Deloitte.
Real Estate

Land East of Leeds Road, Chidswell

Environmental Statement - Non-Technical Summary

April 2020

Non-Technical Summary

Background

1.1 This Non-Technical Summary ("NTS") accompanies an application for Outline Planning Permission for mixed use development comprising residential and employment generating uses (the "Proposed Development"). The application to which this NTS relates is submitted by C.C. Projects ("the applicant").

1.2 This NTS contains a summary of the Environmental Impact Assessment ("EIA") process in non-technical language. The Environmental Statement ("the ES") sets out the findings of a full EIA which has been carried out to assess the impacts of the Proposed Development.

1.3 The full findings of these studies and of the overall ES are presented in a comprehensive set of documents that can be viewed during normal office hours at the Planning Department of Kirklees Council ("KMDC") or online at KMDC's planning application search system.

Purpose of the Environmental Impact Assessment and Non-Technical Summary

1.4 The purpose of an EIA is explained by the Government in the National Planning Practice Guidance at paragraph 002 (Reference ID: 4-002-20140306), which sets out:

> "*The aim of Environmental Impact Assessment 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.*"

1.5 On this basis, an EIA only applies to those projects which are likely to have a significant effect on the environment and these are typically projects of a larger scale.

1.6 In simple terms, an EIA is an information gathering exercise in relation to the effect that the Proposed Development may have on the local environment when compared to the existing conditions.

1.7 Conducting an EIA is a systematic process, which leads to a final report, the ES.

1.8 This NTS is designed to be read on its own but forms part of the ES. It explains the environmental implications of the Proposed Development to the public, informing them in non-technical language, and allowing them to decide whether they would like more detail on the proposals.

Environmental Impact Assessment Process

1.9 The first step in determining whether EIA is required is understanding if the project meets certain criteria set out within legislation. The legislation sets out different 'schedules' of projects which do and may require EIA and explains how the EIA should be carried out.

1.10 A project may then go through a 'Screening' and/or a 'Scoping' process. Screening is the process whereby an Applicant may submit a request to the Local Planning Authority for a formal opinion as to whether they consider the Proposed Development to meet the criteria for and therefore require an EIA and, the scoping process determines what technical topics the LPA considers to be relevant to the EIA.

1.11 If an EIA is determined to be required, the Applicant will prepare an ES, which sets out the findings from the technical assessments undertaken. The ES is then submitted to the Local Planning Authority alongside an application for Planning Permission.

Assessment Methodology

Scoping

1.12 An EIA Screening and Scoping Report was prepared by Deloitte Real Estate with input from the technical consultant team for the project. It was submitted to KMDC) as the Local Planning Authority on 27 September 2018.

1.13 A formal EIA Scoping Opinion was issued by KDMC on 25 May 2019, see Appendix 2.2.

Technical Topics not included in the Environmental Impact Assessment

1.14 It is considered that the Proposed Development will not give rise to likely significant effects on the environment in respect of the following disciplines which therefore do not require inclusion within the ES. This has been agreed with KMDC through their scoping opinion based on an explanation for each discipline provided in the EIA Screening Report in Appendix 2.1.

1.15 These topics are:

- Wind Microclimate;
- Electrical Interference;
- Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare;
- Arboriculture;
- Human Health;
- Climate Change; and
- Odour.

Approach to Technical Studies

1.16 Each chapter takes a standard approach, which ensures consistency. This structure is broadly as follows:

Table 0.1: Structure of ES Technical Chapters

Technical Chapter Structure	
Introduction	Each technical chapter begins with an introduction providing context to the assessment work.
Policy Context	This section includes a summary of legislation (laws) and of national and local policies relevant to the environmental discipline in the context of the Proposed Development and the ES.
Assessment Methodology & Significance Criteria	This section describes the method or approach employed in the assessment of impacts, the criteria against which the significance of effects has been evaluated, the sources of information used and any technical difficulties encountered. Relevant legislation is also identified.
Baseline Conditions	This section describes and evaluates the existing environmental conditions i.e. the current situation and anticipated changes over time assuming the Site is not developed. This is a critical part of the EIA process as it provides a measure against which potential environmental effects can be assessed.
Identification and Evaluation of Key Impacts	This section identifies the likely significant effects on the environment resulting from the Proposed Development. A description of the likely effects of the Proposed Development and an assessment of their predicted significance is provided in relation to the discipline being considered. The assessment of effect significance has been undertaken using appropriate quality standards. Where no such standards exist, the judgments that underpin the attribution of significance are described. The guidelines, methods and techniques used in the process of determining significance of effects are contained within each of the technical chapters presented.
Mitigation Measures	One of the main aims of the EIA process is to develop suitable mitigation measures to avoid, reduce or compensate for any significant adverse (negative) effects of a project.

Technical Chapter Structure	
	This section of each technical chapter describes the measures which would be implemented to mitigate potential adverse effects. Where possible, enhancement measures have also been proposed.
Cumulative Effects	This section considers the cumulative (combined) effects of the Proposed Development with any other committed developments identified within the vicinity of the Site. Any likely significant effects on the environment arising in this respect are set out in this section. There are two distinct types of cumulative effects: Type 1 - Cumulative effects are the effects on identified receptors arising from a combination of impacts related to the Proposed Development. Type 2 - Cumulative effects are those that arise from incremental changes caused by other consented or reasonably foreseeable activities ('committed developments') together with the Proposed Development.
Residual Effects	The residual effects, i.e. the remaining effects of the Proposed Development assuming implementation of the proposed mitigation measures, have been estimated and presented. The methods used to make these estimates are described and proposed methods of treatment for any residual effects have been identified and quantified where possible.
Summary	Each technical chapter concludes with a brief summary outlining the likely residual effects of the Proposed Development.

Objectivity

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

Structure of the NTS

1.18 The remainder of this NTS outlines the Proposed Development in non-technical terms and then provides a summary of each technical chapter using non-technical language.

Further Information

1.19 More detailed analysis of the findings described within the NTS can be found within the compiled ES and other documents submitted in support of the Planning Application.

1.20 The ES is available for public viewing on KMDC's Planning Online website at the following address: https://www.kirklees.gov.uk/beta/planning-applications/search-for-planning-applications/default.aspx once the application has been submitted and validated.

1.21 The ES may be purchased in volumes, the costs of which are set out below:

- Volume 1: ES Main Text and Figures - £150
- Volume 2: ES Appendices - £150
- Non-Technical Summary (NTS) - £15
- Full Copy (Volumes 1, 2 and 3) of the ES on CD - £15

1.22 For copies of any of the above, please contact Deloitte Real Estate:

Land east of Leeds Road– Planning and EIA Team

Deloitte Real Estate
1 City Square
Leeds
LS1 2AL

Site Location and Description

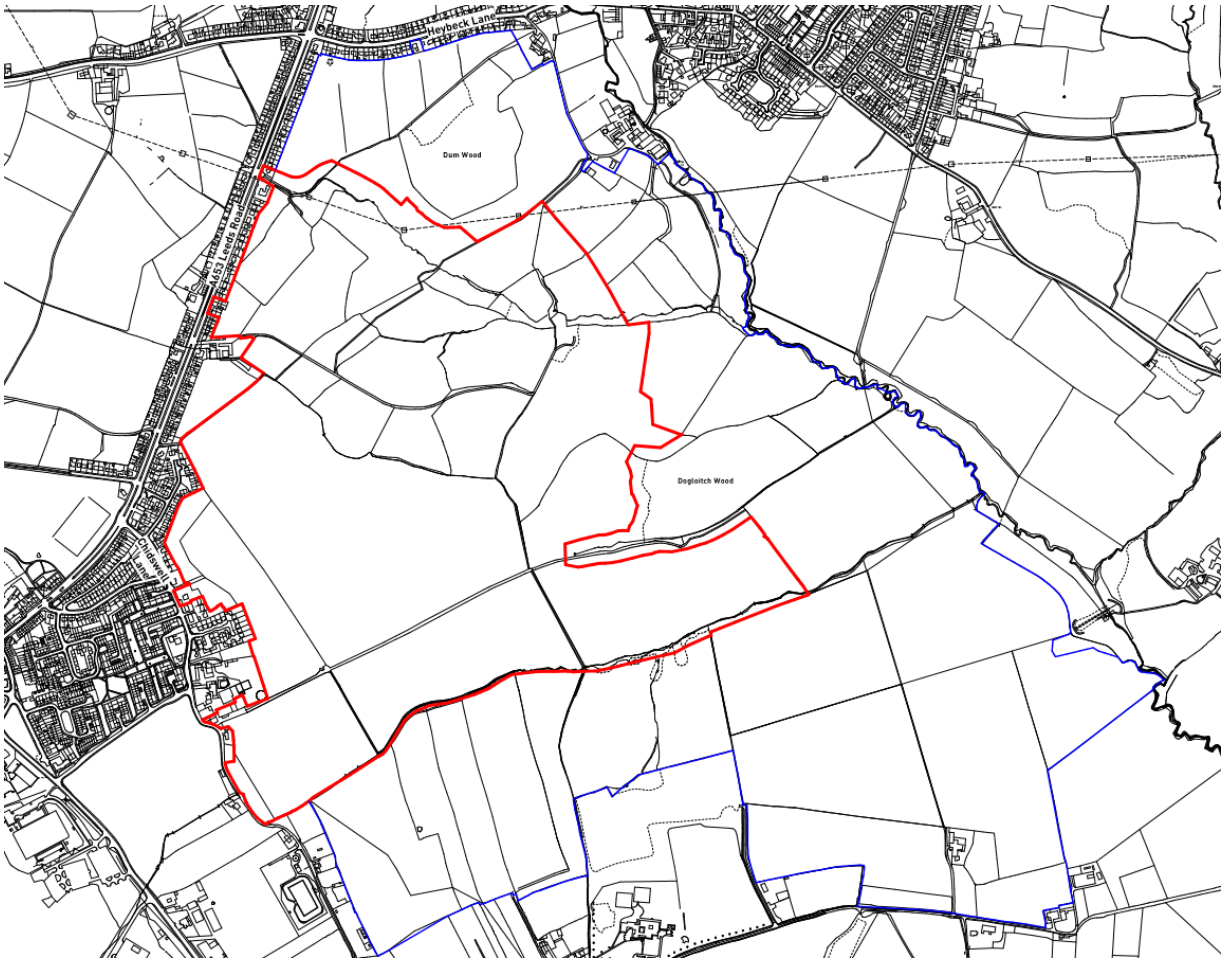
1.23 The Application Site (hereafter referred to as 'the Site') covers an area of approximately 112 ha and comprises a mixture of arable and pastoral agricultural land that is divided by hedgerows into several fields. The Site has not been previously developed.

1.24 The Site is gently undulating, with two notable landscape features; a higher 'ridge' to the west of the centre, and a 'bowl-like' valley to the north, drained by streams and ditches. The Site is divided by hedgerows into several fields.

1.25 Access into the Site can currently be gained from tracks off Leeds Road and Chidswell Lane.

1.26 There are neighbouring residential properties to the west of the Site, which form an extensive pattern of ribbon development along Leeds Road. The properties predominately comprise a mix of early and late century bungalows and semi-detached properties fronting the main arterial highway routes. Residential development also lies to the north-west. Agricultural land to the north separates the Site from Heybeck Lane and the residential development that fronts onto it. Further agricultural land and Dogloitch Wood is located to the east of the Site, outside the planning application boundaries.

Figure 1 - Site Location Plan



Planning History

1.27 A planning history search for the Site has been undertaken using KMDC's planning application search system. No previous planning applications for the Site have been identified.

1.28 There are two planning applications for development beyond the Site which are of relevance to the Site and the Proposed Development. These planning applications have been considered within the cumulative impact section of the Environmental Statement:

Table 1.2: Planning Applications of Relevance

Planning reference	Description of development	Relevance to the Site and the Proposed Development
2019/62/92787/E	*Land at Owl Lane* Erection of 252 dwellings with open space, landscaping and associated infrastructure.	**Proposed Development in close proximity to the Site.**
Planning Portal reference: PP-08249801	*Land to the south of Heybeck Lane* Outline planning permission for residential development (Use Class C3) of up to 181 homes, highway works including access off Heybeck Lane, landscaping, ground works, and other ancillary works. All matters are reserved apart from access.	**Application submitted simultaneously by C.C. Projects for land adjacent to the Site.**

Transport and Accessibility

1.29 The Site is located to the east of the A653 Leeds Road dual carriageway, which is a strategic corridor between Dewsbury and Leeds. In the immediate vicinity of the Site, Leeds Road runs in a north-south direction, adjoining the A638 Wakefield Road and Junction 28 (the Tingley Interchange) of the M62 Motorway to the north. The A638 Wakefield Road links with the M1 Motorway Junction 40 to the east of the site.

1.30 Dewsbury Railway Station is located approximately 3.5 km to the south-west of the Site. Batley Railway Station is located approximately 2.5 km to the west of the Site. Both stations provide services to Leeds and Huddersfield. Dewsbury provides services to Manchester Airport, Manchester Piccadilly, Middlesbrough and Hull. Both stations can be accessed via existing bus routes and bus stops are provided close to both stations. Dewsbury Railway Station also has a dedicated public transport interchange facility, located directly outside the station.

1.31 The Site is within the Leeds Metro Rail Zonal fare system with the border of zones 2 and 3 being between Batley and Dewsbury Railway Stations.

1.32 Various bus stops are located on the roads surrounding the Site, providing connections to major employment areas and town centres in the Kirklees District and beyond, including Dewsbury, Huddersfield, Wakefield and Leeds.

1.33 The Proposed Development provides four points of vehicular access onto the local highway network. All proposed Site access junctions have been subject to extensive discussions and have been agreed in principle with KMDC Highways officers.

1.34 The proposed locations for Site access are illustrated within the Access Parameter Plan (drawing ref: 00-205 Rev E). New pedestrian access to the Site will accompany all four of the vehicular access points.

1.35 Full details of the existing baseline in relation to traffic and transport options are set out within Chapter 13 of this ES provides a full detailed understanding of how the Proposed Development seeks to capitalise and improve on these assets.

Historic Environment

1.36 There are no designated heritage assets within the Site and it does not fall within a Conservation Area. There are a number of heritage assets (both designated and non-designated) in the surrounding area:

- Station Road Batley Conservation Area, which lies c. 1.15 km to the west;
- The Scheduled Monument of Howley Hall, which lies c. 1.7 km to the north west; and
- Six Grade II Listed Buildings comprising: the Church of St Mary and a group of tombs and grave slabs, Haigh Hall, Manor Farm Barn, 25 and 27 Baghill Road, the Church of St Paul, and Toll Gates outside Toll Bar Cottage.

Description of Development

1.37 The description of development as described in the application form for Outline Planning Permission is as follows:

"Outline planning application (all matters reserved except access), for the demolition of existing buildings and the development of a phased, mixed use scheme comprising residential development (up to 1,354 dwellings, including up to 1 hectare of retirement living (C2/C3), up to 35 ha of employment development (B1, B2, B8 uses), a local centre (comprising A1/A2/A3/A4/A5/D1/D2 uses), primary school, green space, access and other associated infrastructure."

1.38 The Application includes Parameters Plans which set the parameters for a future detailed scheme and reflects the outcome of a range of technical assessments. There are six Parameter Plans which set out the following:

- (Drawing ref: 00-201 Rev D) – Proposed Parameter Plan: Developable Area & Use – sets out the extents of the proposed land parcels and their intended uses;
- (Drawing ref: 00-203 Rev D) – Proposed Parameter Plan: Maximum Building Heights – sets the maximum building heights for proposed buildings including dwellings, employment development and the local centre.
- (Drawing ref: 00-205 Rev D) – Proposed Parameter Plan: Access - identifies the vehicular access points and spine road corridors. It also identifies a potential future vehicular connection point to the adjacent MXS5 allocation.
- (Drawing ref: 00-202 Rev E) – Proposed Parameter Plan: Blue Infrastructure – identifies the broad locations for strategic blue infrastructure within which sustainable urban drainage ponds and underground attenuation will be sited. Swales and localised drainage ponds are excluded from this drawing and will be detailed at a subsequent Reserved Matters stage as individual phases of development are brought forward.
- (Drawing ref: 00-204 Rev F) – Proposed Parameter Plan: Green Infrastructure – identifies the broad locations for strategic green infrastructure including publically accessible open space, green design buffers and mitigation measures.

1.39 The details of the development will be determined by subsequent submissions by way of Reserved Matters and will be provided by the future developer(s) of the Site. A development partner will be identified following the granting of any Outline Planning Permission.

1.40 An Illustrative Masterplan (drawing ref: 00-001 Rev P), is provided which incorporates the development principles set out on the Parameters Plan, and takes into account the conclusions of a range of technical reports prepared for the Site, in demonstrating one way in which the the Site could be suitably and appropriately developed within the parameters. It includes:

- Development of up to 1,354 dwellings ranging in size, type and tenure;
- Development of up to 35 hectares of employment uses with a maximum floor area capacity of 122,500 sq. m;
- Development of a local centre providing up to 1,500 sq. m. of flexible floorspace for commercial and community use;
- Vehicular access from Leeds Road, Chidswell Lane and Owl Lane, with a potential future pedestrian access from Heybeck Lane;
- New pedestrian and cycle links;
- The incorporation of publically accessible open space;
- A 2ha site for a two-form entry primary school including early years provision;
- A Sustainable Drainage System (SuDs) to drain the development in a sustainable way; and
- Proposed landscaped corridors throughout the Site and appropriate buffers between the Site and the woodland blocks, Dum Wood and Dogloitch Wood which falls outside the application boundary.

The Environmental Impact Assessment

1.41 The Environmental Impact Assessment ("EIA") process is a procedure used to determine the potential environmental effects of a proposed development. The Environmental Statement ("the ES") is the document containing the findings of the EIA.

1.42 Full results of the EIA process are presented within Volumes 1 and 2 of the ES.

1.43 Volume 1 of the Environmental Statement has been prepared by Deloitte and other technical consultants, and includes the following disciplines:

Table 1.3: ES Structure

Chapter No.	Chapter Title	Description	Author
Volume 1			
1.	Introduction	Introduction to the ES, EIA requirements, details of the project team, ES organisation and availability.	Deloitte Real Estate
2.	EIA Methodology	Methods used to prepare each chapter, description of ES structure and content, generic significance criteria, scoping and consultation.	Deloitte Real Estate

Chapter No.	Chapter Title	Description	Author
3.	Alternatives and Design Evolution	Outline of the main alternatives considered by the Applicant.	Deloitte Real Estate
4.	Site and Development Description	Site description and details of the Proposed Development.	Deloitte Real Estate
5.	Construction Programme and Methodology	Outline details of anticipated programme for development and construction methodology.	Deloitte Real Estate
6.	Socio Economic	Assessment of the effects of the Proposed Development on socio-economic receptors.	Deloitte Real Estate
7.	Landscape and Visual Impact	Assessment of the visual impact of the Proposed Development on the landscape.	Re-form
8.	Archaeology and Historic Environment	Assessment of the effects of the Proposed Development on local heritage and archaeology.	Cotswold Archaeology
9.	Noise and Vibration	Assessment of the effects of the Proposed Development relating to noise and vibration.	Delta Simons
10.	Air Quality	Assessment of existing air quality surrounding the Proposed Development and the likely impacts on air quality during construction and subsequent operation.	Delta Simons
11.	Flood Risk and Drainage	Assessment of the effects of the Proposed Development relating to flood risk and drainage.	Delta Simons
12.	Contamination	Assessment of the existing ground conditions surrounding the Proposed Development and proposes potential mitigation measures if necessary.	Patrick Parsons
13.	Transport	Assessment of existing transport surrounding the Proposed Development in addition to the likely impacts on transport during construction and subsequent operation.	Pell Frischmann
14.	Ecology	Assessment of existing ecology on Site in addition to the likely impacts on ecology during construction and subsequent operation.	Brooks Ecological

Chapter No.	Chapter Title	Description	Author
15.	Type 1 Cumulative Effects	Review of inter project effects, which are combined effects arising from the Proposed Development on defined sensitive receptors.	Deloitte Real Estate
16.	Summary of Residual Impacts	Summary of the effects that remain after mitigation.	Deloitte Real Estate

1.44 Volume 2 contains the Technical Appendices to support the ES.

1.45 This Statement forms the Non-Technical Summary of the technical ES Chapters and supporting information.

Project Team

1.46 Details of the project team are set out in Table 1.4 below.

Table 1.4: Project Team

Organisation	Expertise/Role	Qualifications
Deloitte Real Estate	Town Planning, EIA Co-ordination	RTPI, RICS, IEMA EIA Quality Mark
Re-form	Landscape and Visual Impact	Chartered Member LI
Cotswold Archaeology	Heritage and Archaeology	CIfA
Pell Frischmann	Transport	BA/BSc; MA
Delta Simons	Air Quality. Noise and Vibration, Flood Risk and Drainage	Practitoner Member IEMA
Contamination	Patrick Parsons	CGeol, MSc, BSc
Brooks Ecological	Ecology	BSc. MCIEEM

Planning Context

1.47 Throughout the design process and the EIA process, full regard has been had to Government advice (in the form of the National Planning Policy (NPPF)) and guidance set out in the relevant local planning policy documents. The application proposals have also been prepared by the project partners in consultation with KMDC and a range of technical stakeholders.

1.48 A full review of the Proposed Development against planning policy is included in the Planning Statement, which accompanies the planning application and this is summarised within the ES. The review concludes that the proposals are fully in accordance with the adopted Local Plan and other material considerations.

Consideration of Alternative Options

Introduction

1.49 The EIA Regulations require the ES to identify the alternatives that were considered during the design process. The EIA has considered the 'Do Nothing' alternative, alternative locations, alternative uses, and the alternative design/layout.

The 'do nothing' Alternative

1.50 The 'do nothing' scenario refers to the option of leaving the Site in its current state, therefore retaining it as agricultural fields.

1.51 The Site is identified in the Leeds City Region Strategic Economic Plan and in the Kirklees Economic Strategy as playing a key role in helping to transform Dewsbury and the Site is allocated for development in the [Local Plan].

1.52 If the Site is left in its current state, this will result in an important component of the Local Plan not being delivered, and thus planned housing delivery and economic growth in the local authority area is likely to be jeopardised.

1.53 It is considered that the 'do nothing' alternate option will be inferior to the Proposed Development, which will boost economic activity and housing delivery in the area and will support significant social improvements on site and up to a regional scale. Full details of the socio-economic impact are set out in Chapter 9 (Socio-Economic Impact) of Volume 1 of the ES.

Consideration of Alternative Locations

1.54 Residential and employment generating uses in this location are supported in local policy contained within the adopted Kirklees Local Plan (site reference MXS7). To this effect, the Site has been supported for development by various documents produced by KMDC and strategic authorities within the Leeds City Region area.

1.55 In addition to this clear policy support, the Site is also well located for the Proposed Development. Although the Site lies beyond the existing physical boundary of Woodkirk, there are no statutory landscape or ecological designations relating to the Site itself which may restrict development. The principle of development in this location has been agreed with the Local Planning Authority, as indicated by the local plan site allocation. This may not be the case if considering alternate sites. Therefore the Site is in a suitable location for mixed use development.

Consideration of Alternative Uses for the Site

1.56 Due to the size of the Site, it is considered that the only feasible alternative uses for the Site in relation to the Proposed Development are commercial development uses, such as: retail and leisure; logistics; and, industrial/ business park.

1.57 Retail and leisure have been discounted as it can be reasonably assumed that a development providing up to 112 ha of retail will have an adverse effect on the vitality and viability of nearby existing town, district and local centres.

1.58 Logistics development is not preferable as the visual impact of substantial development would have a negative impact on the character of Woodkirk and Chidswell. Logistics development would increase the trips undertaken by heavy goods vehicles in the area which would have a negative impact on the capacity of the highways networks and air quality. Additionally the employment requirements of the district have already been assessed through the Local Plan and the most appropriate locations for logistics development have been identified.

1.59 Industrial development would incorporate the issues identified in relation to retail and leisure and logistics development. It can be assumed that 112 ha of industrial development could have an

adverse effect on the character of Woodkirk and Chidswell and affect the vitality and viability of existing industrial locations.

1.60 The Site is included within an allocation for mixed use development in the Kirklees Local Plan (adopted February 2019) (KLP19 site reference MXS7). Therefore the Site cannot be solely developed for commercial development uses as this would be contrary to adopted local planning policy, and detrimental to the delivery of the plan.

1.61 A large part of the Site is proposed for residential development as required by its allocation within KLP19. The Site has therefore been identified by the LPA as being within a suitable and attractive market location. The calculated objectively assessed need for dwellings in KMDC's administrative area results in the requirement for an average of 1,730 dwellings per annum over the plan period. The areas identified for development on the Parameters Plan have an indicative dwelling capacity of up to 1,354 units; therefore, developing the land solely for a non-residential use would have a detrimental effect on whether KMDC can meet their housing delivery requirement over the plan period.

Consideration of Alternative Scale and Massing

1.62 Different scales and massing options were considered as part of the design process, the aim of which was to maximise the suitable use of the Site, be appropriate to the local character, and minimise any negative impacts on adjacent land uses and amenity.

1.63 The height and maximum extent of development has been fixed by the Developable Area and Use Parameter Plan (drawing ref: 00-201 Revision F) and the Maximum Building Heights Parameter Plan (drawing ref: 00-203 Revision F) and are considered to be in keeping with the local character and scale. The final scale will be determined at Reserved Matters stage in accordance with those parameters.

1.64 The Design and Access Statement submitted with the application details how the design of the Proposed Development has been formulated. The options considered for the development reflected the context of the Site and took into account the environmental impacts arising. The design of the Proposed Development has been informed by the consideration of the environmental impacts, as assessed in depth within the ES.

Construction Management and Phasing

Introduction

1.65 A primary aim throughout the proposed construction works will be to minimise the impact of the works on the surrounding environment (including neighbours, neighbouring buildings, local infrastructure etc). This will be achieved via close collaboration between all project team members.

Programme

1.66 The development programme, including obtaining Reserved Matters and undertaking Site preparation works, is anticipated to be split into a number of phases and the full development is anticipated to complete within 10 - 15 years.

1.67 Any works outside of normal working hours would be via prior agreement with the Council. It is noted that part of the Site is located in close proximity to existing residential developments. Restrictions on working hours will be advised to potential contractors at the procurement stage and will be a term of any construction contracts.

1.68 To ensure that suitable contractors are appointed, all potential contractors will have their environmental credentials vetted and asked to submit their company Environmental Policies and Procedures.

1.69 The Construction Design and Management Regulations 2015 will apply to this project and all appropriate controls and systems will be in place to comply with the standards of the Regulations and associated guidance.

1.70 Every stage of the project will be pre-risk assessed and appropriate controls applied, sub-contractors will be pre vetted and will be subject to extensive pre-contract requirements of information transfer and risk assessment.

1.71 The Main Contractor will at the earliest possible stage of the project enter into dialogue with the all relevant parties including neighbours to ensure there is effective coordination throughout all stages of construction.

Socio-Economics

Introduction

1.72 The Socio-economic Chapter of the Environmental Statement assesses the likely significant effects of the Proposed Development on the environment with respect to socio-economic considerations.

1.73 It describes the planning policy context, methods used to assess the effects, the baseline conditions, and the potential effects of the Proposed Development during both its construction and operational phases. It also includes discussion of the mitigation measures required to mitigate any likely significant adverse effects, and measures to maximise the opportunities presented by the Proposed Development.

Baseline

1.74 Baseline conditions at the site scale and local/sub-regional scale have been gathered with regard to the following socio-economic factors:

- Local Population;
- Housing;
- Local Expenditure;
- Employment;
- Healthcare Facilities;
- Education;
- Open Space, Recreation and Amenity; and
- Crime.

Methodology

1.75 The assessment considered the impacts of the Proposed Development during the construction phase for employment and local expenditure. The other socio-economic factors were not considered within the construction phase assessment as no impacts are expected.

1.76 The assessment considered the impacts of the Proposed Development during the operation phase for all socio-economic factors to ascertain any requirement for incorporating mitigation measures.

1.77 Data has been obtained from a range of sources including ONS, NHS Choices and Kirklees Metropolitan Borough Council.

1.78 Assumptions and limitations of the assessment are summarised below:

- Baseline conditions have been established using available published data/ statistics at the time of writing (Winter 2019);
- The availability of data at pre-determined spatial scales has, to an extent, determined the study areas and the areas against which comparisons are drawn within the assessments;
- Qualitative assessments have been based on professional judgement, expertise and published guidance where available;
- Estimated construction costs have been provided by Savills, and will be subject to change during the Reserved Matters and detailed design process. The estimated figure is not provided within the ES as it is commercially sensitive, however it can be shared upon request;
- Multipliers have been used where appropriate, to quantify effects;
- Where applicable, data searches have been performed using the nearest postcode to the Site (WF12 7QY);
- Some assessments were based upon 2011 Census figures, which do not necessarily demonstrate the contemporary characteristics of the area;
- The expenditure assessment assumes all workers will spend an average amount per day on lunch;
- Healthcare data represents a snapshot in time of when the data was gathered in Winter 2019 at the time this planning application was prepared; and
- Due to inherent difficulties in assessing the significance of socio-economic effects, and lack of formal guidance, it is inevitable that there will be a degree of subjectivity within the assessment.

Summary of Likely Significant Effects

Construction Phase

1.79 The likely significance of those socio-economic effects scoped in to the construction phase assessment are summarised below. All construction phase socio-economic effects are considered to be short term and temporary in nature.

Employment

1.80 Construction phase employment at the Site is expected to vary across the construction phase, and so the estimated number of employees is considered to represent an average across the construction phase.

1.81 Applying the estimated construction cost ratio the Proposed Development would be expected to create 1507-person years of construction employment. The Site is anticipated to be constructed over 10-15 years, which equates to the Proposed Development generating approximately 121 FTE construction jobs over the construction phase.

1.82 Indirect job creation is also anticipated to arise from the Proposed Development's construction, through additional demand within the supply chain. This has been calculated to be approximately an additional 46 FTE.

1.83 Total (ie, direct and indirect) job creation within the study area during the construction phase is therefore estimated as 167 FTE.

1.84 The existing site provides up to 10 FTE jobs. Therefore, as the Proposed Development is the direct cause of loss of a small number of existing jobs, meaning the net employment generation at the Site (111 FTE) and within the wider study area during the construction phase (36 FTE) is considered to represent a temporary moderate beneficial effect.

Local Expenditure

1.85 Applying the Visa lunchtime expenditure assumption (£3.69) to the forecast number of construction employees expected to be directly employed (121 FTE) during the c. 12.5 year construction period over an assumed 233 day working year yields a figure of £1,300,402.12. As some spending would be expected to occur outside the study area, a 'high' leakage rate (25%) has been used to reflect the Site's location. Therefore it is anticipated approximately £975,301.60 would be spent within the local area over the c. 12.5 year construction period.

1.86 It is considered that the majority of this increased expenditure would benefit businesses in the local area. Therefore, effects on local expenditure are considered to be temporary and localised in nature over the construction period, and of moderate beneficial significance.

Operational Phase

1.87 The likely significance of those socio-economic effects scoped in to the operational phase assessment are summarised below. All construction phase socio-economic effects are considered to be permanent in nature.

1.88 Operational effects will vary dependent on the phasing of the development. An Indicative Phasing Plan has been submitted with the application. Details relating to phasing will be determined by subsequent submissions by way of Reserved Matters and will be provided by the future developer of the Site.

Local Population

1.89 The Proposed Development includes up to 1,354 residential units of varying sizes. Assuming an average household in KMDC of 2.52 people per household (ONS, 2011 Census), it is estimated that the Proposed Development will have a population of 3,412 people.

1.90 No people currently reside at the Site.

1.91 The additional population would increase the economic activity in Chidswell, therefore the effects on population at the Site scale are considered to be of moderate beneficial significance, and permanent in nature.

Housing

1.92 The Proposed Development will involve the net addition of 1,354 residential units at a medium density, and is therefore in-keeping with the planning objectives for the area.

1.93 The Proposed Development would have significant beneficial effects on local housing provision, providing a large number of new, high-quality residential units, plus retirement accommodation / assisted living. It would also make a significant contribution to local housing targets. Considering the above, the effect of the Proposed Development on housing is considered to be of major beneficial significance at the Dewsbury East and Batley East wards and KMDC scale.

Employment

1.94 The Proposed Development is projected to generate approximately 3,019 FTE jobs, based on the proposed employment use floorspace and applying the average density for each use class listed in the Employment Density Guide 3rd Edition (Homes and Communities Agency 2015). In addition to this, cleaners and maintenance staff would be provided by subcontractors, however in order to provide a conservative estimate of employment such jobs have not been estimated. The additional employment represents an increase in full time employment within the Dewsbury East

and Batley East wards in comparison to the baseline situation (up to 10 FTE jobs) of the existing agricultural site.

1.95 Overall, the effect on employment is assessed as major beneficial.

Local Expenditure

1.96 Using the average housing weekly expenditure, the Proposed Development is anticipated to spend an additional £36.7m per year.

1.97 The Proposed Development will generate additional Council Tax revenue for KMDC. The likely tax band is unknown at this stage but due to the quantum of development it is expected to make a significant contribution.

1.98 In addition, there will be a large lunch time spend by the 3,019 FTE employed at the Site. Using the daily average of £3.69 per worker, as outlined above, this would equate to £2,484,244.53 over a 223 working day year.

1.99 Therefore, the effect of additional expenditure during the operational phase is considered to be of major beneficial significance to Dewsbury East ward, Batley East ward and KMDC economies, and permanent in nature.

Healthcare Facilities

1.100 25 GP surgeries and at least 5 dental surgeries located within the 3 mile catchment of the Site are accepting new NHS patients. Based on the Proposed Development population of 3,412 people, on average, each GP surgery would need to take 136 new patients, and each dentist 682 patients, in order to absorb the additional population.

1.101 Effects are therefore assessed as of minor adverse significance and permanent at the local scale.

Education

1.102 The Proposed Development is estimated to accommodate a population of 3,412 people. Based on mid-2018 ONS data, the 0-4 age group accounts for 6.8% of the Dewsbury East and Batley East population, and the 5-11 year age group accounts for 9.8% of the population.

1.103 There are 17 primary schools within 2 miles of the Site. Therefore, each primary school would need to accommodate approximately 33 children, however as a primary school is proposed as part of the Proposed Development it is anticipated that the majority of new primary-school aged residents will be accommodated by the on-site school.

1.104 Based on mid-2018 ONS data, the 12-18 age group accounts for 9.2% of the population.

1.105 There are 9 secondary schools within 3 miles of the Site. Therefore, each secondary school would need to accommodate approximately 37 children.

Open Space, Recreation and Amenity

1.106 It is anticipated that future residents of the Proposed Development would make use of open space for recreation and amenity purposes.

1.107 The Proposed Development will contain c. 17 ha of open space for use by future and surrounding residents comprising allotments; multi-use games areas; public open space; young people's provision; parks; amenity greenspace; and, natural/ semi-natural greenspace. This will be of high quality and is expected to facilitate a range of activities.

1.108 The proposed pedestrian and cycle network will greatly enhance accessibility to green space for existing and future residents. This will contribute to creating healthy lifestyles in the community as residents will be encouraged by the creation of new pedestrian links and publically accessible open space.

1.109 The overall effect is therefore considered to be minor beneficial and permanent at the Site scale.

Crime

1.110 The Proposed Development will incorporate measures to 'design out' crime, and will be built in accordance with Secured by Design standards. Such elements include increasing natural surveillance and active frontages around the Site, and it is expected that CCTV would also be included as part of the employment uses proposed.

1.111 The incorporation of these measures into the Proposed Development is expected to result in a reduction for opportunities for and perceptions of crime in and around the Site. The inclusion of appropriate lighting, and the overall addition of a new population will increase activity in the area and is expected to have a beneficial effect upon crime and reducing opportunities for crime at and around the Site.

1.112 Overall, the effect is assessed as minor beneficial and permanent at the local scale.

Mitigation

1.113 During both the construction and operational phases, all effects have been assessed to be of between minor adverse and major beneficial significance (ie. Not significant adverse); therefore, as no significant adverse effects are predicted, no mitigation is required. However, as the application is Outline and the range of uses proposed for the community centre is not confirmed, if for example there is a need for a doctor's surgery as a means of mitigation, this can be addressed through reserved matters.

Residual Effects

1.114 All residual effects are expected to be the same as those predicted to be the same as the previous section.

Cumulative Effects

1.115 The Proposed Development's potential to contribute cumulative socio-economic effects has been assessed. The cumulative effects of the Proposed Development in combination with the committed developments have been assessed qualitatively, using professional judgement and with reference to publicly available information.

1.116 All cumulative effects are expected to be negligible or beneficial, with the exception of the cumulative effects on the healthcare system.

1.117 Of those schemes which propose new non-residential uses these would not be expected to increase demand upon healthcare facilities, and so cumulative effects are not anticipated.

1.118 Although there are GPs and dentist surgeries accepting patients near to the Site, it is not known whether there is sufficient capacity for the relevant facilities across the wider area to absorb the additional cumulative residents.

1.119 The effect of the Proposed Development on healthcare facilities, in isolation, is assessed as minor adverse. It could be anticipated that cumulative adverse effects on healthcare would result if all of the (residential) committed developments came forward without mitigation. Where adverse effects are identified as part of the individual committed developments then appropriate mitigation measures would be investigated and implemented as part of the planning process. Mitigation for committed developments will likely be in the form of financial contributions secured through S.106 agreements, and these contributions would be required in order to mitigate effects with respect to healthcare facilities. Therefore, following mitigation, the cumulative effects on the primary healthcare system are assessed as minor adverse. This needs to be considered within the context of the unavailability of information with regards to all the healthcare facilities, and

potential future healthcare facilities. It is reasonable to assume a number of these facilities will accept new patients, potentially mitigating this effect.

Summary

1.120 Overall, the assessment has concluded that the impact of future residents on existing neighbourhood services is not expected to give rise to significant effects, and so the Proposed Development would not be expected to detrimentally impact the socio-economic conditions of the existing area.

Landscape and Visual Impact

Introduction

1.121 The Landscape and Visual Impact Assessment (LVIA) of the ES has been prepared by Re-form Landscape Architecture and assesses the likely significant effects of the Proposed Development with respect to landscape fabric and character, and visual amenity.

Baseline

1.122 The Site lies within or in close proximity to a number of established character area. These are:

- **National Character Area (NCA) 38: Nottinghamshire Derbyshire and Yorkshire Coalfields**, as defined by Natural England.

  Key Characteristics of the NCA, displayed by the Site and study area:

  - A low-lying landscape of rolling ridges…underlain by Pennine Coal Measures.
  - A mixed pattern of built-up areas, industrial land, pockets of dereliction and farmed open country.
  - Small, fragmented remnants of pre-industrial landscapes and more recent creation of semi-natural vegetation, including woodlands…with field boundaries of clipped hedges or fences.
  - Many areas affected by urban fringe pressures creating fragmented landscape, some with a dilapidated character, separated by substantial stretches of intact agricultural land in both arable and pastoral use.
  - Widespread influence of transport routes, including…roads…with ribbon developments emphasising the urban influence in the landscape.
  - Continuing development pressure including land renewal and regeneration projects, especially along river corridors and around towns.

- **Local Character Area (LCA) E8: Batley-Dewsbury Rural Fringes**, as defined by the Kirklees District Landscape Character Assessment.

  This LCA is composed of nine units of rural fringe land, located in different parts of the district. The Site is located in the unit of rural fringe land north-east of Dewsbury.

  The LCA has some valued characteristics including a Scheduled Monument at Howley Hall (ref 1016323), several Grade II Listed Buildings, pockets of ancient replanted woodland, and a number of Tree Preservation Orders. Its character is, however, compromised by some detracting elements such as large pylons, and by its inter-visibility with neighbouring residential areas (generally composed of large-scale housing dating from the twentieth century) and road

infrastructure, including the M1 motorway located c.1.5km to the east. Despite these detracting elements, the LCA still plays a role as a setting for development.

Due to its proximity to a number of residential areas, the semi-natural landscape provides visual amenity, and also serves a recreational function through its extensive network of PROWs. These provide access to relatively tranquil places, set within a highly developed landscape.

The Local Plan designates some regions of the LCA as Green Belt, though the Site itself no longer carries this designation as it has been allocated for development (Land at Chidswell, allocation MXS7 Mixed Use, covering 120.78ha).

- **LCA Northern Coal Field**, as defined by the Landscape Character Assessment of Wakefield District.

The landscape is characterised by large open fields, intermittent or overgrown hedgerows with few hedgerow trees, small tree copses and tree-lined becks that incise a rolling topography. Beyond the openness of the rural landscape, modern residential settlements are visible in all directions, and from high points within the landscape the M1 motorway can be seen to the east. The landscape has a relatively weak landscape structure with limited features worthy of conservation, and a number of detracting features, including large pylons. The quality of the landscape is judged to be poor.

However, this region of the LCA also lies within Green Belt, which serves to maintain openness between settlements. The designation keeps the northwards expansion of Gawthorpe in check, as well as the edges of East & West Ardsley. The designation will also keep in check the north-eastern and southern expansion of the Site. There are also a number of PROWs within this part of the LCA. These footpaths connect nearby settlements and provide recreational access to the countryside which includes relatively tranquil areas.

The LCA will not be directly affected by the Proposed Development, as the Site is located beyond its northern boundary. The Proposed Development will have some limited effect on openness, but this will not compromise the Green Belt function of land within the LCA. It is judged that the LCA is able to accommodate the Proposed Development without adverse consequences for the LCA or delivery of landscape planning policies. The susceptibility of the LCA is therefore judged to be low.

- **LCA Arable Fringe Farmland**, as defined by the Leeds Landscape Assessment[1]

Land abutting the northern corner of the Site is defined as LCA Arable Fringe Farmland. This is further subdivided into Landscape Unit LCM6 East Ardsley Fringe.

Methodology

1.123 The methodology follows the 'Guidelines for Landscape and Visual Impact Assessment' (GLVIA) Third Edition' (2013) – produced by the Landscape Institute (LI). The objective of the assessment process is to identify and evaluate the likely significant effects arising from the Proposed Development for both Landscape and Visual Receptors. The assessment of the effects of the Proposed Development on the Landscape deals with two principal issues. The first of these is the predicted loss of existing landscape components within the development site area and the other main issue will be the addition of the proposed built structures and their influence on the character of the local landscape, principally through the perception of change in the local landscape character. In terms of visual effects these are gauged by assessing, and confirming a Zone of Theoretical Visibility and selecting a number of Representative Viewpoints for assessment. The locations of these are shown in Appendix 7.1. In both cases, for landscape and

[1] LCA Arable Fringe Farmland, as defined by the Leeds Landscape Assessment

visual effects, the sensitivity of the receptors in each case is assessed against the degree of change in order to determine the likely significance of effect. A judgement is then made as to whether the effect is of major to negligible significance using the Effect Significance Matrix and then a judgement made as to whether the effect is **significant** or **not significant** in EIA Regulation terms. For the purposes of this Landscape and Visual Impact Assessment, effects of **Moderate Significance** and above are considered to be **Significant**. Those values of Minor and below are therefore deemed to be **Not Significant**. A professional judgement is then also made as to whether the effect is of an adverse or beneficial nature.

1.124 Please refer to Appendix 7.2 for detailed information regarding the assessment methodology and significance criteria.

Summary of Likely Effects

1.125

1.126 Proposals to retain existing water courses, hedgerows and woodland copses, together with additional tree planting, hedgerow laying/gapping up and creation of publicly accessible open space incorporating SuDs features, help mitigate the adverse effects of the Proposed Development by preserving and strengthening valued landscape features. This extensive Green Infrastructure network would extend across the Site, providing an attractive, naturalistic setting for proposed built form and helping to integrate the Proposed Development into the landscape.

1.127 The Maximum Building Heights Parameter Plan shows that the tallest commercial buildings will be located in the lowest parts of the Site. Taking the whole Site into consideration, which includes the proposed residential areas, school and community hub, the perceived magnitude of change with mitigation is judged to be low.

1.128 'Development Area and Use and Proposed Parameter Plan – Access' illustrates that some trees would be lost as a result of the Proposed Development. This loss could be mitigated through landscape proposals brought forward at reserved matters. Loss of trees would be compensated for through extensive tree planting throughout the Site. Belts of native trees are proposed within the Green Buffer running east-west through central regions of the Site, and other proposed green links, SUDs areas, and publicly accessible open space. Roads, including primary and secondary streets, are also to be planted with trees. These proposals, if incorporated at reserved matters stage would represent an overall betterment to the level of tree cover across the Site. As such, the magnitude of change, with the above mitigation, is judged to be medium.

1.129 Proposed Parameter Plans prevent development over existing water courses, and require the creation of additional areas for SUDS. More detailed landscape proposals included in any reserved matters applications would bring existing watercourses into positive management, ensuring that they contribute to the Site-wide SUDS strategy. Additional planting to watercourses would help improve their wildlife and amenity functions, generating synergies between blue and green infrastructure. The magnitude of change to existing watercourses, with mitigation, is judged to be low, and beneficial.

1.130 Proposed Parameter Plans – Development Area and Green Infrastructure indicate that it is likely that users of public rights of way will experience a less rural, open view than they do currently. In order to mitigate this, the landscape proposals brought forward at reserved matters stage would bring the PRoWs into active management, and would seek to protect the existing amenity to the extent practicable. Proposals would also connect the existing network to additional proposed routes, increasing connectivity across the Site. The magnitude of change to existing PROWS, with these mitigation measures, would be low, balancing some adverse and some beneficial elements.

1.131 Proposed Parameter Plan – Green Infrastructure includes corridors and buffers of landscape, as well as retained tree belts. More detailed proposals brought forward at the reserved matters stage would include a network of public spaces, set within a broader blue and green infrastructure framework. This framework would respond to, and would generate, varying degrees of activity.

Some areas of publicly accessible open space would be used intensively, while others would be for quieter use. Though relatively tranquil in the general context of the Proposed Development, proposed quiet areas would be less tranquil than baseline conditions. The resulting magnitude of change, with mitigation, to the sense of tranquillity is judged to be medium.

1.132 Despite incorporating a high degree of built form, the Proposed Development also includes an extensive green infrastructure network, which seeks to link existing site assets - such as woodland and hedgerows - with new, generously planted areas across the Site. This will help to visually break up built form, reducing to a degree, perceived loss of openness. In addition, the largest buildings comprising the commercial component of the Proposed Development would be located in the lowest reaches of the Site in order to minimise a sense of loss of openness. Taking the above mitigation measures into consideration, the magnitude of change caused by the Proposed Development on the sense of openness is still judged to be high.

Table 1.5 Summary of Landscape Effects following mitigation

	Character Area	Sensitivity of Landscape Receptor	Magnitude of change	Landscape Effects and nature without Mitigation	Magnitude of change with mitigation	Landscape Effect and nature with mitigation (residual effect)
1	**NCA 38**	Medium	Negligible	Negligible	Negligible	Negligible
2	**LCA E8**	Medium	High	Moderate-Major Adverse	High	Moderate-Major Adverse
3	**LCA Northern Coalfield**	Medium	Negligible	Negligible	Negligible	Negligible
4	**LCM 6**	Medium	Negligible	Negligible	Negligible	Negligible
5	**LCM 8**	Medium	Negligible	Negligible	Negligible	Negligible
6	**Settlement**	Low	Medium	Minor-Moderate Adverse	Medium	Minor-Moderate Adverse
7	**Topography**	Medium	Medium	Moderate Adverse	Low	Moderate Adverse
8	**Agricultural Land**	High	High	Major Adverse	High	Major Adverse
9	**Hedgerows**	Medium	Low	Minor Adverse	Low	Minor Beneficial
10	**Trees**	Medium	Low	Minor-Moderate Adverse	Medium	Moderate Beneficial

11	**Water Courses**	High	Low	Moderate Adverse	Low	Moderate Beneficial
12	**PROWS**	Medium	Medium	Moderate Adverse	Low	Minor-Moderate Adverse
13	**Sense of Tranquillity**	Medium	High	Major Adverse	Medium	Moderate-Major Adverse
14	**Sense of Openness**	High	High	Major Adverse	High	Major Adverse

Table 1.6 Summary of Visual Effects following mitigation

View	Proximity	Sensitivity of Visual Receptor	Magnitude of Change	Visual Effect and nature without Mitigation	Magnitude of change with mitigation	Visual Effect and nature with mitigation (residual effect)
1	Medium	High	Medium	Moderate-Major Adverse	Medium	Moderate-Major Adverse
2	Close	High	High	Major Adverse	High	Major Adverse
3	Medium	High	High	Major Adverse	High medium	Moderate Major Adverse
4	Medium	Medium	High	Moderate-Major Adverse	Medium	Moderate Adverse
5	Medium	Medium	Medium	Moderate Adverse	Medium	Moderate Adverse
6	Medium	Medium	Medium	Moderate Adverse	Low	Minor-Moderate Adverse
7	Long	Medium	Medium	Moderate Adverse	Medium	Moderate Adverse
8	Long	Medium	Medium	Moderate Adverse	Low	Minor Adverse
9	Close	High	High	Major Adverse	High	Major Adverse
10	Close	High	High	Major Adverse	High	Major Adverse

11	Close	High	High	Major Adverse	High	Major Adverse

Cumulative Effects

Construction Phase

1.133 The activities associated with the construction of the Heybeck Lane Site alone would include the movement of heavy goods vehicles at access points on Heybeck Lane and Leeds Road, cranes within the Site, and general construction activity associated with the building of 2-3 storey houses and associated infrastructure (residential roads, services, lighting and green space). The residual visual and landscape effects associated with this activity would be moderate adverse, and temporary, lasting the duration of the construction contract.

Operational Phase

1.134 The development of the Heybeck Lane site would simply extend the changes that would be brought about by the Proposed Development at the main Site. At the level of the National Character Area, this would result in a negligible change and negligible effect because of the scales involved. At a more local level, the effects generated by the development of the Heybeck Lane site, when read as additional to those of the main Site, would be greatest for LCA, E8: Batley-Dewsbury Rural Fringes. However, because of the relatively small scale, together with its physical/visual containment, and the low-level nature of the residential development, the Proposed Development for the Heybeck Lane site would not markedly change the effects already generated by the Proposed Development at the Site. The cumulative effects of the mitigated Proposed Development for the Heybeck Lane site and the Proposed Development of the Site, would remain moderate-major adverse for LCA E8: Batley-Dewsbury Rural Fringes.

1.135 The development of the Heybeck Lane site would extend northwards the landscape effects on agricultural land, hedgerows, trees, PROWs, and sense of tranquillity, and senses of openness generated by the Proposed Development within the main Site. Both sites are designed using the same principles, which include conserving and enhancing existing landscape assets wherever possible, together with their augmentation via additional green infrastructure proposals. The relatively small scale of the Heybeck Lane site compared with the Site would mean that the additional effects would not be greatly exacerbated. The magnitude of the residual mitigated cumulative effects would therefore remain as per the effects generated by the main Site in isolation, for each aspect of landscape fabric previously noted.

1.136 When considered together, the Heybeck Lane site will extend northwards some of the visual effects generated by the Proposed Development of the Site. However, these will largely be limited to viewpoints in close proximity to the Heybeck Lane site. This includes viewpoint 1 (located on the north-western boundary of the Heybeck Lane site) which will experience close-range visual effects as a result of the development of Heybeck Lane site. While the visual effects (with mitigation) generated by the Proposed Development within the Site are assessed as moderate-major adverse in viewpoint 1, the magnitude of change generated by Heybeck Lane site alone is judged to be high (refer to document RFM-XX-00-LRP-0001 Land at Heybeck Lane Landscape Appraisal), making the cumulative change (generated by the main Site and Heybeck Lane in combination) high. This will produce a cumulative visual effect which is assessed as major adverse, and permanent.

1.137 Limited, medium-range cumulative visual effects will be experienced from Viewpoints 5 and 8 due to the partial visibility of Heybeck Lane site from these locations.

1.138 In respect of viewpoint 5, the visual effects (with mitigation) of the Proposed Development within the Site have been assessed as moderate adverse. Development of the Heybeck Lane site would result in additional visible built form between houses to Heybeck Lane and Dum Wood. The

magnitude of the cumulative change experienced at viewpoint 5 is judged to remain at medium, due to the distances involved and the screening effects of intervening vegetation. The cumulative visual effect of the Site and Heybeck Lane site in combination is therefore also assessed as moderate adverse, and permanent.

1.139 In respect of viewpoint 8, the visual effects (with mitigation) generated by the Site alone have been assessed as minor adverse. The magnitude of the cumulative change experienced at viewpoint 8 is judged to be low, due to the distances involved and the screening effects of existing hedgerow vegetation. Due to the small-scale visual change brought about by development at the Heybeck Lane site, the cumulative visual effect is also assessed as minor adverse, and permanent. For all other representative viewpoints, there are no cumulative visual effects.

1.140 There is the potential for the Proposed Development to generate long-term effects during the night-time periods due to additional light throw caused by illuminating streets and from internally lighting buildings, as with any form of development. These effects will add to those generated by the current context, including residential on or close to Leeds Road, Heybeck Lane, Batley Road and Chidswell Lane. Most of the lighting effects would be generated by the main Site, composed of both residential and commercial development. The proposed residential development of the Heybeck Lane site would extend these effects northwards, with the main visual receptors being residential properties on Leeds Road and Heybeck Lane. For Viewpoint 1, the cumulative lighting effects would be similar in magnitude to the daytime visual effects, i.e. major adverse. For other affected viewpoints (viewpoints 1 and 8), the effects again reflect day time effects ie moderate adverse and minor adverse, respectively.

Residual Effects

1.141 The effects on the landscape during construction will be limited and temporary and will be no greater than the long-term effects of the Proposed Development itself. Landscape effects are to be expected in relation to any form of development taking place on a site. However, in this instance, particular care would be taken to ensure that existing trees to be retained and woodland within and around the Site would not be damaged during the construction period.

Summary

1.142 Overall, it is considered that, despite its transformative nature, the Proposed Development could be incorporated into the surrounding landscape context without major harm to landscape character and fabric, notwithstanding the loss of agricultural land. The principles for future development as shown on the proposed parameter plans has been carefully designed in a manner which respects and responds to existing settlement pattern and landscape assets such as topography, hedgerows, trees, water courses, and offsite woodland copses. Mitigation measures would ensure that these assets are to a great extent conserved, protected and enhanced, and future reserved matters applications would further augment these features by additional planting within a comprehensive green infrastructure proposal. This planted network would reinforce landscape character and bring about environmental benefits such as wildlife habitat and corridors, storm water relief, visual amenity, and recreational functions.

1.143 The most significant visual effects are experienced from existing residential development at East & West Ardsley, which sit on elevated ground east of the Site. These receptors experience medium-range panoramic views of the landscape, which includes direct views of the Site, sitting at a lower elevation. There are also high levels of visual effects for users of public rights of way through or close to the site. The transformative nature of the Proposed Development will result in significant effects but these will be mitigated by green infrastructure proposals which will help to screen and soften the appearance of the proposed development. Detailed landscape schemes brought forward at reserved matters stage would further help to assimilate proposed built form within the surrounding landscape by strengthening existing landscape features and by extending this network throughout the Site. Though mitigation measures might not significantly reduce

some adverse effects to landscape fabric and visual amenity, they nonetheless positively contribute to the creation of a sustainable development.

Archaeology and Historic Environment

Introduction

1.144 Chapter 8 assesses the likely significant effects of the Proposed Development with respect to Heritage and Archaeology. This chapter also describes the methods used to assess the effects; the baseline conditions currently existing at the Site and surrounding area; the mitigation measures required to prevent, reduce or offset any significant negative effects; and the likely residual effects after these measures have been adopted.

Baseline

1.145 The geophysical survey carried out across the Site recorded anomalies, which confirmed the likely presence of archeologically remains. Further, mining activity is well documented in the vicinity of the Site, however the geophysical survey identified that the footprint of directly affected ground within the Site appears to be limited to the southern and south-eastern parts of the Site.

1.146 Should any buried archaeological remains such as those described above survive within the Site, then they would be classed as non-designated heritage assets.

1.147 No designated assets are recorded within the Site. The heritage assets (both designated and non-designated) which lie outside of the Site and were identified as potentially sensitive to the Proposed Development are:

- Station Road Batley Conservation Area, which lies 1.15km to the west;
- The Scheduled Monument of Howley Hall, which lies 1.7km away; and
- Six Grade II Listed Buildings comprising: the Church of St Mary and a group of tombs and grave slabs, Haigh Hall, Manor Farm Barn, 25 and 27 Baghill Road, the Church of St Paul, and Toll Gates outside Toll Bar Cottage.

Methodology

1.148 Appendix 8.1, section 2 includes the full details of the methodology adopted to undertake the Heritage Desk-Based Assessment and develop an understanding of the archaeological potential of the Site, the significance of identified heritage assets, and any potential development effects. In summary, it comprises a review of information held on the West Yorkshire Historic Environment Record (WYHER), historic landscape character (HLC) data and Historic England Archive (HEA); a review of historic mapping; a review of vertical and oblique aerial photography dating from the 1940s to the present day; lidar imagery and point cloud data from the Environment Agency website, to a resolution of 1m; other documentary sources; and a site walkover conducted in August 2018.

1.149 The Proposed Development will not result in the loss (demolition) of any buildings or structures of heritage value. Therefore, the focus of the assessment has been on the setting of designated heritage assets (Conservation Areas, Listed Buildings and Scheduled Monuments) and any non-designated heritage assets that lie in the wider environs of the Site. In particular the methodology for undertaking setting assessment, as described in Historic England's Historic Environment Good Practice in Planning Advice Note 3 (GPA3 – The Setting of Heritage Assets; 2nd Edition, 2017), was employed. The HLC, map regression and site walkover referred to in 8.15 was of particular relevance to this element of the assessment work too.

1.150 The assessment of potential buried archaeological remains set out in Appendix 8.1 was further supplemented by a geophysical survey of the Site. The assessment methodology employed for the geophysical survey is presented in Appendix 8.2, section 6.

Summary of Likely Effects

1.151 Construction activities with groundworks, topsoil stripping etc. are likely to adversely affect the condition and state of preservation of known and potential buried archaeological remains which may be present within the Site. However, there is currently no evidence to suggest that the surviving (or potential) buried archaeological remains within the Site would be of such heritage significance to conclude that their excavation in advance of construction would result in a significant adverse effect. Furthermore, remains are routinely excavated ('preserved by record') as part of the industry standard mitigation response to construction impacts.

1.152 The construction phase of the Proposed Development is likely to comprise 10-15 years of phased activity and therefore could have a temporary effect on the setting of heritage assets and the historic landscape. Although changes to the setting of heritage assets in the wider environs of the Site, and to historic landscape within the Site, will begin to occur during the construction phase it is more common and useful to describe the key changes/impacts within the operational phase.

1.153 Elements of the 'important' hedgerows within the Site will be removed as a result of the construction of the Proposed Development. This would result in a minor adverse effect to the heritage significance of this asset.

1.154 The operational phase of the Proposed Development will have no further adverse effect ('significant' or otherwise) on buried archaeological remains as all potential effects would occur during the construction phase.

1.155 The Proposed Development is considered to result in a very slight measure of harm to the heritage significance of the Grade II Listed Haigh Hall. The Proposed Development will result in a change to a part of the wider agricultural landscape in which Haigh Hall is set, slightly altering an element of the setting that contributes to its significance. The harm is considered to be at the lower end of less than substantial harm (a minor adverse effect) and will not result in a significant adverse effect on the asset's heritage significance.

Mitigation

1.156 A phased and iterative programme of archaeological investigation is proposed to allow for a bespoke and proportionate mitigation strategy to be devised and undertaken as the Proposed Development proceeds. This will be informed by the desk-based assessment (Appendix 8.1) and geophysical survey results (Appendix 8.2) in the first instance. This programme of work will adhere to industry standard and best practice for a site of this scale, a development of this nature, and the archaeological potential present.

1.157 No mitigation measures are proposed or required within the operational phase, with regard to buried archaeological remains, built heritage and the historic landscape.

Cumulative Effects

Land at Heybeck Lane, Chidswell

1.158 The geophysical survey (Appendix 8.2) undertaken within the Site identified anomalies which confirmed the likely presence of buried remains associated with field systems and enclosures potentially dating to the Iron Age period; medieval, post-medieval and modern cultivation practices; and 19th century extraction activity. The geophysical survey also included the Land at Heybeck Lane, Chidswell where similar anomalies were identified, most notably a rectilinear anomaly suggestive of a small enclosure, and associated linear anomalies. The anomalies identified within both sites have the potential to comprise part of the remains of a more extensive landscape of prehistoric to post-medieval agricultural and settlement activity. Consent to develop both sites will not, however, measurably increase the harm to (effect on) potential buried archaeological remains

known or thought to exist within the Site as a result of on-site construction activities. Also, there will be no cumulative effect ('significant' or otherwise) on buried archaeological remains during the operational phase of the Proposed Development as all potential effects would occur during the construction phase.

1.159 The Proposed Development is considered to result in a very slight measure of harm to (an adverse effect on) the heritage significance of the Grade II Listed Haigh Hall through change to a part of the wider historic agricultural landscape in which it is set. The Land at Heybeck Lane, Chidswell site does not constitute a part of that wider landscape that can be said to have a substantive link with Haigh Hall. On that basis no cumulative effects are expected.

1.160 The construction of the Proposed Development will remove parts of the 'important' hedgerows within the Site, which would result in a non-significant adverse effect (a slight measure of harm) to the heritage significance of this asset. The development of Land at Heybeck Lane, Chidswell in-combination with the Proposed Development would not materially change this effect. On that basis no cumulative effects are expected.

Land at Owl Lane, Chidswell, Dewsbury

1.161 The Land at Owl Lane, to the south-west of the Site, is subject to an application for the construction of 252 dwellings (application reference number: 2019/62/92787/E). The results of any site-related heritage assessment or of other field investigations have not been presented with the application for this site. On that basis no conclusion on the potential for a measurable cumulative effect can confidently be proposed at this time.

1.162 The Proposed Development is considered to result in a very slight measure of harm to (an adverse effect on) the heritage significance of the Grade II Listed Haigh Hall through change to a part of the wider historic agricultural landscape in which it is set. The Land at Owl Lane does not constitute a part of that wider landscape that can be said to have a substantive link with Haigh Hall. On that basis no cumulative effects are expected.

1.163 The construction of the Proposed Development will remove parts of the 'important' hedgerows within the site, which would result is non-significant adverse effect (a slight measure of harm) to the heritage significance of this asset. The development at the Land at Owl Lane site in-combination with the Proposed Development would not materially change this effect. On that basis no cumulative effects are expected.

Residual Effects

1.164 Excavation and recording of archaeological remains in advance of construction will still result in their loss, therefore the construction phase effects described above will still reside after the Proposed Development has been completed. Impacts will however not be significant.

1.165 The operational phase of the Proposed Development will have no further adverse effect ('significant' or otherwise) on buried archaeological remains as all potential effects would occur during the construction phase.

1.166 The construction of the Proposed Development would remove parts of the 'important' hedgerows within the Site, which would result in a non-significant adverse effect (a slight measure of harm) to the heritage significance of this asset. These parts of 'important' hedgerows could not be replaced therefore the construction phase effects described above will still reside after the Proposed Development has been completed.

1.167 The operational phase of the Proposed Development will have no further adverse effect ('significant' or otherwise) on 'important' hedgerows' as all potential effects would occur during the construction phase.

1.168 The Proposed Development would result in a measure of less than substantial harm to the heritage significance of the Grade II Listed Haigh Hall through change to a part of the wider historic agricultural landscape in which it is set.

Summary

1.169 The Proposed Development will not result in the loss (demolition) of any buildings or structures of heritage value. It is anticipated that the Proposed Development will result in the removal (loss) of parts of the 'important' hedgerows that are present within the Site (not a significant effect). With this exception the focus of this assessment has been on the setting of designated heritage assets and non-designated heritage assets that lie within the wider environs of the Site. In respect of built heritage one Conservation Area, one Scheduled Monument and six Listed Buildings lie in the Site's wider environs.

1.170 The Proposed Development will not result in any **significant** effects on heritage assets, including buried archaeological remains, although non-significant effects have been identified. No buildings of heritage significance will be physically affected by the Proposed Development. The Proposed Development is considered to result in less than substantial harm (at the lower end) through changes to the historical agricultural setting of the Grade II Listed Haigh Hall, however, this is not significant

1.171 Further archaeological investigation would take the form of phased trial trench evaluation, which would then in turn inform an appropriate programme of further archaeological works (for example excavation or watching brief), as part of the mitigation strategy for the Proposed Development.

1.172 There will be no significant Residual Effects as a result of the Proposed Development.

Noise and Vibration

Introduction

1.173 The purpose of this noise and vibration chapter is to identify the potential noise and vibration impact on the existing and future noise sensitive receptors from the construction and operational phases of the Proposed Development.

1.174 In this chapter, the following key elements are addressed: the assessment methodology, the baseline noise conditions, assessment of noise and vibration impact, potential mitigation measures and the residual effects.

Methodology

1.175 The assessment methodology refers to the latest national and local guidance for environment impact assessment and planning. The Local Environmental Protection team was also consulted. The concerns and comments from the Environmental Health Officer have been addressedin this chapter.

1.176 A desktop study was carried out to identify the existing noise sensitive receptors and the affected roads to establish the baseline noise survey positions.

Baseline

1.177 The baseline noise conditions were measured around the boundary of the Proposed Development and at various positions close to the affected existing roads. The baseline noise measurements indicate that the existing noise sensitive receptors are exposed to relatively high noise levels from road traffic and the existing noise environment within the Site is at a risk between negligible and low.

Likely effect before mitigation

1.178 Construction noise and vibration impacts cannot be accurately predicted at this stage. However, they could cause significant adverse effects without appropriate mitigation.

1.179 Road traffic noise and vibration impact on the existing noise sensitive receptors during the operational phase is not predicted to have significant effects.

1.180 Noise impact from building services and school activities during the operational phase have been assessed and appropriate noise limits are proposed to avoid significant noise effects which will be addressed with the reserved matters.

Mitigation

1.181 To mitigate the effects of construction activities, best practical means to minimise the noise and vibration impacts must be adopted and will be secured through a CEMP.

1.182 For noise from building services and school activities, detailed mitigation can be provided with the reserved matters applications, through the imposition of planning conditions specifying noise limits to avoid any significant effects on the new noise sensitive receptors within the Site.

Residual effects

1.183 Residual noise and vibration effects on the existing and new noise and vibration sensitive receptors would not be significant with the implementation of the mitigation measures described.

Air Quality

Introduction

1.184 This Chapter of the ES assesses the likely significant effects of the Proposed Development with respect to Air Quality. This includes consideration of potential fugitive dust emissions associated with construction works and road traffic exhaust emissions from vehicles travelling to and from the Site during the operational phase, as well as potential exposure of future occupants to existing air quality issues. This Chapter also describes the methods used to assess the effects; the baseline conditions currently existing at the Site and surrounding area; the mitigation measures required to prevent, reduce or offset any significant negative effects; and the likely residual effects after these measures have been adopted.

Baseline

1.185 Existing air quality conditions in the vicinity of the Proposed Development were identified in order to provide a baseline for assessment.

1.186 The Site is located approximately 1.9km north-east of an Air Quality Management Area. As such, there is the potential for vehicles travelling to and from the Site to increase pollution levels in this sensitive area. This has been considered throughout the assessment.

1.187 Monitoring of pollutant concentrations is undertaken by KMDC throughout their area of jurisdiction. Annual mean NO2 concentrations were above the Air Quality Objectives (AQO) at several sites between 2016 and 2018. As the monitors are positioned at roadside locations, exceedances would be expected.

1.188 The Proposed Development is located approximately 530m south of Leeds City Council's (LCC's) administrative boundary. LCC also undertake monitoring of pollutant concentrations in the vicinity of the Site.

1.189 Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA. These maps cover the entirety of the UK to assist LAs in their review and

assessment of air quality. The Proposed Development is partially located in seven grid squares. Data for these locations was downloaded from the DEFRA website for the purpose of the project. Predicted background NO2 and PM10 concentrations are below the relevant AQOs at the Site.

Methodology

1.190 In accordance with the IAQM methodology, an assessment is undertaken where there are: 'human receptors' within 350m of the Site boundary, or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the Site entrance(s); and/or 'ecological receptors' within 50m of the Site boundary, or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the Site entrance(s).

1.191 A desk-top study was undertaken to identify locations sensitive to potential dust impacts within the above assessment zones. This identified the following:

- There are greater than 100 human receptors within 350m of the Site boundary. The closest of these are situated to the west, south-west and south of the Proposed Development, along Leeds Road, Willerton Close, Manor Park and Chidswell Lane, and include residential properties.
- There are greater than 100 human receptors within 50m of the route(s) that may be used by construction vehicles on the public highway, up to 500m from the Site entrance(s). The closest of these are situated adjacent to Leeds Road and Chidswell Lane, to the west and south of the Proposed Development, respectively, and include residential properties.
- There are two ecological receptors within 50m of the Site Boundary. These are the Dum Wood Local Wildlife Site (LWS) and Site of Wildlife Significance (SWS) and Dogloitch Wood LWS and SWS, which lie approximately 20m to the north and east, respectively.
- There are two ecological receptors within 50m of the route(s) that may be used by construction vehicles on the public highway, up to 500m from the Site entrance(s). These are the Scargill Wood LWS and SWS and Soothill Wood LWS, which lie approximately 70m and 230m to the north and north-west, respectively.

1.192 Locations sensitive to potential operational phase road vehicle exhaust emission impacts were identified from a desk-top study and are summarised in Table 10.9.

Table 1.7 - Operational Phase Road Vehicle Exhaust Emission Sensitive Receptor Locations

Receptor		NGR (m)	
		X	Y
R1	Residential - Oban Close	427907.9	426244.7
R2	Residential - Tingley Hall Rise	428081.2	426212.0
R3	Residential - Bradford Road	428202.8	426158.2
R4	Residential - Station Hall Farm	428286.2	426511.2
R5	Residential - Tingley Avenue	428231.3	426245.9
R6	Residential - Bradford Road	428416.5	426113.0
R7	Education Facility - Bradford Road	428730.0	425969.2
R8	Residential - Aspen Court	427230.4	426233.5
R9	Residential - Dewsbury Road	427798.9	425878.5

Receptor		NGR (m)	
		X	Y
R10	Residential - Dewsbury Road	427525.3	425509.0
R11	Residential - Dewsbury Road	427520.6	425558.2
R12	Education Facility - Rein Road	427349.3	425973.8
R13	Residential - Rein Road	427309.0	425893.0
R14	Residential - Dewsbury Road	427080.4	424948.5
R15	Residential - Leeds Road	426911.1	424429.4
R16	Residential - Leeds Road	426933.0	424515.4
R17	Residential - Heybeck Lane	426958.7	424461.8
R18	Residential - Leeds Road	426825.9	424213.6
R19	Residential - Leeds Road	426539.7	423364.2
R20	Residential - Leeds Road	426695.0	423769.2
R21	Residential - Leeds Road	426379.2	423194.0
R22	Residential - Leeds Road	426264.3	423097.6
R23	Residential - Leeds Road	426212.5	423094.5
R24	Residential - Leeds Road	426103.4	423016.3
R25	Residential - Leeds Road	425836.5	422793.2
R26	Residential - Leeds Road	425457.3	422393.2
R27	Residential - Leeds Road	425084.7	422014.8
R28	Residential - Leeds Road	424983.9	422015.4
R29	Residential - Leeds Road	424921.0	421978.3
R30	Residential - Leeds Road	424864.7	421922.8
R31	Education Facility - Leeds Road	424834.4	421903.6
R32	Residential - Highgate Road	424856.2	421830.7
R33	Residential - Highgate Road	424895.1	421778.2
R34	Residential - Soothill Lane	426235.3	424361.1
R35	Residential - Soothill Lane	425652.9	424244.5
R36	Residential - Grange Road	425420.5	423707.8
R37	Education Facility- Soothill Lane	425908.2	424167.8
R38	Residential - Heybeck Lane	427092.5	424408.5
R39	Residential - Heybeck Lane	427237.1	424477.2
R40	Education Facility - Heybeck Lane	428016.8	424506.5
R41	Residential - Chidswell Lane	426656.5	422999.9
R42	Residential - Windsor Drive	426400.2	422827.6
R43	Residential - Owl Lane	426540.6	422534.7

Receptor		NGR (m)	
		X	Y
R44	Residential - Owl Lane	426938.3	422099.4
R45	Residential - Chidswell Lane	426777.9	422730.7
R46	Residential - Kingsway	427114.7	421851.0
R47	Residential - Kingsway	427210.8	421709.2
R48	Education Facility - Leeds Road	427149.1	422033.2
R49	Residential - Lodge Hill Road	427767.9	421856.3
R50	Residential - Cross Keys	429391.9	420986.1
R51	Residential - Wakefield Road	429763.4	420720.4
R52	Residential - Batley Road	429537.1	422953.5

Summary of Likely Significant Effects

Earthworks

1.193 Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. While the development will be phased, in order to represent a worst-case assessment scenario, the whole Site was considered to be developed in parcels of greater than 10,000m^2. The magnitude of potential dust emissions from earthworks is considered to be major.

Construction

1.194 Due to the size of the Proposed Development the total building volume is likely to be greater than 100,000m^3. The magnitude of potential dust emissions from construction is considered to be major.

Trackout

1.195 Based on the Site area, it is anticipated that the unpaved road length may be greater than 100m. The magnitude of potential dust emissions from trackout activities is considered to be major.

1.196 In accordance with the IAQM guidance, the sensitivity of the receiving environment to potential dust soiling and human health impacts was determined as high. This was because the receptors identified during the baseline study included residential properties.

1.197 The sensitivity of the receiving environment to potential ecological impacts was determined as low. This was because the receptors identified during the baseline study comprised locally designated sites.

1.198 The sensitivity of the surrounding area to human health impacts is low for earthworks and construction and moderate for trackout. The sensitivity of the surrounding area to ecological impacts is low for earthworks, construction and trackout.

1.199 Vehicle movements associated with the operation of the Proposed Development will generate exhaust emissions on the local and regional road networks. An assessment was therefore undertaken using dispersion modelling in order to quantify potential changes in pollutant concentrations at sensitive locations in the vicinity of the Site.

1.200 In summary, the unmitigated dust soiling effects are predicted to be major adverse from earthworks, construction and trackout. The unmitigated human health effects are predicted to be moderate adverse from trackout and minor adverse from earthworks and construction. The unmitigated ecological effects are predicted to be minor adverse from earthworks, construction and trackout. These effects are considered to be long term (greater than one year), temporary and local.

Mitigation

Construction Phase

Table 1.8 Fugitive Dust Emission Mitigation Measures

Guidance	Comment
Communications	Develop and implement a stakeholder communications plan that includes community engagement before work commences on Site Display the name and contact details of person(s) accountable for air quality and dust issues on the Site boundary. This may be the environment manager/engineer or the site manager Display the head or regional office contact information Develop and implement a Construction Environmental Management Plan (CEMP), which includes measures to control dust and any other emissions, approved by the LA
Site management	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken Make the complaints log available to the LA upon request Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book Hold regular liaison meetings with other high risk construction sites within 500 m of the Site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes
Monitoring	Undertake daily on-site and off-site visual inspection to monitor dust, record inspection results, and make the log available to the LA upon request Carry out regular site inspections to monitor compliance with the CEMP, record inspection results, and make an inspection log available to the LA upon request Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions

Guidance	Comment
Site preparation	Plan layout so that machinery and dust causing activities are located away from receptors, as far as is possible Fully enclose specific operations where there is a high potential for dust production and they are active for an extensive period Avoid site runoff of water or mud Keep site fencing, barriers and scaffolding clean using wet methods Remove materials that have a potential to produce dust from Site as soon as possible, unless being re-used Cover, seed or fence stockpiles to prevent wind whipping
Operating vehicle/machinery and sustainable travel	Ensure all vehicles switch off engines when stationary - no idling vehicles Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas Include a Construction Logistics Plan within the CEMP to manage the sustainable delivery of goods and materials
Operations	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques Ensure an adequate water supply on the Site for effective dust suppression, using non-potable water where possible and appropriate Use enclosed chutes and conveyors and covered skips Minimise drop heights and use fine water sprays wherever appropriate Ensure equipment is available to clean any dry spillages, and clean up spillages as soon as reasonably practicable using wet cleaning methods
Waste management	Avoid bonfires and burning of waste materials
Earthworks	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil as soon as practicable

Guidance	Comment
Construction	Avoid scabbling (roughening of concrete surfaces) if possible Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery
Trackout	Use water-assisted dust sweeper on access and local roads, if required Avoid dry sweeping of large areas Ensure vehicles entering and leaving Site are covered to prevent escape of materials Implement a wheel washing system, if required Access gates to be located at least 10m from receptors where possible

Operational

1.201 The following mitigation was identified in order to reduce potential air quality impacts as a result of operational phase road vehicle exhaust emissions:

- All Heavy Duty Vehicle (HDV) movements produced from the Proposed Development that travel towards Dewsbury Town Centre will be prevented from utilising the portion of Leeds Road included within Kirklees AQMA 5.

Cumulative Effects

1.202 The Proposed Development may result in cumulative dust emission impacts should the construction phase overlap with that of any other scheme within 700m of the Site boundary. However, as previously outlined, any fugitive emissions generated by the Proposed Development would be controlled through the outlined mitigation and similar measures would be anticipated for any other local developments. Therefore, residual cumulative effects are predicted to be not significant.

1.203 There is the potential for cumulative operational phase road vehicle exhaust emission impacts should other developments generate traffic which utilised the same routes as movements generated by the Proposed Development. It is confirmed that the traffic data provided by the Transport Consultants for the project includes traffic growth associated with committed and allocated sites in the local area. As such, residual cumulative effects are therefore predicted to be not significant.

Summary

1.204 The Proposed Development has the potential to cause air quality impacts as a result of fugitive dust emissions during construction and road traffic exhaust emissions associated with vehicles travelling to and from the Site during operation, as well as expose future occupants to any existing air quality issues. As such, an assessment was undertaken in order to determine baseline conditions and assess potential effects as a result of the scheme.

1.205 During the construction phase of the Proposed Development there is the potential for air quality impacts as a result of fugitive dust emissions from the Site. These were assessed in accordance with relevant guidance. Assuming good practice dust control measures are implemented, the

residual air quality effects after mitigation from dust generated by earthworks, construction and trackout activities was predicted to be not significant.

1.206 The Proposed Development has the potential to expose future users to elevated pollution levels and impact existing air quality in the vicinity of the Site during operation. Dispersion modelling was therefore undertaken in order to predict pollutant concentrations as a result of emissions from the local highway network. Results were subsequently verified using local monitoring data.

1.207 Review of the dispersion modelling results indicated that residual air quality effects as a result of traffic generated by the development were predicted to range between minor adverse and negligible and not significant.

1.208 The results of the dispersion modelling assessment also indicated that predicted pollutant concentrations were below the relevant criteria at all locations across the Proposed Development. The Site is therefore considered suitable for the proposed end use from an air quality perspective.

1.209 Following consideration of the relevant issues, the residual effects of the Proposed Development on air quality were considered to be not significant.

Flood Risk and Drainage

Introduction

1.210 This Chapter of the ES has assessed the likely significant effects of the Proposed Development with respect to Flood Risk and Drainage, including the methods used to assess the effects; the baseline conditions currently existing at the Site and surrounding area; the mitigation measures required to prevent, reduce or offset any significant negative effects; and the likely residual effects after these measures have been adopted.

Baseline

1.211 The Environment Agency (EA) Flood Maps show the Site to be in Flood Zone 1 (Low Probability of Flooding) and not within a tidally influenced area. The Site has three local watercourses that drain the Site and flow into Hey Beck. Downstream Fenton Dam has been developed as a flood protection scheme for the downstream Westgate End protecting Wakefield.

1.212 The Site is shown to be at low risk from all other sources of flooding including surface water, groundwater, reservoirs, canals and sewers. There have been no historic records of flooding at the Site and it is not within an EA Flood Warning Area or Critical Drainage Area. No existing residential or non-residential developments or other watercourse receptors are considered to be affected by [ ].

1.213 Overall, the Site is considered to be at Low and Acceptable risk from all sources of flooding in the baseline scenario.

Methodology

1.214 Assessment of potential development impacts on flood risk and drainage has been undertaken through a combination of desk-based analysis, site survey work, qualitative and quantitative impact assessment and consideration of potential impact mitigation requirements.

1.215 Potential development effects have been defined by reference to baseline geological, hydrological and hydrogeological assessment and detailed development design proposals. Where necessary, mitigation measures have been defined for any effects considered to be significant with the aim of reducing any residual risk to an acceptable level. The criteria for determining the significance of effects is based upon the following methodology, using the Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 10 (HD 45/09) as a guide.

Summary of Likely Effects

1.216 In summary, the receptors at risk include the three local watercourses that drain the Site, Hey Beck which is the receiving watercourse downstream. There is the potential for surface water runoff to infiltrate into the ground, however this is considered limited due to the underlying geology.

1.217 The main likely significant effects at the Site revolve around dealing with surface water risk at the Site and the potential for silt laden runoff, spillages, leaks and pollutants during construction and diffuse pollution contained in urban runoff during operation from a water resource perspective. In addition, from a flood risk perspective, the likely significant effects include mud and debris blockages and temporary increases in impermeable areas during construction and the increase in permanent impermeable areas along with potential increases in discharge to ground and blockages of drainage networks during operation.

Mitigation

1.218 A number of key mitigation measures has been suggested in the sections below. It is likely that these will be formalised through the preparation of a Construction Management Plan (CMP) and Drainage Strategy which are anticipated to be secured by planning condition.

1.219 In summary, the mitigation below reduces the residual risk to **Negligible** for the local watercourse, including Hey Beck and surface water receptors, largely through appropriate SuDS, controlling flows into the receiving watercourses and downstream

Cumulative Effects

Future Residential Development at Heybeck Lane

1.220 There is a risk of flood or surface flow from the future residential development at Hey Beck Lane. The topography of the Hey Beck Lane (HBL) site falls towards the proposed Site boundary. Therefore, during the construction phase, surface flows will be a risk. There will be a risk of increased surface water contribution due to the construction of impermeable areas such as access roads, driveways and roofs. Any flooding from Hey Beck Lane, if left unmitigated, will flow towards the commercial area at the northern boundary of the Site.

1.221 The HBL site and the proposed Site will both require a detailed Drainage Strategy designed to restrict the surface water run-off to greenfield rates and consider the cumulative impacts, there will be an overall betterment to the load and flows on the existing infrastructure and watercourses which be developed further during detailed drainage design. As impacts can be mitigated the cumulative impact is considered **Negligible**.

Barratt Homes Residential Development

1.222 A planning application has been submitted to Kirklees Council by Barratt Homes, for the construction of 252 residential properties at the southern border of the proposed Site. The Site is referred to as Land at Owl Lane (LaOW) and its topography also falls towards the proposed Site.

1.223 Foul and Surface water will discharge into the public sewer increasing flow capacity. Flood flow from the adoptable drainage network will flow towards the proposed Site, which could pose a risk to the residential properties on the southern boundary of the Site. Consultation with Yorkshire Water should be undertaken to ensure that the cumulative foul flows can be accommodated through a Developer Enquiry, including the potential future residential development at Hey Beck Lane.

1.224 The LaOS site and the proposed Site will both require a detailed Drainage Strategy designed to restrict the surface water run-off to greenfield rates and consider the cumulative impacts, there will be an overall betterment to the load and flows on the existing infrastructure and watercourses which be developed further

during detailed drainage design. As impacts can be mitigated the cumulative impact is considered **Negligible**.

1.225

Residual effects

1.226 All residual effects identified are considered Negligible.

Summary

1.227 Following the implementation of the mitigation measures which will be secured through a CEMP and development of appropriate SuDS measures as the scheme develops, all potential effects identified are considered Negligible.

Contamination

Introduction

1.228 This Chapter of the ES assesses the likely significant effects of the Proposed Development with respect to contamination. This chapter also describes the methods used to assess the effects; the baseline conditions currently existing at the Site and surrounding area; the mitigation measures required to prevent, reduce or offset any significant negative effects; and the likely residual effects after these measures have been adopted.

Baseline

1.229 The findings of the Phase 1 Geo-environmental Desk Study Report and Coal Mining Risk Assessment (CMRA) are summarised below:

- The majority of the Site has remained as agricultural land (arable and pasture) since prior to the earliest edition Ordnance Survey (OS) Plans (1854-1855). However, there are signs of mining related infrastructure including 3 former mine shafts within the northeastern part of the Site, surface evidence of historic bell pits in the southwestern corner and former opencast mining adjacent to the Site's southeastern boundary;
- Natural superficial drift deposits are indicated to be absent from across the Site;
- The solid strata directly beneath the Site comprise sandstone, mudstone and siltstone of the Carboniferous Middle Coal Measures Formation, with a number of outcropping coal seams and fault blocks noted to be present across the Site;
- Bedrock beneath the site has been designated as a Secondary A Aquifer. The Site is not located within a groundwater source protection zone;
- A significant part of the Site is within areas of probable past shallow coal mining together with substantial parts being within Development High Risk Areas (DHRA). The Coal Authority (CA) define a DHRA as "the part of the coal mining reporting area which contains one or more recorded coal mining related features ie. mine entries, shallow coal workings (recorded and probable), recorded coal mining related hazards, recorded mine gas sites, fissures, breaklines and previous surface mining sites". Recorded shallow coal mining is present beneath the central northern part of the Site;
- Several surface watercourses, including a stream and drainage ditches, are present within the boundaries of the Site. These are indicated to generally flow in an easterly direction and discharge into Hey Beck which is located approximately 220m from the

eastern boundary of the Site. Hey Beck is designated as a Secondary River with all remaining watercourses designated as Tertiary;

- Dum Wood and Dogloitch Wood, both of which are located in close proximity to the Site, are designated as Ancient Replanted Woodland. There are no other Designated Environmentally Sensitive Sites within 2000m of the Site. Designated Environmentally Sensitive Sites belong to Designated Environmentally Sensitive Areas (DESA), which are defined as agricultural areas which need special protection because of their landscape, wildlife or historical value; and

- Due to the greenfield undeveloped nature of the majority of the Site, the risk of significant contamination that could affect future workers, end-users or controlled waters is considered negligible. However, localised areas associated with mining legacy infrastructure, may pose a risk.

1.230 The geology at the Site has been determined by a review of published data (including online and hard copy mapping); British Geological Survey (BGS) Sheet SE22SE 1:10,000 scale Solid and Drift Edition; Sheet 78, Wakefield 1:50,000 scale Solid and Drift Edition and Sheet 232SE, Batley, 1:10,560 County Series 2nd Edition Solid and Drift. In addition, reference has been made to the following publications; Geological Survey Memoir 'Geology of the Country Around Wakefield', Sheet 78, 1940; BGS Technical Report WA/96/17, 'Geology of the Ossett Area', Lake RD, 1996 and RJB Mining (UK) Ltd 'Windsor Proposed Opencast Coal Site – Environmental Statement and Supporting Information', July 1997.

1.231 The Site is unaffected by former opencast coal workings. The surrounding area has been historically intensely mined by opencasting methods for the numerous shallow coal seams present.

1.232 The Site does not lie within a groundwater source protection zone and no groundwater abstraction licenses are present within 1km of the Site boundary. There are no records of springs or wells within the boundaries of the Site.

1.233 There are no surface water discharge consents located within the boundaries of the Site. However, there are 3 that are listed within 250m of the Site, 2 of which are operational and relate to the discharge of storm sewage overflows into the River Sheaf and Hey Beck. A revoked consent relates to discharge of trade effluent from Haigh Hall Opencast into Hey Beck.

1.234 There are no records of landfill sites or other waste management facilities within the boundaries of the Site.

Methodology

1.235 This assessment is based upon a review of current and historical environmental and geological data and information collected during the development of the Phase 1 Geoenvironmental Desk Study Report and Coal Mining Risk Assessment. The primary sources of information are listed below, and these provide reference to statutory and other environmental information:

- Patrick Parsons Limited, Phase 1 Geo-environmental Desk Study Report – Heybeck Lane and Land to the East of Leeds Road, Chidswell. Ref: H18017 Rev. 3, dated December 2019 (included as Appendix 12.1); and

- Patrick Parsons Limited, Coal Mining Risk Assessment – Land East of Leeds Road, Chidswell, Dewsbury. Ref: H18119B CMRA Rev. 2, dated December 2019 (included as Appendix 12.2).

1.236 The methodology for the assessment is based on a combination of the sensitivity and magnitude to determine the significance of the impact. These are based on the professional judgement of the team undertaking this assessment.

Summary of Likely Effects

1.237 The impacts of the construction phase of the Proposed Development have been assessed based on the known ground conditions and are based on the professional judgement of the team undertaking this assessment. The assessment has concluded that the environmental impacts brought about by the construction phase are short-term and temporary in nature, as they will only occur during construction.

Table 1.7 – Assessment of Significance of Potential Effects during Construction

Potential Impact	Applicable Part of Site/Receptor	Direct/Indirect Effect	Significance of Unmitigated Impact
[1] Permanent loss of soils/natural strata and minerals through construction/excavation. In particular, the sterilisation of shallow coal reserves as a consequence of development	Whole site	Direct	Minor adverse
[2] Introduction of additional contamination into soil, surface and groundwater during construction phase as a result of accidental spillages i.e. fuels and construction materials	Whole site	Direct	Minor adverse
[3] Introduction of silt and construction contaminants or other debris during excavation or from uncontrolled site runoff into streams and drainage channels which discharge into Hey Beck	Controlled waters	Direct and indirect	Moderate adverse
[4] Impact on construction workers as a result of excavation into potentially contaminated soil/groundwater i.e. made ground, where present	Construction workers	Direct	Minor adverse
[5] Impact on construction workers as a result of excavations into and treatment of unrecorded unstable mining features i.e. shafts and unrecorded shallow coal workings	Construction workers	Direct	Moderate adverse
[6] Impact on construction workers and site neighbours from the generation of dust from excavation and stockpiling of construction materials including made ground and natural soils	Construction workers, site neighbours	Direct	Minor adverse

1.238 The impacts of the operational phase of the Proposed Development have been assessed on ground conditions. The assessment has concluded that the environmental impacts brought about by the operational phase are long-term and considered permanent in nature.

Table 1.8 – Assessment of Significance of Potential Impacts during Operation

Potential Impact	Applicable Part of Site/Receptor	Direct/Indirect Effect	Significance of Unmitigated Impact
[7] Introduction of contamination into soil, surface and groundwater as a result of accidental spillages/ leakage from vehicles (site users and delivery	Whole site and surrounding area	Direct	Minor adverse

vehicles) during the operational phase			
[8] Introduction of contamination into soil, surface and groundwater as a result of accidental spillages/ leakage from the storage of raw materials, bulk fuels and liquids within the employment zone during the operational phase	Northern and eastern areas of Site	Direct	Minor to Major adverse (depending upon the type and size of the pollution)
[9] Degradation of building materials and buried services over time e.g. as a result of contact with sulphate within soils and low pH	Proposed buildings, concrete substructures	Direct	Minor adverse
[10] Impacts on buildings and substructures as a result of unstable ground (mining features, shafts, shallow workings etc.)	Proposed buildings, substructures	Direct	Moderate adverse
[11] Impact on future Site occupiers as a result of hazardous ground gas	Future occupiers, site users	Direct	Substantial adverse

Mitigation and Residual Effects

1.239 The following mitigation measures will be designed into the Proposed Development in order to reduce likely significant adverse effects and enhance beneficial effects caused by the Proposed Development.

1.240 There are expected to be no significant adverse residual effects as a result of the Proposed Development in respect of the ground conditions assuming that mitigation measures identified in the following table are implemented.

Table 1.9 – Summary of Receptors, Likely Significant Effects, Mitigation Measures, and Residual Effects

Likely Significant Effect	Receptor(s)	Mitigation Measure	Residual Effect
Construction Phase			
Moderate adverse effect from the loss of soil / natural strata and minerals	Whole Site	Reuse of suitable materials (e.g. topsoil / subsoil) on site. (para 1.72)	Negligible effect on soil / natural strata and minerals
Minor adverse effect of the introduction of additional contaminants into soil, surface and groundwater	Whole site	Preparation of a CEMP, adopt best practise for the handling of hazardous materials, use of bunded storage areas, restrict the maintenance of vehicles on site. (Para 1.81)	Negligible effect on soil, surface and groundwater
Moderate adverse effect of the introduction of silt and debris into surface watercourses from site runoff	Controlled Waters	Preparation of a CEMP, development of a construction phasing plan, adopt good stockpile control and minimise runoff as far as is practicable. (Para 1.85)	Negligible effect on surface watercourses

Minor adverse effect from excavation into potentially contaminated soil/groundwater	Construction workers	Safe systems of works (para 1.89) and PPE (para 1.90)	Negligible effect on workers
Moderate adverse effect on construction workers as a result of excavations into and treatment of unrecorded unstable mining features	Construction workers	Site investigation and remedial treatment of any unstable ground. (Para 1.94)	Negligible effect on workers
Minor adverse effect on construction workers and site neighbours from the generation of dust during earthworks	Construction workers	Screening, sheeting, monitoring and damping down. (Para 1.98)	Negligible effect on workers
Operational Phase			
Minor adverse effect of the introduction of additional contaminants into soil, surface and groundwater as a result of accidental spillages/leakage from vehicles	Whole site	Adopt best practise for the handling of hazardous materials, use of bunded storage areas, restrict the maintenance of vehicles on site. Fuel interceptors. (Para 1.102 and 1.103)	Negligible effect on soil, surface and groundwater
Minor to Major adverse effect of contamination into soil, surface and groundwater as a result of accidental spillages/leakage from the storage of raw materials, bulk fuels and liquids within the employment zone	Whole site	Environmental Management Systems. (Para 1.108)	Negligible effect on soil, surface and groundwater
Minor adverse effect of degradation of building materials and buried services over time as a result of contact with sulphate within soils and low pH	Buried concrete and water supply pipe	Specification of appropriate materials. (Para 1.10 and 1.11)	Negligible effect on buried concrete and services
Moderate adverse effect on buildings and substructures as a result of unstable ground (mining features, shafts, shallow workings etc)	Building structures	Site investigation and remedial treatment of any unstable ground. (Para 1.115, 1.116 and 1.117)	Negligible effect on building structures
Major adverse effect on future site occupiers as a result of hazardous ground gas	Site occupiers	Site investigation, monitoring and gas protection systems. (Para 1.121, 1.22, 1.123 and 1.124)	Negligible effect on site occupiers

Summary

1.241 During both the construction and operation of the Proposed Development, the significance of any effects, pre mitigation, are assessed as being Minor to Major adverse.

1.242 Appropriate mitigation measures adopted during construction should include reuse of site-won natural soils, implementation of a Construction Environmental Management Plan and remediation of any identified contamination and stabilisation of unstable ground, as a consequence of former mining activities.

1.243 Consequently, any residual effects during construction would be reduced to Negligible.

1.244 The implementation of robust environmental management systems, stabilisation of mining related unstable ground, due consideration of the layout of the Proposed Development with respect to former mine entries and monitoring for hazardous ground gases negates any residual impacts.

Transport

Introduction

1.245 This Chapter of the NTS summarises the likely significant effects of the Proposed Development with respect to Transport and Highways. This chapter describes the methods used to assess the effects; the baseline conditions currently existing at the Site and surrounding area; the mitigation measures required to prevent, reduce or offset any significant negative effects; and the likely residual effects after these measures have been adopted.

Baseline

1.246 Kirklees Local Plan was the subject of an Examination in Public (EIP) by a Government-appointed Inspector in February 2018 who considered the evidence presented by KMDC to support the Local Plan. To support the allocation of the Site in this process, an Interim Transport Assessment was produced in August 2016, together with various other supplementary information, to inform KC Highways officers and the Government-appointed Inspector, of the potential transport and highways effects of a strategic masterplan development at the Site. Data produced at that time also fed into the wider highway modelling activities undertaken by KC to support the Local Plan.

1.247 Processes and methodologies used in the EIA were informed by that 2016 Interim Transport Assessment, but have since developed through a scoping process which was undertaken through 2018 and 2019 with KC, LCC, WC, and HE to establish the technical basis for the Transport Assessment (and Framework Travel Plan). Chapter [x] of the eS was produced in accordance with the formal Environmental Impact Assessment (EIA) screening Responses issued by KC and the relevant scoping opinions of those other stakeholders. This scoping process also included regular meetings with KC and further meetings with HE and others.

1.248 For a full detailing of the baseline transport conditions relating to the Site, the reader is directed to the Transport Assessment included at Appendix 13.1.

Methodology

1.249 The methodology adopted in assessing the likely traffic and transport effects is based upon the Institute of Environmental Assessment (IEA) document 'Guidance Notes No. 1: Guidelines for the Environmental Assessment of Road Traffic', 1993, and accords with the Government's planning policies for England as set out in the NPPF.

1.250 The number of trips associated with the Proposed Development at the operational stage has been calculated using the industry standard TRICS trip rate database.

1.251 Assessment of the effect of the Proposed Development is made by comparison of pairs of future scenarios: one in which the Proposed Development is delivered (in part or in full), and the other in which the Proposed Development is assumed not to occur. These are described in this NTS as "With Development" and "Without Development" scenarios respectively. The difference between the scenarios allows the identification of the net effect of the Proposed Development in the context of the general and wider changes expected in the area over the period of assessment.

1.252 Additionally, assessment has been undertaken to assess the temporary effects of the Proposed Development during the demolition and construction process. This applies through the period of delivery. Given the outline nature of the application, the consideration of demolition and construction effects is necessarily high level.

1.253 Effects have been determined for the following assessment scenarios:

- 2019 Base: Observed traffic flows based on 2019 traffic surveys;
- 2024 Without Development : Based on '2019 Base' traffic data with 2019-2024 growth factors (derived from the 2019 and 2024 interpolated KC SATURN 'Do Minimum' scenarios) therefore including a proportion of committed Local Plan developments as incorporated in the strategic SATURN model (e.g. Barratt David Wilson Homes [BDWH] Site on Owl Lane and LCC's committed developments). This scenario also includes the manual addition of the phased [part of?] development delivered on 'Land at Heybeck Lane' expected by 2024;
- 2024 With Development: '2024 Without Development' plus initial phases of the Proposed Development on the Site;
- 2030 Without Development: Based on '2019 Base' traffic data with 2019-2030 growth factors (derived from the 2019 and 2030 interpolated KC SATURN Do Minimum scenarios) therefore including committed Local Plan developments as incorporated in the strategic SATURN model (e.g. BDWH Site and, in addition, LCC committed developments). This scenario also includes the manual addition of the complete and operational development delivered on 'Land at Heybeck Lane';
- 2030 With Development: '2030 Without Development' plus full Proposed Development on the Site.

1.254 In addition to those flow determinations described above, these figures have been factored to create estimated 24-hour traffic counts (AADTs) for each link for each scenario.

1.255 Pedestrian movement and capacity has been assessed by site observations and a desktop study. The potential number of additional pedestrian movements have been calculated using the industry standard TRICS trip rate and census mode share, and compared against the proposed pedestrian facilities incorporated in the Proposed Development.

1.256 Pedestrian severance, delay, fear and intimidation, and amenity, have been assessed by considering the baseline traffic flow against the potential traffic flow associated with the Proposed Development.

1.257 The existing cycling facilities have been determined through site observations and a desktop study. The potential number of additional cycling trips has been calculated using the TRICS trip rate and census mode share.

1.258 The potential effect of the Proposed Development on public transport services has been assessed by calculating the likely additional number of passengers for both the AM peak hour and the PM peak hour.

1.259 The scope of assessment has been agreed with KMDC. Junction assessments were undertaken in LINSIG and Junctions 9 (ARCADY & PICADY) to determine junction capacity.

1.260 Data for road traffic accidents resulting in personal injury ('accident data') for the roads surrounding the Site has been obtained and assessed to establish any trends in causation factors. Professional judgement has been used to assess whether the Proposed Development will impact on road safety at the Site.

Summary of Likely Significant Effects

1.261 A CEMP will be the responsibility of the eventual delivery contractor(s). Such a plan would include appropriate estimates of construction traffic, routing and mechanisms for managing the same. It is expected that the majority of construction vehicles would access the Site from the M62 or M1 junctions (i.e. from the Strategic Road Network).

1.262 Transportation and access related effects that have the potential to arise during the construction stages comprise the following:

- Temporary disruption to road users at specific times of the day from vehicles accessing and egressing the Site;
- Temporary disruption to cyclists at specific times of the day from vehicles accessing and egressing the Site; and,
- Temporary disruption to pedestrians at specific times of the day from vehicles accessing and egressing the Site.

1.263 Construction traffic is considered to have a minor adverse medium-term effect.

1.264 The operation of the Proposed Development would have the potential for the following broad effects:

- Increased people trips travelling to and from the Site and an associated demand on pedestrian, cycle, public transport facilities and the local road network; and
- New/upgraded access points into the Proposed Development including new pedestrian and cycle routes.

1.265 Off the Site, general pedestrian flows are low and there are no obvious pedestrian infrastructure capacity pressures. The additional loading of pedestrian trips outside the Site generated by the Proposed Development would therefore be expected to have a negligible effect. In combination with the upgrade of the condition of the public rights of way network within the Site, the overall effect is considered to be a long-term beneficial minor effect.

1.266 Whilst the overwhelming majority of the network will experience a negligible increase in severance (if any), the part of Chidswell Lane closest to the Site will likely see an increase in traffic that classifies as 'substantial' in terms of severance. It is important to frame this by noting that the percentage increase takes no account of underlying traffic volumes and that a small increase on a low trafficked road may show a large percentage whilst being still a small increase in objective terms. On balance, and not taking into account any potential mitigation measures, the impact on pedestrian severance is assessed to be a minor long-term adverse effect.

1.267 Pedestrian delay is expected to experience no substantive changes as a result of the Proposed Development. The existing pedestrian network is lightly used, crossings on main roads are at retained designated crossing points or will be on lightly-trafficked minor residential roads. New crossing points will be incorporated as a part of the proposed Site accesses on Leeds Road but given the linear nature of Leeds Road, these are unlikely to be in great demand. Overall, the effect on pedestrian delay will be negligible.

1.268 As cycle users on the Site are currently limited, the effects on any given user carries some uncertainty. Despite the absence of committed off Site schemes, the new potential for cycle routing for local and new residents is likely to more than counterbalance a loss of off-road cycling options for leisure cyclists. It is therefore considered that the Proposed Development will have a minor long-term beneficial effect on cycling facilities.

1.269 Existing capacity constraints and train loading through Dewsbury and Batley station are unknown, though anecdotally, peak hour overcrowding is reported, but with 4 trains per hour in each direction at Dewsbury in the AM peak, two of which call at Batley, train loading increase could be as low as 6 people per train. It is unlikely that such an increase would be outside the range of daily variation. It should also be noted that the local rail operators are currently implementing a programme of train replacement and capacity enhancement. Rail effects are likely to be negligible.

1.270 Given the delivery of the Site is proposed on land which is currently undeveloped, any new roads provide a potential for accidents to occur where that was not possible previously. New roads within the Site are to be designed in line with prevailing standards and are generally focussed on property access, meaning that speeds will be low and the severity of any potential accidents likely to be generally less severe. The practical effect for existing people in the area is likely to be negligible. Outside of the Site, no specific interventions are proposed to deliver the Proposed Development save that Site accesses will be provided to prevailing design standards. The effect of such changes is likely to be negligible. Overall, road safety effects due to the Proposed Development are likely to be negligible.

1.271 With regard to junction capacity and driver delay for each junction, a modelling exercise was undertaken using surveyed (i.e. baseline) traffic data to produce models to replicate the current situation in 2019 (where relevant). Then, in the future interim year of 2024 and the future year 2030 when the Proposed Development is expected to be complete and operational, those models are used to test scenarios both with and without the Proposed Development and to establish the net impact of the Proposed Development on the junctions, both in terms of operation and of ultimate capacity.

1.272 A number of the junctions are identified as having operational and/or capacity issues in future years as a result of the background growth of traffic (inclusive of committed developments). Background growth in the area is predominantly due to Local Plan growth in Kirklees, but further reinforced by similar high growth plans for adjacent local authorities (such as Leeds and Wakefield) and wider regional and national growth expectations.

1.273 In light of this, when Proposed Development traffic is added to junctions already at or over capacity, existing or anticipated issues are exacerbated, and as an overall result traffic levels at a number of the considered junctions are taken beyond the point of capacity/operability that is usually considered acceptable. If highway capacity is to be expanded to cater for forecast flows, some mitigation may be necessary. In the absence of such mitigation, and bearing in mind the context of the current inability of the network to accommodate future growth regardless of the Proposed Development, the Proposed Development itself would be expected to have an additional overall minor adverse long-term effect.

Mitigation and Residual Effects

1.274 Table 1.10 contains a summary of the likely significant effects of the Proposed Development. Those effects which are negligible are excluded for brevity.

Table 1.10 – Summary of Receptors, Likely Significant Effects, Mitigation Measures, and Residual Effects

Likely Significant Effect	Receptor(s)	Mitigation Measure	Residual Effect
Construction Phase			
Construction traffic: Additional traffic due to construction	Road users, Local residents	Construction Management Plan	Minor medium-term adverse
Operational Phase			
Pedestrian movement and capacity: Upgrade of existing PROW network	Pedestrians	N/A	Minor long-term beneficial
Pedestrian Severance: Additional vehicle traffic	Pedestrians	Improved crossing on Chidswell Lane as a part of Site Access 4	Negligible

Cycling Facilities: New cycle routing potential and improved PROW network accessibility	Cyclists	N/A	Minor long-term beneficial
Public Transport: Bus network passenger uplift	Bus passengers	N/A	Minor long-term beneficial
Junction Capacity and Driver Delay	Road users	Contributions to local junction improvements via S106 agreement	Minor long-term adverse

Summary

1.275 A minor long-term adverse effect of the complete and operational Proposed Development is expected on the road network before mitigation, with the effect being minimised or addressed through junction improvements made by KC and to which the Applicant will contribute towards.

1.276 The remaining residual effects of the operation of the Proposed Development are all beneficial and support the Applicant's intent that the Site and Proposed Development make a positive contribution to the local area and provide a desirable place to live and work in the future.

1.277 As part of the Transport Assessment, a Framework Travel Plan (FTP) has been prepared to encourage residents, employees and visitors of the Proposed Development to travel by sustainable modes as opposed to the private car. This FTP will provide a package of measures aimed at promoting sustainable travel and reducing car reliance among residents and visitors. The FTP targets a 5% reduction in single occupancy vehicles that would reduce operational traffic flows and driver delay. The implementation of the FTP, whilst not taken into account as mitigation for the purposes of the EIA, will have a positive effect on the local area (and within the Proposed Development) by reducing new vehicle volumes, contributing to the use of sustainable and active travel in the local area, and driving improvement following completion of the Proposed Development.

1.278 The overall residual effects of the Proposed Development are considered with regard to the likely significant effects and proposed mitigation measures. Whilst some effects may have implications for transport, the mitigation measures proposed ensure that these effects are managed. The majority of effects as a result of the scheme are anticipated to be negligible or beneficial for transport and access, with the exception of construction traffic, which is anticipated to have a limited minor medium-term adverse effect during the period of construction.

Ecology

Introduction

1.279 This Chapter of the ES assesses the likely significant effects of the Proposed Development with respect to Ecology. This chapter also describes the methods used to assess the effects; the baseline conditions currently existing at the Site and surrounding area; the mitigation measures required to prevent, reduce or offset any significant negative effects; and the likely residual effects after these measures have been adopted.

Baseline

1.280 To provide information on the Site's baseline ecological value, the following studies have been carried out; with the relevant reports produced being:

- Extended Phase 1 Habitat Survey. July 2018. WYG Report Ref: A054074
- HSI Assessment. May 2018. Report Ref: R-3280-01.

- Barn Owl Scoping Assessment. April 2018. Report Ref: R-3280-02.
- Ornithological Summary (Breeding Birds). October 2018. Report Ref: R-3280-03.
- Badger Assessment. April 2018. Report Ref: R-3280-04.
- Bat Roost Suitability Assessment (Trees). April 2018. Report Ref: R-3280-05.
- Bat Activity Survey. November 2018. Report Ref: R-3280-06.
- Water vole Assessment & Report. Sept. 2018. Report Ref: R-3280-07.
- Reptile Survey. October 2018. Report Ref: R-3280-08.
- Hedgerow Assessment. July 2018. Report Ref: R-3280-09.
- Bat Roost Suitability Assessment (Houses). August 2018. Report Ref: R-3280-10.
- Bat Emergence Survey. August 2018. Report Ref: R-3280-11.

1.281 No internationally designated sites were identified within 20km of the Site boundary or downstream of the Becks.

1.282 Ten locally designated sites lie within 2km of the Site. These include a mix of Local Wildlife Sites (LWS), Leeds Nature Areas (LNA) and Sites of Wildlife Significance (SWS).

Table 1.11 – Summary of Non Statutory Designations

Non-Statutory Site	Designation(s)	Location	Notes
Dogloitch Wood	LWS, SWS	20m east	Woodland with high bluebell density cover
Dum Wood	LWS, SWS	20m east	Woodland with high bluebell density cover
Haigh Hall Spring Wood North	LWS, LNA	880m east	Woodland with high bluebell density cover
Haigh Hall Spring Wood South	LWS, LNA	880m east	Woodland with high bluebell density cover
Haigh Wood	LWS, LNA	850m north east	Woodland with high bluebell density cover
Scargill Wood	LWS, SWS	70m north	Ancient and semi-natural woodland
Soothill Wood	LWS	230m north west	Ancient and semi-natural woodland
Ardsley Reservoir	LNA	1.5km north east	-
Judes Pond	LNA	1.2km north east	-
Soothill Brick Works	SWS	220m north west	-

1.283 A small area of the Site, including a single length of hedgerow and small section of wooded watercourse positioned towards the centre of the eastern boundary, is mapped as being within the Kirklees Wildlife Habitat Network (KWHN). The KWHN is covered by Policy PLP 31 – Strategic Green Infrastructure Network, in the Kirklees Strategic Local Plan. This policy requires development to protect and, where possible, enhance the biodiversity and ecological linkage of habitat within and connecting to the KWHN. Dum Wood and Dogloitch Wood, along with downstream sections of the wooded watercourse are also covered by the KWHN.

1.284 A number of habitats are present on the Site. Table 1.12 below summarises the habitats and their sensitivity to change.

Table 1.12 – Summary of Habitats

Habitat	Extent	Notes	Sensitivity to change
Arable	102.25 ha	Extensive but of low conservation significance, with similar habitat being abundant locally. Site level importance only.	Low
Poor Semi-improved grassland	1.78 ha	Site level importance only.	Low
Scrub	0.91 ha	Site level importance only.	Low
Broadleaved woodland – Semi-natural	1.67 ha	On Site woodland is currently of Site level importance only.	Moderate
Broadleaved woodland - Plantation	1.84 ha	Young plantation is currently of Site level importance only.	Low
Buildings	0.06 ha	Negligible ecological value	Low
Gardens	0.27 ha	Site level importance only	Low
Inundation vegetation	0.12 ha	Site level importance only	Moderate
Hedgerows	3725m	Most are of low quality, but all will qualify as NERC Act habitat, whilst some are 'important' under the Hedgerow Regulations. Local level importance.	Low
Watercourse	875m	Green corridor of Local level importance	High
Drainage ditches	526m	Site level importance only	Low
Scattered Broadleaved Trees	-	Site level importance only	Low

1.285 The table below runs through each of the Site's habitats, listing the habitat types, extent and Habitat Units. Habitat types vary between the JNCC classification (used for Preliminary Ecological Appraisals) and the UK Habitat Classification (used for Biodiversity Metrics); to confirm which habitat types have been used in the calculations, both are provided in the table below.

Table 1.13 – Biodiversity Metrics – Baseline Score

JNCC Habitat Classification	UK Habitat Classification	Extent (ha)	Ecological Baseline – Habitat Units
Arable	Cropland – Cereal crops	102.25	204.50
Poor Semi-improved grassland	Grassland – Modified grassland	1.78	3.56
Scrub	Heathland and shrub – mixed scrub	0.91	5.46
Broadleaved woodland – Semi-natural	Woodland and forest – Other woodland: broadleaved	1.67	10.02
Broadleaved woodland - Plantation	Woodland and forest – Other woodland: Young Trees Planted	1.84	7.36

JNCC Habitat Classification	UK Habitat Classification	Extent (ha)	Ecological Baseline – Habitat Units
Buildings	Urban - Developed land; sealed surface	0.06	0.00
Gardens	Urban – Vegetated garden	0.27	0.54
Inundation vegetation	Grassland – Tall herb communities	0.12	1.08
Drainage ditches	Lakes – Ditches	526m	2.12
A-1 Site Habitat Baseline			**234.64**
Hedgerows	Native Hedge	3725m	7.45
B-1 Site Hedgerow Baseline			**7.45**
Watercourse	Rivers & Streams (Other)	875m	7.04
C-1 Rivers Data			**7.04**
Scattered Broadleaved Trees	-	-	-

1.286 Detailed studies were undertaken to confirm the status of notable or protected species.

Table 1.14 – Summary of Species / Species Group Surveys

Species/ Species group	Notes
Great crested newt	Likely absence demonstrated
Barn Owl	Likely absence demonstrated
Breeding Bird	High number of breeding birds present. Species of particular note are Yellowhammer and Skylark. District level importance
Badger	Likely absence demonstrated
Bat Roosting	Trees – Some trees with roost potential Buildings - Likely absence demonstrated
Bat Activity	Very limited activity (foraging/commuting) – Site level importance
Water vole	Likely absence demonstrated
Reptile	Likely absent, or present at very low density - Site level importance

1.287 Himalayan Balsam (Impatiens glandulifera) is scattered throughout the Site, concentrated along the central watercourse, damp ditches, woodland edges and some field margins. The presence of this species is considered to be Local level importance. No other plant species listed of Schedule 9 of the Wildlife and Countryside Act (1981) have been identified on Site.

Methodology

1.288 The assessment of the potential impacts of the Proposed Development has been undertaken in accordance with best practice guidance and considers both on-site impacts and those that may occur to adjacent and more distant ecological features (within a 2 - 10 kilometre radius of the Site boundary). Impacts are considered at both the construction stage and operation stage within significant negative or beneficial effects on wildlife identified.

Summary of Likely Significant Effects

1.289 The construction stage will present the major impact in relation to ecology, as it will see direct impacts on habitats and species / species groups through vegetation clearance, as well as indirect

impacts from disturbance (noise, vibration, lighting, increased human presence, vehicular movement) and the potential for inadvertent release of pollutants.

1.290 Direct impacts on Dum Wood and Dogloitch Wood were designed out of the proposals at an early stage. This was achieved by amending the red line boundary to maintain a c.20-30m wide green stand-off from the woodland edge. Despite this standoff, in the absence of mitigation, minor indirect impacts could still occur. Without a clear exclusion zone being marked out on the ground, contractors could encroach within the canopy spread or root protection area of the woodland edge trees, resulting in physical damage to trees through collision, damage to roots by compaction/ severance and damage to the health of trees by spilling hazardous chemicals. The release of airborne pollutants (namely dust), could also lead to short term damage of the woodland ground layer. This impact would be negative and short lived, affecting only those trees and ground flora along the woodland edge. The impact would be felt for the duration of the construction period and would be reversible. The likely significance of this impact would be minor and the sensitivity low. The magnitude of the effect would only extend to the woodland edge bordering the Site.

1.291 Direct impacts would occur through targeted clearance of all hedgerows that conflict with the development footprint. This clearance would occur within the first stage of works within each development phase, with woody material being chipped and spread nearby. Hedgerows that lie within Publically Accessible Open Spaces would be retained, but at risk of damage by construction activities. Potential impacts are similar to those described above for the woodland edge trees. This impact would be negative and restricted to the Site, impacting only hedgerows within the red-line boundary. The impact would be felt for the duration of the construction period and would be reversible with mitigation. The magnitude of this impact would cover all onsite hedgerows, although the likely significance would be minor. The sensitivity to change would be low.

1.292 The parameter plan shows the watercourse retained in its current channel. However, as shown in the parameter plan, two new bridge points will need to be constructed across the watercourse, to the east and west. Construction of the new bridge points will result in small scale habitat loss and fragmentation, with the watercourse at these points being diverted under the new roads through culverts. This impact will be negative and irreversible, occurring once during the construction period, but with impacts being felt at a small (Site-wide) scale. Construction of the new bridge points, together with wider groundworks within close proximity of the channel also have the potential to result in minor indirect impacts, through the release pollutants (i.e. silt or hazardous chemicals). This impact would be negative but reversible through spontaneous recovery. It could occur numerous times throughout the construction period and would potentially be felt over a large geographical area, with pollutants being carried downstream. Each time the effect would be short-term and temporary. The likely significance of this impact would be moderate.

1.293 Works associated with this stage will result in high, but localised (confined to each particular phase), levels of disturbance. This is likely to result in temporary displacement of many of the species noted on Site, either to sections of the Site not being developed, or from the Site entirely. For most of the bird assemblage recorded, this impact is likely to of no more than Site level significance. With regards to yellow hammer (hedgerows) and skylark (arable fields), development is likely to result in long term displacement; this impact will be negative at a district scale and would be largely irreversible. The likely significance of this impact would be major.

1.294 In the absence of mitigation, construction activities would lead to the large-scale spread of invasive weeds through the Site. Viable material could also be transported off-site, on the wheels of heavy machinery, resulting in off-site contamination. This impact would be negative and felt over a potentially large geographical scale. It would however be reversible with mitigation. The likely significance of this impact would be moderate.

1.295 The operational stage will comprise the longest lasting effects. The proposed residential and employment uses will result in traffic generation on new and existing roads, along with the presence of large numbers of people within the Site and accessing local footpaths and the presence of domestic pets. Homes, gardens and the Site’s roads will all be illuminated.

1.296 It is anticipated that the Site's landscaping will be carried out by future developers on a phase by phase basis. The management of the Site may be undertaken by a Management Company but this will be determined following further discussions with the Council. Management will include provision for the habitat areas around the Site, although in the absence of mitigation this is likely to involve only non-specialist intervention by the same Maintenance Company.

1.297 The Table 1.15 summaries the predicted impacts of the Operational Phase, in the absence of mitigation.

Table 1.15 – Summary of predicted impacts of the Operational Phase, in the absence of mitigation

Important Ecological Feature	Predicted Likely Impact(s)	Likely Significance
Dum Wood & Dogloitch Wood LWS, SWS, KWHN (District)	Increased pressure on woodland by new residents. Trampling of diverse woodland ground layer.	Major negative
Hedgerows (Local)	Inappropriate management	Minor negative
Watercourse (Local)	Inappropriate management Use of herbicides and pesticides. Release of none-native flora/ fauna.	Moderate negative
Breeding Bird (District)	High levels of light disturbance leading to long term displacement of many species Increase in urban habitats could lead to increase in some species	Moderate negative
Invasive Non-Native Species (Local)	Increased spread of invasive weeds throughout publically Accessible Open Space.	Moderate negative

Mitigation

1.298 Many of the potential impacts identified for the various Important Ecological Features (IEFs) crossover, and are interlinked; such as Breeding birds and Hedgerows, Invasive Species and Watercourse, etc. The mitigation being put forward to address an impact on one of the IEFs is therefore likely to mitigate a similar impact on one or more of the other IEFs. As such, the following section discusses Mitigation/ Compensation measures proposed for the Site as a whole, rather that separately for each IEF.

1.299 Mitigation is focussed on the retention and protection of key habitats and faunal populations, with any losses over-compensated for through long term management and enhancement of lower value retained habitats, or the creation of new higher value habitats within the allocated greenspace. Throughout the design stage, the importance of retaining connectivity through and around the Site, has been considered, allowing green infrastructure to be embedded into the scheme as shown in the Green Infrastructure Parameter Plan, ensuring the Site remains permeable for resident wildlife throughout the lifetime of the scheme.

Cumulative Effects

1.300 Possible cumulative impacts have been identified for two adjacent development sites; these being a residential scheme to the southwest of the Site being progressed by Barratt Homes for 252 dwellings (application reference: 2019/62/92787/E) and C.C. Projects' Heybeck Lane proposals to the immediate north of the Site.

1.301 Of the five IEFs identified on Site, only one (Breeding Birds) is likely to experience any significant in-combination effects from these two developments. Being predominantly arable land, a similar breeding bird assemblage is likely to be present on both sites, including skylark and yellow

hammer. The two development sites are therefore likely to impact on the same local bird populations.

Residual effects

1.302 Mitigation has allowed many of the potential impacts to be avoided, or significantly reduced, with it being possible to downgrade the effect of many of the residual impacts from negative to neutral or minor positive.

1.303 With a development site of this scale, some impacts remain significant, and are very hard to mitigate, especially in the case of disturbance from factors such as noise, lighting and increased human presence. Regardless of what measures are put in place, some of the most sensitive species/ species groups (farmland breeding birds) are likely to be displaced from the Site, either temporarily or long term.

Summary

1.304 The Site's baseline has been thoroughly assessed and a number of habitat and species/ species groups have been identified as Importance Ecological Features. Parameter plans take account of these ecological constraints and will allow for the connectivity of habitats through the Site and, for the most part, the retention and protection of key habitats and features.

1.305 The proposals are subject to an outline application with access only included for determination. A number of detailed matters will be addressed on a phase by phase basis through subsequent reserved matters submissions. These include:

- Details of how precautions and mitigation relating to protected species and invasive species will be dealt with in terms of each phase. It is likely that updating survey data on some or all of these would be required at this time.
- Details of the protection of retained habitat and the prevention of pollution / disturbance of habitats around the Site.
- Details of habitat creation and management.

1.306 It is therefore anticipated that the following would be secured through conditions similar to those set out in the British Standard BS 42020 (2013):

- Biodiversity Management Plan (BMP)
- Construction Environmental Management Plan (CEMP)
- Invasive Weed Management Plan (IWMP)

1.307 Detailed wording will need to be agreed with the Council and should provide the flexibility to allow the consideration of ecological matters on a phase by phase basis as the Proposed Development is delivered over time.

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