Passengers, e.g. ferry & cruise ships	On ferry and shipping routes	Passage-making, with views
	Commercial shipping and fishing	On shipping routes	Passage-making, limited views

Visual Receptor Sensitivity

A2.58 Factors which influence professional judgment when assessing the degree to which a particular view can accommodate change arising from a particular development, without detrimental effects would typically include judgements about the susceptibility of visual receptors to change and the value attached to views.

A2.59 Judgements of susceptibility of visual receptors to change is mainly a function of the occupation or activity of people experiencing the view at particular locations; and the extent to which their attention or interest may therefore be focussed on the views and the visual amenity they experience at particular locations.

A2.60 Judgements of value attached to views take into account recognition of the value attached to particular views e.g. heritage assets or through planning designations and indicators of the value attached to views by visitors e.g. guidebooks, tourists maps and interpretative material.

A2.61 **Table EDP A2.6** provides an indication of the criteria by which both the susceptibility and value are combined to define the overall sensitivity of visual receptors:

Table EDP A2.6: Overall Sensitivity Criteria for Visual Receptors

Category	Visual Receptor Criteria
Very High	Designed view (which may be to or from a recognised heritage asset or other important viewpoint), or where views of the surroundings are an important contributor to the experience. Key promoted viewpoint e.g. interpretative signs. References in literature and art and/or guidebooks tourist maps. Protected view recognised in planning policy designation. Examples may include views from residential properties, especially from rooms normally occupied in waking or daylight hours; national public rights of way e.g. National Trails and nationally designated countryside/landscape features with public access which people might visit purely to experience the view; and visitors to heritage assets of national importance.
High	View of clear value but may not be formally recognised e.g. framed view of high scenic value, or destination hill summits. It may also be inferred that the view is likely to have value e.g. to local residents. Examples may include views from recreational receptors where there is some appreciation of the landscape e.g. golf and fishing; local public rights of way, access land and National Trust land, also panoramic viewpoints marked on maps; road routes promoted in tourist guides for their scenic value.

Category	Visual Receptor Criteria
Medium	View is not promoted or recorded in any published sources and may be typical of the views experienced from a given receptor. Examples may include people engaged in outdoor sport other than appreciation of the landscape e.g. football and rugby or road users on minor routes passing through rural or scenic areas.
Low	View of clearly lesser value than similar views experienced from nearby visual receptors that may be more accessible. Examples may include road users on main road routes (motorways/A roads) and users of rail routes or people at their place of work (where the place of work may be in a sensitive location). Also views from commercial buildings where views of the surrounding landscape may have some limited importance.
Very Low	View affected by many landscape detractors and unlikely to be valued. Examples may include people at their place of work, indoor recreational or leisure facilities or other locations where views of the wider landscape have little or no importance.

Magnitude of Change

A2.62 The magnitude of the change to a view is a judgement based on a series of parameters, listed below. A professional judgement of the magnitude of change is reached by fieldwork observation, which can be supported by cross sections and computer-generated visualisations and/or 3D models, where appropriate. Magnitude is determined by evaluating the following parameters:

- **Size or scale**, taking into account change with respect to loss or additions of features in the view and changes in its composition, including the proportion of the view occupied by the proposals. In addition the degree of contrast or integration with any new features or changes in the landscape in terms of form, scale and mass, line, height, colour and texture are considered. Finally the nature of the view is considered e.g. full, partial or glimpsed;

- **Geographical extent** will vary with different viewpoints and is likely to reflect the angle of view in relation to the main activity of the receptor; the distance of the viewpoint from the proposed development and the extent of the area over which the changes would be visible; and

- **Duration and reversibility** of visual effects as set out for the landscape effects above.

A2.63 For the visual receptors identified, the factors above are examined independently and the findings judged in accordance with the indicative categories below in **Tables EDP A2.7** and **A2.8**.

Table A2.7: Scale of Change Criteria for Visual Receptors

Category	Visual Receptor Criteria
Very High	There would be a substantial change to the baseline, with the proposed development creating a new focus and having a defining influence on the view.
High	The proposed development will be clearly noticeable and the view would be fundamentally altered by its presence.
Medium	The proposed development will form a new and recognisable element within the view which is likely to be recognised by the receptor.
Low	The proposed development will form a minor constituent of the view being partially visible or at sufficient distance to be a small component.
Very Low	The proposed development will form a barely noticeable component of the view, and the view whilst slightly altered would be similar to the baseline situation.

A2.64 **Table EDP A2.8** provides an indication of the criteria by which the geographical extent of the area will be affected within this assessment.

Table EDP A2.8: Geographical Extent Criteria for Visual Receptors

Visual Receptor Criteria
Direct views at close range with changes over a wide horizontal and vertical extent.
Direct or oblique views at close range with changes over a notable horizontal and/or vertical extent.
Direct or oblique views at medium range with a moderate horizontal and/or vertical extent of the view affected.
Oblique views at medium or long range with a small horizontal/vertical extent of the view affected.
Long range views with a negligible part of the view affected.

Defining Visual Effects

A2.65 The assessment of effects on visual amenity draws on the predicted effects of the development, the landscape and visual context, and the visibility and viewpoint analyses, and considers the significance of the overall effects of the proposed development on the visual amenity of the main visual receptor types in the study area.

A2.66 To define the significance of an effect, the separate judgements about the sensitivity of the receptors and the magnitude of change at those receptors need to be combined to allow a final judgement to be made about whether each effect is significant in terms of the EIA Regulations, or not. This is undertaken within this assessment, in the first instance, using a matrix which combines the two facets to determine a level of effect. Further professional judgement is applied, relevant to the development and its location, to finalise the level of effects and thus its significance.

Stage 6, 7 and 8: Significance of Landscape and Visual Effects

A2.67 The purpose of the assessment process is to identify the significant environmental effects (both beneficial and adverse) of the development proposals. For proposals subject to a full EIA, Schedule 4 to the EIA Regulations specifies the information to be included in all environmental statements, which should include a description of:

"The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development."

A2.68 In order to consider the likely significance of any effect, the sensitivity of each receptor is combined with the predicted magnitude of change to determine the significance of effect, with reference also made to the geographical extent, duration and reversibility of the effect within the assessment. Having taken such a wide range of factors into account when assessing sensitivity and magnitude at each receptor, the significance of effect can be derived by combining the sensitivity and magnitude in accordance with the matrix in **Table EDP A2.9**.

Table A2.9: Significance Matrix for Landscape and Visual Effects

Overall Sensitivity	**Overall Magnitude of Change**				
	Very High	**High**	**Medium**	**Low**	**Very Low**
Very High	**Substantial**	**Major**	**Major/ Moderate**	**Moderate**	Moderate/ Minor
High	**Major**	**Major/ Moderate**	**Moderate**	Moderate/ Minor	Minor
Medium	**Major/ Moderate**	**Moderate**	Moderate/ Minor	Minor	Minor/ Negligible
Low	**Moderate**	Moderate/ Minor	Minor	Minor/ Negligible	Negligible
Very Low	Moderate/ Minor	Minor	Minor/ Negligible	Negligible	Negligible/ None

A2.69 Each effect is described and evaluated individually through the integration of all of the relevant factors and assessed as either **significant** or **not significant**. For landscape and visual effects, those effects identified at a substantial, major, major/moderate or moderate level (shaded grey in the table above) are generally considered to be **significant** and those effects assessed at a moderate/minor, minor, minor/negligible or negligible level are considered to be **not significant**.

A2.70 In certain cases, where additional factors may arise, a further degree of professional judgement may be applied when determining whether the overall change in the view will be significant or not and, where this occurs, this is explained in the assessment.

Definition of Effect

A2.71 Taking into account the levels of effect described above, and with regard to effects being either adverse or beneficial, the following table represents a description of the range of effects likely at any one receptor.

Table EDP A2.11: Definition of Effect

Effect	**Definition**
Substantial	Effects which are in complete variance to the baseline landscape resource or visual amenity.
Major	Effects which result in noticeable and fundamental alterations to the landscape resource or visual amenity.

Moderate	Effects which result in noticeable but non-fundamental alterations to the baseline landscape resource or visual amenity.
Minor	Effects which result in slight alterations to the landscape resource or visual amenity.
Negligible	Effects which result in barely perceptible alterations to the landscape resource or visual amenity.
None	No detectable alterations to the landscape resource or visual amenity.

Nature of Effect

A2.72 It is a requirement of the EIA Regulations to state whether effects are adverse, beneficial or neutral. The landscape effects will be considered against the landscape baseline, which includes published landscape strategies or policies if they exist.

A2.73 Visual effects are more subjective as people's perception of development varies through the spectrum of negative, neutral and positive attitudes. In the assessment of visual effects the assessor will exercise objective professional judgement in assessing the significance of effects and will assume, unless otherwise stated, that all effects are adverse, thus representing the worst-case scenario.

Stage 9: Cumulative Effects Assessment

A2.74 Cumulative effects result from additional changes to the landscape or visual amenity caused by the proposed development in conjunction with other developments in the study area. The separate effects of the proposals may not be significant; however, together they may create a significant effect.

A2.75 The schemes to be considered in the cumulative assessment can include the proposed development with other committed developments (i.e. operational, those that have already begun construction, those that have not been commenced but have a valid planning permission and those schemes which are in the planning process and details have been released by the planning authority).

A2.76 The potential assessment of cumulative effects repeats the assessment process set out above, but considers the potential change caused by all schemes identified for cumulative assessment.

A2.77 Cumulative landscape character and visual effects would potentially occur when one or more development proposal in conjunction with the proposals are apparent in views from certain locations. Seen together (simultaneously) or one after the other on a linear route (sequentially) two or more development proposals may affect landscape character, valued landscapes, views and/or visual amenity.

A2.78 Other developments to be considered in the cumulative assessment are usually agreed in advance with the Local Planning Authority.