Railway Pension Nominees Ltd
Beehive Centre, Cambridge
August 2023

BIDWELLS

ENVIRONMENTAL STATEMENT
VOLUME 1 - MAIN REPORT

Quality Assurance

Quality Assurance

Site name:	Beehive Centre, Cambridge
Client name:	Railway Pension Nominees Ltd
Type of report:	Environmental Statement
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A copy of the Environmental Statement and Appendices may be viewed online at https://applications.greatercambridgeplanning.org/online-applications/ or by prior appointment at Cambridge City Council, Mandela House, 4 Regent Street, Cambridge CB2 1BY.

Paper copies of the Environmental Statement, together with the technical appendices can be purchased from Bidwells at a cost of £350. Alternatively, a CD containing the documents can be provided at a cost of £15 (prices are inclusive of VAT). The Non-Technical Summary is available free of charge.

Comments on the Environmental Statement should be directed in writing to Cambridge City Council at the address above.

Technical Quality Assurance

Technical Quality Assurance

For each of the topic chapters included within this Environmental Statement, the relevant consultants responsible for their production have confirmed the technical robustness of the assessment process.

CHAPTER	ORGANISATION	AUTHOR	AUTHOR'S SIGNATURE
Air Quality	waterman	Andrew Fowler	
Cultural Heritage	BIDWELLS	Kate Hannelly-Brown	
Flood Risk, Drainage and Water Resources	waterman	Derek Armitage	
Ground Conditions and Contamination	waterman	Derek Armitage	
Townscape and Visual	BIDWELLS	Martina Sechi	
Noise and Vibration	HOARE LEA	Kial Jackson	
Socio-Economics	Volterra	Alex O'Byrne Miraj Mistry	
Transport	waterman	David Whalley	

Statement of Competency

Statement of Competency

This Environmental Statement has been prepared by competent experts. Relevant expertise and qualifications of the expert team are outlined below.

DISCIPLINE	CONSULTANT	AUTHOR, RELEVANT QUALIFICATIONS AND EXPERTISE
EIA Coordinator and ES editor, authors of chapters not otherwise specified below.	BIDWELLS	**Caroline Rodger PIEMA**, 4 years' experience in EIA. **James Alflatt**, **MRTPI PIEMA**, 20 years' experience in EIA coordination, and Registered EIA Practitioner of IEMA.
Air Quality	waterman	**Andrew Fowler BSc (Hons) CEnv AIEMA IES** Andrew has 12 years' experience and is responsible for the technical delivery of a wide range of air quality projects for a variety of clients in both the public and private sector. These projects include consideration of emissions from both transportation and industrial sources, through both monitoring and modelling, and therefore he has an in depth understanding of the regulatory requirements for these sources and the published technical guidance for their assessment.
Cultural Heritage	BIDWELLS	**Kate Hannelly-Brown BSc (Hons) MSc IHBC** Kate has an MSc in Historic Conservation from Oxford Brookes University and is also a full member if the Institute of Historic Buildings Conservation (IHBC). Kate has significant experience of projects of varying scale and type across the UK, including the provision of ES chapters on a number of complex, heritage-related developments. She has detailed knowledge of both the urban and rural historic environment and ensures that her advice is based on a proper understanding of the Site and the issues.
Flood Risk and Drainage	waterman	**Derek Armitage BEng (Hons)** Derek is a member of the Institution of Civil Engineers and an Expert Witness (Flooding, Hydrology, and Drainage). He has over 30 years' post graduate experience in civil engineering and environmental risk assessment within multi-disciplinary consultancies. He oversees the delivery of professional advice and planning support to investors, developers and landowners on drainage, flood risk, and other land and environmental challenges.
Ground Conditions and Contamination	waterman	**Derek Armitage BEng (Hons)** Derek is a member of the Institution of Civil Engineers and an Expert Witness (Flooding, Hydrology, and Drainage). He has over 30 years' post graduate experience in civil engineering and environmental risk assessment within multi-disciplinary consultancies. He oversees the delivery of professional advice and planning support to investors, developers and landowners on drainage, flood risk, and other land and environmental challenges.
Townscape and Visual	BIDWELLS	**Martina Sechi BSc. BE MALA CMLI** Martina is a Chartered Member of the Landscape Institute with almost ten years of professional experience. She has experience on a comprehensive range of landscape assessment projects, including Landscape and Visual Impact Assessment (LVIA) Landscape and Visual Appraisals (LVA) and Townscape Visual Impact Assessment (TVIA).
Noise and Vibration	HOARE LEA	**Kial Jackson BSc MIOA** A Principal Engineer at Hoare Lea. Kial holds a BSc in Sound Engineering and is a full corporate membership of the Institute of Acoustics. With over 7 years of experience in Acoustic Consultancy in the built environment, Kial has previous experience with preparing Noise and Vibration EIA Chapters for numerous residential led projects across London.

DISCIPLINE	CONSULTANT	AUTHOR, RELEVANT QUALIFICATIONS AND EXPERTISE
Socio-Economics	Volterra	**Alex O'Byrne** Alex is a partner at Volterra Partners. He has eight years of experience authoring complex socio-economic chapters throughout the UK. Alex's relevant experience includes: Royal Street (a MedTech hub in Waterloo), Westfield Stratford City, MSG London Sphere in Newham, Olympia London, and the redevelopment of Moorfields eye hospital. **Miraj Mistry** Miraj is a consultant at Volterra Partners with two years of experience. He has provided economic support across a range of projects and played a key role in delivering socio-economic chapters for major residential schemes. One in Portsmouth city centre (around 500 homes) and the other in Newham for residential (700 homes) and student scheme (900 student rooms).
Transport	waterman	**David Whalley BSc (Hons) CIHT** David is a qualified road safety auditor in accordance with the requirements of GG119. David has 15 years' experience within the fields of highway design, traffic engineering, transport planning and road safety. David has been responsible for the technical delivery of a wide range of traffic and transportation projects for a variety of clients in both the public and private sector.

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List of Abbreviations

List of Abbreviations

AADT	Average annual daily traffic
AAWT	Average annual weekday traffic
APS	Annual Population Survey
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
ATC	Automatic Traffic Count
A-WEIGHTING	The 'A' weighting is a correction term applied to the frequency range in order to mimic the sensitivity of the human ear to noise. It is generally used to obtain an overall noise level from octave or third octave band frequencies. An 'A' weighted value would be written as dB(A).
BGS	British Geological Society
BRES	Business Register and Employment Survey
BUG's	Bicycle User Groups
CAGR	Compound Annual Growth Rate / the rate of return that would be required for an investment to grow from its beginning balance to its ending.
CAR	Control of Asbestos Regulations
CCC	Cambridge City Council
CEMP	Construction Environmental Management Plan
CIHT	Chartered Institute of Highways and Transportation
CPCA	Cambridge and Peterborough Combined Authority
DECIBEL (dB)	The decibel is the unit used to quantify sound pressure levels. The human ear has an approximately logarithmic response to acoustic pressure over a very large dynamic range (typically 20 micro-Pascals to 100 Pascals). Therefore, a logarithmic scale is used to describe sound pressure levels and also sound intensity and power levels. The logarithms are taken to base 10. Hence an increase of 10dB in sound pressure level is equivalent to an increase by a factor of 10 in the pressure level (measured in Pascals). Subjectively, this increase would correspond to a doubling of the perceived loudness of sound.
DESIGNATED TOWNSCAPE/ LANDSCAPE	Areas of townscape/landscape identified as being of importance at international, national or local levels, either defined by statute or identified in development plans of other documents.
DEVELOPMENT	Any proposal that results in a change to the landscape and/or visual environment.
DfE	Department for Education
EA	Environment Agency
EFFECTS	The change resulting from the action (the action being the development proposal)
EIA	Environmental Impact Assessment
EPUK	Environmental Protection UK
ESS	Employment and Skills Strategy
FAST (LF)	A standardised time weighting for the measurement of sound over a sample period of 0.125ms
FEH	Flood Estimation Handbook
FPM	Facility Planning Model
FRA	Flood Risk Assessment
FTE) / FTEs	Full time equivalent (are the number of employees working full time hours. If a normal working week is 35 hours, an employee who works for 35 hours per week has an FTE of 1.

FWRA	Foundation Works Risk Assessment
GCP	Greater Cambridge Planning Service
GIA	Gross Internal Area / GIA is the area of a building measured to the internal face of the perimeter walls at each floor level.
GPA	Good Practice Advice
GQRA	Generic Quantitative Environmental Risk Assessment
ha	Hectares
HCA	Homes and Community Agency
HIA	Heritage Impact Assessment
HPER	House price to earnings ratio
IAQM	Institute of Air Quality Management
IMPACTS	The action being taken (the action being the development proposal).
ISFS	Indoor Sports Facilities Strategy
l/h/d	Litres per head per day (per capita consumption)
LANDSCAPE	An area, as perceived by people, the character of which is the result of the action and interaction of natural and/or human factors.
LAND-USE	What the land is used for, based on broad categories of functional land cover, such as urban and industrial use and the different types of agriculture and forestry.
Leq	The Leq, is a parameter defined as the equivalent continuous sound pressure level. Over a defined time period 'T', it is the sound pressure level equivalent to the acoustic energy of the fluctuating sound signal. The Leq,T can be seen to be an "average" sound pressure level over a given time period (although it is not an arithmetic average). It is often used to describe the 'ambient sound level' and can be used to describe all types of environmental noise sources. Typically the Leq,T will be an 'A' weighted noise level in dB(A), or denoted LAeq,T.
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
MAAS	Mobility as a Service
MAGNITUDE (of effects):	A term that combines judgements about the size and scale of the effects, the extent of the area over which it occurs, whether it is reversable or irreversible and whether it is short or long term in duration.
MAXIMUM NOISE LEVEL (LAmax)	The highest A-weighted noise level recorded during a measurement period.
MCC	Manual Classified Count
MHCLG	Ministry of Housing, Communities and Local Government
Ml/day	Million litres per day
NCR	National Cycle Routes
MSIS	Mode Share Incentive Scheme
NIA	Net Internal Area / Net internal area is the useable space within a building. Measurements are taken up to the internal face of the perimeter walls on each floor level – but crucially, only areas that can be used for a specific purpose are taken into account.
NO2	Nitrogen Dioxide
NOISE	An unwanted sound that is unpleasant or that causes disturbance.
NPPF	National Planning Policy Framework
ONS	Office for National Statistics
P&R	Park and Rides

PEAK PARTICLE VELOCITY (PPV)	Peak particle velocity is a measurement of ground vibration and refers to the displacement of ground particles at surface in terms of millimetres (mm). Good practice guidance establishes a direct link between this unit of measurement and the likelihood of adverse comment and building damage associated with vibration.
PERA	Preliminary Environmental Risk Assessment
PM10	Particulate matter with a mean aerodynamic diameter less than 10 microns (or micrometres – µm)
PM2.5	Particulate matter with a mean aerodynamic diameter less than 2.5 microns
PMP	Car Parking Management Plan
PPG	Planning Practice Guidance
R&D	Research and development
RATING LEVEL (LAr,Tr)	The specific noise level of the source plus any adjustment for characteristic features of the noise. The adjustments are defined in BS 4142:2014.
RFC	Ratio of Flow to Capacity
RS	Remediation Strategy
SAM	Standard Assessment Methodology
SCDC	South Cambridgeshire District Council
SCI	Statement of Community Involvement
SENSITIVITY:	A term applied to specific receptors, combining judgments of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor.
SFRA	Strategic Flood Risk Assessment
SIGNIFICANCE:	A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic.
SLOW (LS)	A standardized time weighting for the measurement of sound over a sample period of 1s
SOUND	Vibrations that travel through the air or another medium and can be heard when they reach a person's ear.
SOUND REDUCTION INDEX (R)	This is the level of sound reduction in decibels provided by a separating element such as a window. The sound reduction index is the difference measured between the amount of energy flowing towards the element in the source room and the total amount of energy entering the receiving room (usually in the frequency range 100 Hz – 3150 Hz). R varies with frequency and is measured in a laboratory in one-third octave bands.
SPECIFIC SOUND LEVEL (LAeq)	The equivalent A-weighted (LAeq,T) measured sound pressure level of a specific sound source at the assessment location over the time period T.
sqft	Square feet
sqm	Square meters
Statistical parameter (LN,T)	The LN is a parameter defined as the sound pressure level exceeded for N% of the measurement period 'T'. It is a statistical parameter and cannot be directly combined to other acoustic parameters. The statistical parameter L90 (sound pressure level exceeded for 90% of the measurement period) is generally used to describe the prevailing background sound level. The statistical parameter L10 is the standard statistical parameter used to describe noise from road traffic. Statistical parameters are typically described in terms of an A-weighted noise level denoted as LAN,T.
STM	Sustainable Transport Managers
SuDS	Sustainable Drainage Systems

SUSCEPTIBILITY	The ability of a defined townscape or visual receptor to accommodate the specific Proposed Development without undue negative consequences.
SWDS	Surface Water Drainage Strategy
TA	Transport Assessment
TECHNICAL VISUALISATIONS	Visualisation Types, which are intended to form part of a professional Landscape and Visual Impact assessment (LVIA), Townscape and Visual Impact Assessment (TVIA) or Appraisals that typically accompany planning applications. It is critical that these visualisations are accurate, objective and unbiased. Type 1 annotated viewpoint photographs; Type 2 3D wireline / model; Type 3 photomontage / photowire; Type 4 photomontage / photowire (survey / scale verifiable).
Third Octave Bands	The human ear is sensitive to sound over a range of frequencies between approximately 20 Hz to 20 kHz. There are many methods of describing the frequency content of a noise, but the most common methods split the frequency range into defined bands, in which the mid-frequency is used as the band descriptor and in the case of octave bands is double that of the band lower. For example two adjacent octave bands are 250 Hz and 500 Hz. Third octave bands provide a fine resolution by dividing each octave band into three bands.
TOWNSCAPE	The character and composition of the built environment including the buildings and the relationship between them, the different type of urban open space, including green spaces, and the relationship between buildings and open space.
TOWNSCAPE RECEPTORS	Defined aspects of the townscape resource that have the potential to be affected by the proposal.
TP	Travel Plan
TPC	Travel Plan Coordinator
TTWA/ TTWAs	Travel to Work Area / represent the population that may reasonably be expected to travel to, and benefit from (in terms of employment).
VERIFIED VIEWS or VERIFIED PHOTOMONTAGE	Visualisations subjected to a quality assurance process to confirm that what is being presented is an accurate reflection of the true situation.
Vibration dose value (VDV)	The vibration dose value is a unit of measurement for assessing continuous or intermittent vibration over a period of time. It can be established through long term measurement or through the summation of short-term vibration events.
VIEWPOINT	These can be actual or virtual. They are points in space from where the view is obtained.
VISUAL AMENITY	The overall pleasantness of the view people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.
VISUAL RECEPTORS	Individual and/or defined groups of people who have the potential to be affected by the proposal
VISUALISATIONS	Computer simulation, photomontage or other technique to illustrate the predicted appearance of the development.
VOA	Valuation Office Agency
VR	Validation Report

VR 0/1/2/3 Accurate Visual Representation	A still image, or animated sequence of images, intended to convey reliable visual information about a proposed development. AVR Level 0 - Location and size of proposal. This equates to a photowire and provides an outline of the proposal overlaid onto the photograph base. AVR Level 1 - Location, size and degree of visibility of proposal. This shows the massing of the proposal within a 3D context represented by the photograph - that is, what can and cannot be seen. AVR Level 2 - As level 1 + description of architectural form. This illustrates architectural form such as doors, windows and floors, and gives a sense of the form and shading of the development within its context. AVR Level 3 - As level 2 + use of materials. This is a fully rendered photomontage, usually photo-realistic with texture, shading and reflections as appropriate.
Waterman	Waterman Infrastructure and Environment Ltd
Weighted sound reduction index (Rw)	This is a weighting procedure defined in BS EN ISO 717 Part 1 for converting one-third octave band R values to a single number quantity denoted as Rw. It is a decibel value.
WFD	Water Framework Directive
WRMP	Water Resources Management Plan
WUG	Walking User Groups
X, Y, Z	Refers to the 3 planes of vibration which are right angles to each other (front to back, side to side, and up and down).
ZTV	Zone of Theoretical Visibility: A map, usually digitally produced, showing areas of land within which development is theoretically visible.

Introduction

1.0 Introduction

Background

1.1 Bidwells LLP have been instructed by Railway Pension Nominees Ltd (hereafter "the Applicant") to undertake an Environmental Impact Assessment (EIA) under the Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2017 (as amended) (hereafter 'the EIA Regulations') in support of an outline planning application submitted to Cambridge City Council (hereafter 'the Council' or 'CCC') at the Beehive Centre in Cambridge (hereafter 'the Site').

1.2 The description of development for which permission is being sought (hereafter "the Proposed Development") is:

Outline Application for the demolition and redevelopment for a new local centre (E (a-f), F1(b-f), F2(b,d)), open space and employment (office and laboratory) floorspace (E(g)(i)(ii) to the ground floor and employment floorspace (office and laboratory) (E(g)(i)(ii) to the upper floors; along with supporting infrastructure, including pedestrian and cycle routes, vehicular access, car and cycle parking, servicing areas, landscaping and utilities.

1.3 This document comprises the Environmental Statement (ES), which contains the information required by Regulation 18 of the EIA Regulations. The ES is organised into three main volumes:

- Volume 1: Main Report (this document);
- Volume 2: Technical Appendices (providing figures and detailed assessments for particular issues); and
- Volume 3: Non-Technical Summary (NTS) providing an overview of the main findings and recommendations reported in the ES.

Need for the Environmental Statement

1.4 Certain types of development are required to be the subject of EIA ("EIA development"). Schedule 1 of the EIA Regulations lists the type and scale of development that automatically require EIA. Schedule 2 of the EIA Regulations sets out the development types that may require EIA ("Schedule 2 development"). To qualify as a Schedule 2 development, it must be either located in a "Sensitive Area" as defined in Regulation 2(1) or exceed the applicable threshold in Schedule 2. Not all Schedule 2 development will require EIA and they consequently need to be screened on a case-by-case basis using the criteria set out in Schedule 3 of the Regulations.

1.5 The proposal in this case does not qualify as a Schedule 1 development and is not located within or close to a Sensitive Area. It is, however, of a type and scale that falls within Schedule 2(10) 'Infrastructure Projects' - specifically 10(b) 'Urban Development Projects'.

1.6 In accordance with the EIA Regulations, given the size, scale and nature of the Proposed Development, significant environmental effects are considered likely in the absence of measures to reduce these effects. Accordingly, the Applicant has volunteered to conduct an EIA.

Purpose of EIA

1.7 The National Planning Practice Guidance (NPPG) sets out that the aim of an EIA is to:

"Protect the environment by ensuring that a local planning authority when deciding whether to grant planning permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision-making process…

The aim of Environmental Impact Assessments is also to ensure that the public are given early and effective opportunities to participate in the decision-making procedures." Paragraph:002 Reference ID: 4-002-20140306.

1.8 In enabling the systematic examination of effects from a proposal, EIA facilitates refinement of an emerging development proposal to minimise adverse impacts on the environment and to maximise beneficial consequences. EIA, as reported in the ES, seeks to ensure that the likely significant environmental effects of a development proposal are understood by the decision makers and taken into account in evaluating the proposal. The ES also provides information to interested parties, thereby facilitating participation in decision-making processes.

Scope of the Environmental Impact Assessment

1.9 Regulation 15 of the EIA Regulations allows applicants to request a written statement from the relevant planning authority as to the content of the EIA and the information to be provided in the ES. The 'Scoping Opinion' provides clarity on content and methodology.

1.10 The scoping process followed for this application is described in detail in Chapter 2. In summary, this concluded that the Proposed Development was likely to give rise to significant environmental effects upon the following environmental aspects and, as such, these should be addressed in the EIA:

- Air Quality;
- Cultural Heritage;
- Flood Risk, Drainage and Water Resources;
- Ground Conditions and Contamination;
- Townscape and Visual;
- Noise and Vibration;
- Socio-Economics;
- Transport; and
- Cumulative Impacts.

Environmental Statement Structure

1.11 Volume 1 of the ES (this volume) presents the findings of the EIA in a series of chapters. The document is structured as follows:

- Chapter 1 Introduction
- Chapter 2 Methodology
- Chapter 3 Site Context
- Chapter 4 Description of the Proposed Development (including assessment of alternatives)
- Chapter 5 Planning Policy Context

- Chapter 6 Air Quality
- Chapter 7 Cultural Heritage
- Chapter 8 Flood Risk, Drainage and Water Resources
- Chapter 9 Ground Conditions and Contamination
- Chapter 10 Townscape and Visual
- Chapter 11 Noise and Vibration
- Chapter 12 Socioeconomics
- Chapter 13 Transport
- Chapter 14 Cumulative Effects
- Chapter 15 Summary of Effects

Volume 2

1.12 A number of technical reports have been produced to accompany the planning application. Those technical reports relied on in the EIA are compiled in the ES (Volume 2) for completeness.

Volume 3

1.13 This volume provides a relatively short, non-technical summary of the outcomes of the EIA as reported in the ES. This is a useful starting point for readers of the ES and is presented separately.

Project Team

1.14 The production of this ES has been coordinated by Bidwells and presents the results of the EIA process carried out by a number of specialist consultants, on behalf of the Applicant. The EIA team is part of a wider design team. The roles and responsibilities of each member of the team are summarised in **Table 1.1**. As required by the EIA Regulations the ES has been prepared by competent experts, and a Statement of Competency is presented at the beginning of this ES.

Table 1.1: EIA and Design Team

TOPIC	CONSULTANT
Air Quality	Waterman
Cultural Heritage	Bidwells
Flood Risk, Drainage and Water Resources	Waterman
Ground Conditions and Contamination	Waterman
Townscape and Visual	Bidwells
Noise and Vibration	Hoare Lea
Socio-Economics	Volterra Group
Transport	Waterman

1.15 The methodology and approach that has been adopted for the EIA and ES is outlined in **Chapter 2.**

Methodology and Scope

2.0 Methodology and Scope

Introduction

2.1 This chapter describes the background and methodology used for undertaking the EIA and defines the scope of assessment and sets out the approach for reporting this assessment within the ES.

EIA Objectives

2.2 In broad terms, the objectives of the EIA are:

- To establish existing/baseline environmental conditions;
- To identify, describe and assess the significance of the environmental effects of the Proposed Development, during both construction and operation; and
- To identify mitigation, enhancement and monitoring measures to prevent, reduce or remedy significant adverse effects and maximise beneficial effects of the Proposed Development.

General Approach

2.3 The EIA process, generally, has comprised a series of stages (see **Figure 2.1**).

2.4 This ES has been prepared in accordance with the EIA Regulations. These Regulations translate the requirements of the European Union Directive 2014/52/EU on the Assessment of the Effects of Certain Public and Private Projects on the Environment ("the EIA Directive"), the most recent being the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. Amendments to the EIA Regulations include those which continue to implement EIA on the United Kingdom (UK)'s exit from the European Union ("The Environmental Assessments and Miscellaneous Planning (Amendment) (EU Exit) Regulations 2018").

2.5 The EIA has also been prepared with regard to other guidance, as referenced, including:

- EIA Guide to Delivering Quality Development (Institute for Environmental Management and Assessment (IEMA) 2016);
- EIA Guide to Shaping Quality Development (IEMA 2015);
- National Planning Practice Guidance (Ministry of Housing, Communities and Local Government (MHCLG 2018); and
- Guidelines for Environmental Impact Assessment (IEMA 2004).

Step 1

Establish receptors that could be affected by the development and their sensitivity
As determined through baseline studies on the local environment.

Step 2

Impact characterisation
Description of the potential changes brought about by the development on the sensitive receptors.

Step 3

Cumulative impact characterisation
Identification of incremental/additional impacts due to past, present and reasonably foreseeable future actions.

Step 4

Impact significance assessment
Consideration of the nature and scale of impact characteristics, combined with the importance/sensitivity of receptors to produce a judgement of overall significance.

Step 5

Consider need for mitigation
If significant environmental impacts are deemed unacceptable, opportunities for reducing their nature, scale, duration or geographical extent may be available through re-design or alternative methods of development. These should be considered by the developer and committed to as appropriate to reduce the significance of environmental effects.

Step 6

Assess significance of residual impacts
Where the developer has committed to undertaking mitigation to reduce the predicted significance of environmental effects, the overall significance can be re-assessed to show the predicted change from baseline conditions with successful mitigation in place.

Step 7

Monitoring and management strategies
The success of mitigation measures may need to be monitored in order to ensure impacts are no worse than those predicted.

Figure 2.1: Environmental Impact Assessment Process

Environmental Impact Assessment Method and Assessment Criteria

Approach

2.6 This EIA has assessed the Proposed Development based on the application for an outline planning application. Therefore, a series of Parameter Plans (refer to **Appendix 4.1** of Volume 2 of this ES) have been developed as part of the design process which the EIA is based on. These include the following:

- **Site Location Plan**: shows the extent of the land subject to the outline planning application;
- **Land Use Parameter Plans (upper floors and ground floor levels)**: this defines the general description and location of the proposed land use components within the Site;
- **Access and Circulation Parameter Plan**: this defines the hierarchy of access and main circulation routes for both vehicles and pedestrians;
- **Landscape and Open Space Parameter Plan**: this defines the parameters for key strategic areas of structural landscaping and open space within the Site; and
- **Building Heights and Plots Parameter Plan**: this defines the maximum heights and plot size of the built development across the Site, based on the structure of the Land Use Parameter Plan.

Definitions of Impacts and Effects

2.7 For clarity, attention has been taken in this ES to distinguish between environmental impacts and environmental effects. These are defined as follows:

- Environmental Impacts: the process whereby a change, which may be beneficial or adverse or both, is brought about in the existing environment as a result of the development activities; and
- Environmental Effects: the consequences for the natural environment, including humans.

2.8 Thus, ‘impacts’ are the process or change in the environment and the ‘effect’ is the consequence of that change.

Significance of Effects

2.9 The EIA regulations require that an EIA assesses the likely significant effects arising from a proposal on population, human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage, landscape and interactions between these topics. The definition of significance is prescribed to varying degrees by statute and policy (including EU and national policies, guidelines and standards). In many cases, however, such guidance is general in nature. It is broadly accepted that the significance of an effect reflects the relationship between two factors:

- The value of the affected resource or receptor and its sensitivity to the impact (which can vary depending on the nature of the impact); and
- The magnitude of an impact (i.e. the actual change taking place to the environment).

2.10 The ES firstly identifies the likely significant environmental effects based on the final design prior to mitigation. Determination of significance is based on consideration of the characteristics of the impact, including the likelihood, character (direct, indirect, secondary or cumulative); duration (frequency, short, medium and long term, permanent or temporary), and importance; the environmental sensitivity of receptors; and any quantified thresholds or indicative criteria set out in Government Regulations and Policy Guidelines. Where quantifiable criteria are not

available or appropriate, defined qualitative criteria and expert judgement are applied.

2.11 The timescales considered are as follows:

- Short Term (i.e. less than 5 years).
- Medium Term (i.e. 5-10 years).
- Long Term (i.e. for the duration of the operational phase of the development).

2.12 The nature of the effect is considered as follows:

- Permanent (i.e. irreversible).
- Temporary (i.e. during the Construction Phase, or occasionally during the operational phase).

2.13 The significance of effects has been assessed using one or more of the following criteria, unless otherwise stated:

- International, national and local standards;
- Relationship with planning policy;
- Sensitivity of receiving environment;
- Reversibility and duration of effect;
- Magnitude of effect;
- Likelihood of effect and related uncertainties;
- Inter-relationship between effects; and
- The results of consultations.

Identification of Sensitive Receptors

2.14 The environmental effects of a given development are typically predicted in relation to sensitive receptors, including nearby residential developments and natural resources.

2.15 **Table 2.1** below sets out a standardised approach to considering the value and sensitivity of identified receptors and refers exclusively to environmental designations.

Table 2.1: Sensitivity Receptors

VALUE	SENSITIVITY	CHARACTERISTICS
International/ National	VERY HIGH	Extremely rare (endangered), potentially extremely vulnerable to change, of international importance or recognition, very limited potential for substitution. For example, World Heritage Site, Ramsar Wetland etc.
National	HIGH	Rare, National Importance or recognition, limited potential for substitution, highly vulnerable to change, protected in national legislation. For example, Site of Special Scientific Interest, National Parks, Grade I and Grade II* Listed Buildings and Scheduled Ancient Monuments.
Regional/County/ District	MODERATE	Somewhat rare or vulnerable and difficult to substitute. Resources and receptors of Regional, County or District Importance e.g. Regional and Country Wildlife Sites, Grade II Listed Buildings.

VALUE	SENSITIVITY	CHARACTERISTICS
District/Local	LOW	Locally Important, difficult to substitute at a local level, rare or unusual at the local level but well represented elsewhere. For example, Local Nature Reserves, Locally Listed Buildings etc.
Local	VERY LOW	Of limited importance or value, not vulnerable to change, can be readily substituted and/or which have been partially destroyed. E.g. undesignated buildings of some limited historical significance.
Negligible	NEGLIGIBLE	Areas where there is minimal evidence of any resource or receptor.

Magnitude of Change

2.16 Impacts can arise as a result of development caused by direct actions and the proximity of new structures (e.g. noise or dust) or indirectly as a consequence of the development. Indirect impacts are a matter of fact and judgement; an example of an indirect impact is a substantial requirement for the offsite sourcing of aggregate materials. Impacts can be beneficial or adverse, temporary or permanent. The degree of impact has been considered in terms of Major, Moderate, Minor or Negligible as set out in **Table 2.2.**

Table 2.2: Magnitude of Change

	MAGNITUDE	CHARACTERISTICS OF CHANGE
	Major Beneficial	The Proposed Development would remove features that adversely affect the existing environment, prevent further degradation, and enhance and protect the environment in the long-term.
	Moderate Beneficial	The Proposed Development would notably reduce rate of current degradation and/ or enhance existing character.
	Minor Beneficial	The Proposed Development would reduce rate of current degradation.
	None	The Proposed Development would not result in any meaningful change to the receptor/ resource.
	Minor Adverse	The Proposed Development would increase the rate of current degradation or introduce some minor detractors into the environment.
	Moderate Adverse	The Proposed Development would result in the partial loss of a resource or notably degrade a receptor environment.
	Major Adverse	The Proposed Development would result in the complete loss of a resource or compromise the integrity of a receptor such that its long-term survival is highly unlikely.
	Severe	Total loss/ damage/ destruction of or major alteration / changes to key elements / features/ characteristics of the receiving environment.

Evaluation of Significance

2.17 Wherever applicable, topic-specific good practice methodologies, established impact prediction techniques, recognised models or guidelines are used to evaluate the significance of changes proposed. Where statutory criteria have not been available, non-statutory guidance or acknowledged reference points are adopted. The details of all methods and assessment criteria are provided in each ES technical chapter (Chapters 6-13).

2.18 The primary objective of the assessment is to identify the likely significant environmental effects.

A general approach to the determination of whether the result is deemed to be significant is described below. Whilst significance is not absolute, terms and assumptions are clearly set out so that the process is as transparent as possible.

2.19 Combining the value of each receptor and/or resource and the magnitude of the change (impact) resulting from the Proposed Development, an assessment has been made of the significance of the effect, as indicated in **Table 2.3** below.

Table 2.3: Significance Matrix

		BASELINE SENSITIVITY				
		VERY HIGH	HIGH	MODERATE	LOW	VERY LOW
MAGNITUDE OF CHANGE	MAJOR BENEFICIAL	Major Beneficial	Major-Moderate Beneficial	Moderate Beneficial	Moderate/ Minor Beneficial	Minor Beneficial
	MODERATE BENEFICIAL	Major-Moderate Beneficial	Moderate Beneficial	Moderate-Minor Beneficial	Minor Beneficial	Minor/ Beneficial
	MINOR BENEFICIAL	Moderate Beneficial	Moderate/ Minor Beneficial	Minor Beneficial	Minor/ Beneficial	Negligible
	NEUTRAL	Negligible	Negligible	Negligible	Negligible	Negligible
	MINOR ADVERSE	Moderate Adverse	Moderate/ Minor Adverse	Minor Adverse	Minor/ Negligible Adverse	Negligible
	MODERATE ADVERSE	Major-Moderate Adverse	Moderate Adverse	Moderate/ Minor Adverse	Minor Adverse	Minor/ Negligible Adverse
	MAJOR ADVERSE	Major Adverse	Major-Moderate Adverse	Moderate Adverse	Moderate/ Minor Adverse	Minor Adverse

2.20 The above matrix has been used to assess the significance of environmental effects where they are predicted to occur although specific assessment guidelines for certain topics use slightly different criteria. Where this is the case, the method for assessing significance will be outlined within the relevant topic chapter. The following terms are used in the ES unless otherwise stated to describe the significance of impacts:

- **Major beneficial or adverse significant effect**- where the development would cause a significant improvement (or deterioration) to the existing environment;
- **Moderate beneficial or adverse significant effect-** where the development would cause a noticeable improvement (or deterioration) to the existing environment;
- **Minor beneficial or adverse effect-** where the development would cause a small or barely perceptible improvement (or deterioration) to the existing environment; and,
- **Negligible-** no discernible improvement or deterioration to the existing environment.

2.21 Where there is a possibility of a “borderline” determination of significance (e.g. Moderate/Minor) the outcome has been identified on the basis of professional judgement and/or the specifics of

the assessment for that topic.

Mitigation Measures

2.22 The ES identifies appropriate mitigation measures to avoid, prevent, reduce, or compensate for impacts. Opportunities for enhancement are also taken advantage of, so as to maximise beneficial effects.

2.23 In general, ES mitigation can include:

- Measures relied upon which are part of the design, and thus for approval under this planning application. These are modifications to the location or design of the proposals at pre-consent stage. IEMA (2016) refers to these as 'inherent' mitigations.
- Measures which need to be secured at a later stage, such as through a condition or planning obligation. These can be called 'foreseeable' mitigation. Examples of these are provision of community infrastructure offsite, adherence to noise limits, or management through a plan which has not yet been produced (such as provision of a Transport Plan, with details to be agreed by condition).
- Measures which will be undertaken to meet other existing legislative requirements, or standard practice used to manage commonly occurring environmental effects. An example of these measures is adherence to emissions control measures required under parallel consenting regimes, or standard considerate contractor practices to manage possible construction nuisance activities. These can be called 'tertiary' mitigation.

2.24 This ES identifies the type of mitigation, considers its certainty of effectiveness, the mechanism for securing it, and timescales. This provides greater clarity on how the mitigation measures will be secured.

Evaluation of Residual Effects

2.25 Residual effects are the remaining impacts of the development assuming successful implementation of the identified mitigation measures. The significance of impacts is assessed and categorised as per the methodology; specifically:

- Major, moderate, minor or negligible;
- Positive (beneficial), negative (adverse);
- Short, medium or long term;
- Permanent or temporary;
- Reversible or irreversible;
- Direct or indirect; and
- Unavoidable or uncertain.

Monitoring

2.26 The need for monitoring of likely significant effects has been considered, and details of suggested monitoring activities have been recommended where relevant.

2.27 This has considered the type of indicators to be monitored and has ensured that the duration and character of the monitoring are proportionate to the nature, location and size of the Proposed Development and the significance of its effects on the environment. Avoidance of duplication of monitoring has been considered, and any existing suitable monitoring arrangements identified.

2.28 The effectiveness of mitigation measures and the need for potential remedial action have been considered, based on the nature of the effect and the monitoring suggested.

2.29 The mitigation and monitoring measures are set out in each environmental topic chapter and summarised in the concluding tables to aid decision making and implementation.

Relationship to Parallel Consenting Regimes

2.30 EIA is undertaken to inform planning application decisions for particular projects, based on the requirements set out in the EIA Regulations.

EIA Scoping Request

2.31 The EIA scoping process commenced in December 2022, by submitting a formal request (**Appendix 2.1**) to CCC (ref 22/05250/SCOP). CCC issued their formal Scoping Opinion (**Appendix 2.2**) on 6 February 2023. This process identified the following topics to be considered in the EIA:

- Air Quality;
- Cultural Heritage;
- Flood Risk, Drainage and Water Resources;
- Ground Conditions and Contamination;
- Townscape and Visual;
- Noise and Vibration;
- Socio-Economics;
- Transport; and
- Cumulative Impacts.

2.32 In order to inform their Scoping Opinion, CCC consulted the following:

- Anglian Water;
- CCC Biodiversity Officer;
- Historic England;
- Greater Cambridge Shared Planning (GCSP) Urban Design;
- CCC Sustainability Officer;
- Environment Agency;
- CCC Drainage Officer;
- Cambridgeshire County Council Highways;
- CCC Environmental Health Officer;
- CCC Heritage and Conservation;
- Lead Local Flood Authority; and
- National Highways.

Scope of Environmental Topics