

THE RIVER DON DISTRICT

PLANNING APPLICATION
MAY 2008

ENVIRONMENTAL STATEMENT NON-TECHNICAL SUMMARY



The River Don District Outline Planning Application for Mixed- Use Development

On behalf of The British Land Company (Plc)

Environmental Statement: Non-Technical Summary

May 2008

The logo for Drivers Jonas, featuring the company name in a white serif font inside a dark red square with a white border.

DRIVERS
JONAS

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PREFACE

River Don District

Environmental Statement

Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999

Proposed Development:

Outline Planning Application with all matters reserved for Mixed-Use Development in the Lower Don Valley, Sheffield.

Site Location:

Land at the former Jessop and Staybright Works, bounded by Meadowhall Way, The River Don Carbrook Street and Weedon Street known as The River Don District.

Applicant: The British Land Company PLC.

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Drivers Jonas

May 2008

1. Introduction

River Don District (RDD) - Background

- 1.1 This Document is a Non-Technical Summary of the Environmental Statement that accompanies an application for outline planning permission by The British Land Company Plc (British Land), to Sheffield City Council for the development of a major new community at the River Don District (RDD) in Sheffield.
- 1.2 The ES for the proposed mixed-use development considers the environmental effects arising from the proposals and the cumulative effect with regards to committed developments at the time of the assessment.
- 1.3 This application submission represents a culmination of a number of years of masterplanning and consultation with Sheffield City Council and many other stakeholders, including the general public.
- 1.4 British Land has been working closely with Sheffield City Council for a period of over 5 years to regenerate this key 'Gateway' to Sheffield. This culminated in the Council endorsing a comprehensive masterplan for the River Don District in September 2007.
- 1.5 British Land is now submitting an outline planning application for development that has grown from the principles contained within the Masterplan. The opportunity is to create a new vibrant mixed use community of offices, housing, local retail, leisure, hotel and community facilities. This comprehensive approach will bring new work, living and leisure opportunities to the Don Valley and act as a catalyst for the regeneration of the wider local area.
- 1.6 This proposal signals the beginning of a transition for the River Don District based around a development which has the principles of sustainability at its centre.
- 1.7 Underpinning each of the core objectives for the proposal is a commitment to achieve sustainable development from an economic, social and environmental perspective.

The Site

- 1.8 The RDD application site is situated within the River Don District adjacent to Meadowhall Shopping Centre, located to the north-east of Sheffield City Centre and within the northern portion of the Lower Don Valley. The site extends to approximately 25.66 hectares.
- 1.9 The River Don District was previously the manufacturing hub of Sheffield, based on the steel industry.
- 1.10 The application site is illustrated on the site location plan in the appendix to this Summary. This also provides a red line around the proposed application site.
- 1.11 Most of the application site has been previously-developed and is currently unused. The majority of the site has been cleared of previous structures but there are remains of buildings within the middle of the application site.

Application for Outline Planning Permission for RDD

- 1.12 The RDD planning application is submitted in Outline with all matters reserved.
- 1.13 A set of Parameters Plans is submitted with the application to establish the parameters of the proposed development sufficiently to allow the Environmental Impact Assessment (EIA) process reported here to be undertaken in an accurate and robust manner.
- 1.14 A copy of the Parameter Plans can be found in the Appendix to this Summary. These plans consider the parameters of development including land use development zones, quantum of development, height and access. This will allow all of the potential environmental effects to be considered. It is these Parameter Plans which set the framework for the determination of this planning application. This is further explained in Chapter 3.
- 1.15 The proposals for the site include the following range of uses.
- n Demolition of existing buildings and site preparation;
 - n Employment uses and Business uses (predominantly offices);
 - n Residential accommodation including serviced apartments;
 - n Retail uses;
 - n Food and drink uses;
 - n Leisure uses;
 - n Community and civic facilities;
 - n Hotels;
 - n Ancillary commercial and non-commercial uses;
 - n Car parking spaces (including multi-storey car parking);
 - n Means of access;
 - n Public and private open space;
 - n Highways works;
 - n Integrated transport measures;
 - n Long term flood protection with wider benefits; and,
 - n Landscaping and improvements to public realm.
- 1.16 Further details on the proposed development can be found in Chapter 3.

Timescale of Development

- 1.17 It is likely that the proposed development will be phased and delivered over a 15 year period.

Background to Environmental Statement (ES)

- 1.18 The ES has been prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 and Circular 2/99, which provides guidance on EIA procedure and on the preparation of Environmental Statements.
- 1.19 It is considered that the proposed development falls within Category 10b of Schedule 2 within the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999. This refers to: 'urban

development projects'. Such projects may require EIA if 'the area of the development exceeds 0.5Ha'.

- 1.20 British Land provided Sheffield City Council SCC with a Scoping Report on 21 December 2007.
- 1.21 The Scoping Report provided a list of EIA topics to be addressed as follows:

Agreed EIA Topics
Consideration of Alternatives
Traffic and Transport
Air Quality
Drainage
Flooding
Noise and Vibration
Ground Conditions and Remediation
Ecology
Landscape and Visual
Socio-Economic
Phasing and Construction
Historic Environment
Archaeology
Non-Significant Impacts
Summary of Mitigation Measures
Summary of Residual Impacts
Cumulative Impact and Interaction

- 1.22 SCC confirmed in writing on 6 February 2008 that the Scoping Report identified all of the issues that would need to be addressed in an Environmental Impact Assessment (EIA) and provided additional comments which have been addressed as part of the Outline planning application.

EIA Process

- 1.23 The purpose of the Environmental Statement is to identify all significant environmental effects, which may result during the complete lifecycle of the development. This in turn provides the Local Planning Authority with the information it requires to determine the relevant applications.
- 1.24 The main activities in the EIA process can be summarised as follows:
 - n Definition of the project to be assessed;
 - n Description of the "baseline" environment (i.e. the conditions that are likely to prevail at the commencement of the project);
 - n Definition of the scope of the assessment;
 - n Consultation with interested parties;
 - n Prediction of the likely effects of the project;
 - n Evaluation of these effects in terms of their potential significance;

- n Description of the nature and effectiveness of measures which could be adopted in order to mitigate significant adverse effects.
- n Submission of ES and Publicity;
- n Review of Adequacy of Environmental Information by LPA;
- n Consultation;
- n Decision;
- n Post Decision Monitoring if Required.

Contact For Further Information

1.25 For further information contact:

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2. Method Statement

- 2.1 The EIA has been commissioned by The British Land Company Plc (BL). The project has been co-ordinated by Day Management Partnership UK Ltd (DMP) (Project Managers). Preparation of the planning application has been co-ordinated by Drivers Jonas (DJ) (Planning Consultants), with considerable input from a large number of specialist consultants.
- 2.2 This chapter of the ES provides a detailed breakdown of the chosen project methodology. The following key information is included:
- n The Consultant Team, their individual responsibilities and how the EIA process, leading to preparation of the ES, has been co-ordinated;
 - n Details of technical studies undertaken;
 - n The approach to determining scale and significance of effects, and the basis upon which predictions were made (e.g. professional knowledge and judgment, initial studies, desktop exercises, preliminary survey work); and
 - n What guidelines, methods and techniques have been used in the process of determining significance of effects.

Consultant Team

- 2.3 The EIA studies have been co-ordinated by DMP Ltd and Drivers Jonas. The individual technical studies have been undertaken by specialists and consultants who have been involved in the design and Environmental Impact Assessment of the proposals as set out below:

Table 2.1: Consultant Team

Topics/Documents	Consultant
Overall EIA Co-ordination	Drivers Jonas
Scheme Plans, Urban Design and Architecture	Hopkins Architects
Methodology and Scope of EIA	Drivers Jonas
Background to Scoping	Drivers Jonas
Proposed Development and Format of RDD Planning Application	Drivers Jonas and Hopkins Architects
Consideration of Alternatives	Drivers Jonas
Traffic and Transport	Peter Brett Associates (PBA)
Air Quality	Peter Brett Associates (PBA)
Drainage	AKT Consultants
Flooding	Peter Brett Associates (PBA)
Noise and Vibration	Peter Brett Associates (PBA)
Ground Conditions and Remediation	Peter Brett Associates (PBA)
Ecology	Baker Shepherd Gillespie (BSG)
Landscape and Visual	Hyland Edgar Driver (HED)
Socio-Economic	PricewaterhouseCoopers (PWC)/Hunt Dobson Stringer (HDS)
Phasing and Construction	Laing O'Rourke/DMP

Topics/Documents	Consultant
Historic Environment	Arcus
Archaeology	IHCM
Non-Significant Impacts	Drivers Jonas
Summary of Mitigation Measures	Drivers Jonas/EIA Team
Summary of Residual Impacts	Drivers Jonas/EIA Team
Cumulative Impact and Interaction	Drivers Jonas/EIA Team
Non-Technical Summary	Drivers Jonas

Approach to Technical Studies Undertaken

- 2.4 The EIA studies commenced at an early stage in the evolution of the proposals, when the application proposals had not yet been fully developed. The findings of these baseline environmental studies have played an important role in the design of the development. These studies defined the environmental sensitivities and constraints associated with the redevelopment of the site at the outset to avoid or minimise potential impacts by design. The process has been necessarily iterative to reflect this.
- 2.5 Design Team Meetings, attended by key members of the project team, were held at regular intervals throughout the EIA process. These meetings provided a valuable forum for the exchange of information and ensured that the design team were fully aware of the environmental constraints and opportunities within the site.
- 2.6 The technical EIA studies have been undertaken in accordance with relevant guides and procedures. The majority of this guidance is specific to the various EIA key issues and is therefore referenced within the assessment chapters.
- 2.7 The majority of assessments involved consultations with statutory and non statutory bodies, desk-based research, site inspections and surveys, impact prediction and input of mitigation to the design, where appropriate.
- 2.8 The content and conclusions of the ES are based on the fullest assessment that could be made, given the information available at the time of writing. The main objective of the ES is to present a clear, reasoned description of the beneficial and adverse impacts of the proposal.

Consultations

- 2.9 The EIA involved a programme of consultations with a number of statutory and non-statutory organisations and interest groups in order to identify the views and concerns of interested / affected parties with respect to the likely environmental effects of the proposed development.
- 2.10 Consultations have continued throughout the preparation of the ES, and in particular, regular meetings have taken place with Sheffield City Council, the Highways Agency and the Environment Agency. A full list of organisations consulted (during the scoping stage and EIA process) is provided below:

Table 2.2: Consultation

Topics	Consultee(s)	Details
Scheme Plans	Sheffield City Council (SCC) – Howard Baxter, John Keyworth, Steve Benn and Harshada Deshpanda.	Ongoing discussions in relation to a range of technical and procedural matters; fortnightly Design Workshops and other meetings.
Traffic and Transport	SCC - Ian Wheeldon and Julie Meese, Peter Bull, John Bann, Steve Benn, Tom Lawrence, Duncan McIntyre, Dave Budd, John Keyworth and Dick Proctor. Highways Agency (HA) - Nicolas Whitford, Alex Bywaters and Graham Reilly and Faber Maunsel. SYPTE - Roy Wicks, Chris Buck and George Sampson. RMBC - Ken Wheat, Tony Sarjeant and Phil Turnage.	Methodologies for assessment discussed late Nov/early Dec 2007. General discussions about approach have been ongoing. Monthly strategy meetings with SCC/SYPTE. Regular meetings with the Highways Agency. Meetings with Rotherham Metropolitan Council.
Air Quality	SCC - Dominic Stokes (Environmental Health Officer)	Discussed proposed measurement and assessment methodology by phone on 04/08/06. A written version of the proposed methodology was sent to DS on 23/08/06. Spoke to DS in meeting on AQ and Noise on 19/10/07.
Drainage	SCC - Pete Berry Environment Agency (EA)	Meetings and correspondence between SCC and EA.
Flooding	SCC - Pete Berry Environment Agency (EA)	Meetings and correspondence between SCC and EA.
Noise and Vibration	SCC - Dominic Stokes (EHO)	Spoke to DS in meeting on AQ and Noise on 19/10/07. Detailed subsequent discussions.
Ground Conditions and Remediation	SCC - David Sparks (EPS - Human Health) EA - John Barber (Controlled Waters)	Reports sent to SCC prior to meeting held with David Sparks. Reports sent to EA.
Ecology	Sheffield Wildlife Trust Natural England - Wakefield office SCC - Jean Glasscock (Ecologist)	Initial consultations taken place with Sheffield Wildlife Trust and SCC Ecology Section.
Landscape / Visual Impact	SCC - Harshada Deshpanda, David Kemp and Keith Missen.	Letter to SCC 4.12.07 and ongoing discussions.
Socio-Economic	Officers at SCC including Joel Hardwick and Cathy Tandy. Primary Care Trust - Elaine Needham and Gary Chalseworth.	Meetings and ongoing discussions.
Historic Environment	SCC - Craig Broadwith	Report sent to SCC and ongoing discussions.
Archaeology	SYAS - Jim McNeil	Initial consultation was held at Workstream meeting (Oct 2007). Ongoing discussions with Jim McNeil including a meeting on 16 April 2008.

2.11 Extensive pre-application discussions have taken place with statutory / non statutory consultees and third parties including surrounding businesses, Community Forums, residents and adjoining owners as well as the general public. Full details of this consultation process and the feedback received are contained within the Statement of Community Involvement (SCI) submitted with this application.

Planning Policy

- 2.12 As advised in EIA: A guide to good practice (June 2006), the ES does not contain a separate chapter addressing Planning policy. There is no requirement to do so. Each ES chapter has its own section on relevant policy where appropriate. A detailed Planning Policy Statement and Office Campus Policy Assessment have been prepared as separate documents. These form part of the Outline application package.

Assessment of Impacts

- 2.13 Each key EIA topic as set out in Chapter 1 has been given a separate chapter in the ES and this section sets out the way in which the assessment of impacts for each of the technical studies is presented within this document. Each of these technical chapters has been generally constructed as set out below.
- 2.14 The exception to this is the Phasing and Construction chapter (Chapter 14). By its very nature this assessed the environmental effects of phasing and construction in a different format which is explained in the chapter itself.
- 2.15 A set of Parameters Plans are submitted with the application to establish the parameters of the proposed development sufficiently to allow an EIA to be carried out in an accurate and robust manner and to test the worst case scenario of environmental effects. A copy of the Parameter Plans can be found in the Appendix to this document.
- 2.16 The Parameter Plans set the framework for the determination of this planning application along with the Regulatory Text and Design Codes.
- 2.17 Further details can be found in the document - Parameters Plans and Regulatory Text. This document has been submitted separately and should be considered as part of the application package. It provides further clarification as to the interpretation of the Parameters Plans.

Introduction

- 2.18 Each of the technical chapters begins with a section detailing the authorship of the assessment and the chapter within the ES.

Potential Impacts

- 2.19 This section indicates the potential significant effects to which the proposals give rise.

Assessment Methodology

- 2.20 This section describes the method or approach employed in the assessment of impacts, the criteria by which the significance of impacts has been evaluated, the sources of information used and any technical difficulties encountered. Legal requirements are also identified where applicable.

Consultation

- 2.21 This section provides a summary of the consultation undertaken for the assessment.

Policy Context

- 2.22 This section outlines current policy relevant to this section of the ES.

Baseline Conditions

- 2.23 This section describes the baseline environmental conditions i.e. the current situation and anticipated changes over time in the absence of the proposed development. This is a critical part of the EIA process as it provides a measure against which potential environmental effects can be assessed.

Impact Assessment

- 2.24 This section describes the impacts of the proposed development and assesses their likely significance. The assessment of impact significance has been undertaken using appropriate national and international quality standards. Where no such standards exist, the judgements that underpin the attribution of significance are described. The assessment of impact significance is determined by its **magnitude** (i.e. how far the impact deviates from the established baseline conditions) and **receptor sensitivity**.
- 2.25 The following factors are also of relevance.
- n Whether the impact is direct or indirect;
 - n Whether the impact is reversible or irreversible;
 - n Whether the duration of the impact is short, medium or long-term; and
 - n Whether the impact occurs in isolation or is cumulative or interactive.
- 2.26 In order to provide a consistent approach to describing significance of impacts and to facilitate comparison between impacts on different environmental components, the following terminology has been used throughout the ES.
- n Adverse - detrimental or negative impacts to an environmental resource or receptor;
 - n Beneficial - advantageous or positive impact to an environmental resource or receptor; or
 - n Negligible - no significant impacts to an environmental resources or receptor.
- 2.27 Where adverse or beneficial impacts have been identified, these have also been assessed against the following scale (as shown above):
- n Minor - slight impact;
 - n Moderate - limited impact; and,
 - n Substantial - considerable impact.

Mitigation Measures

- 2.28 One of the main aims of the EIA process is to develop mitigation measures to avoid, reduce or compensate for any significant adverse effects of a project. These measures can relate to site construction or the completed development. This section of the ES chapter describes the measures that would be implemented to avoid or ameliorate potential adverse impacts and enhance the potential beneficial impacts of the development.
- 2.29 In many cases, mitigation measures are inherent within the development proposals (either through design or operation) whereby potentially significant adverse impacts are avoided, although not all impacts can be avoided and there are some measures proposed to reduce or compensate for these.

However, in considering the impacts of the proposed development, these have been assessed with the described mitigation measures in place.

- 2.30 A summary of Mitigation Measures can be found in Chapter 20. We recommend that the mitigation measures required will be addressed in the detailed design of the development and enforced through planning conditions.

Cumulative Effects and Interaction of Effects

- 2.31 This section considers the cumulative effects and the interaction of effects.
- 2.32 Cumulative effects are those that arise from incremental changes caused by other past, present or reasonably foreseeable actions together with the project.
- 2.33 Interactive effects are the reactions between impacts, whether between impacts of just one project or between the impacts of other projects in the area.

Summary of Residual Impacts

- 2.34 This section considers the residual impacts on the environment once the proposed mitigation measures have been implemented.
- 2.35 Each of the sections conclude with a brief summary outlining the potential impacts, proposed mitigation measures and residual impacts of the development and includes an overall summary in tabular form.

References

- 2.36 References for all documents referred to in each chapter will be provided within a list.

Abbreviations / Glossary

- 2.37 A list of abbreviations used within the chapters will be set out to facilitate the understanding of the ES.

Non-Significant Impacts

- 2.38 As set out in the ES Scoping Report, a number of topics/issues have been scoped out of the EIA as they are either deemed to be non-significant effects, non-EIA issues or addressed elsewhere in the planning application submission. These were agreed with the SCC during the Scoping exercise.
- 2.39 These non-significant topics include:
- n Health and Safety;
 - n Human Health;
 - n Wind Environment and Micro-Climate; and
 - n TV Reception.
- 2.40 These non-significant impacts are addressed further in Chapter 17.

3. Proposed Development and Format of RDD Planning Application

Proposed Development

3.1 As set out in Chapter 1, the development proposals for the RDD application site include:

- n Demolition of existing buildings and site clearance;
- n Employment uses and Business uses (predominantly offices);
- n Residential accommodation including serviced apartments;
- n Retail uses;
- n Food and drink uses;
- n Leisure uses;
- n Community and civic facilities;
- n Hotels;
- n Ancillary commercial and non-commercial uses;
- n Car parking spaces;
- n Means of access;
- n Public and private open space;
- n Highways works;
- n Integrated transport measures;
- n Long term flood protection with wider benefits;
- n Landscaping and improvements to public realm.

3.2 The description of the development for which planning permission is sought is:

“Demolition of existing buildings; site preparation; redevelopment of the application site for a mix of uses including: retail floorspace (Use Class A1), commercial office floorspace (A2), food and drink facilities (A3, A4, and A5) employment and business uses (B1), hotels (C1), residential accommodation (including serviced apartments) (C3), community and civic facilities (D1), leisure uses (D2) and ancillary commercial and non-commercial uses, car parking spaces (including multi-storey car parking), public and private open space, and landscaping works, highways, access and engineering works and associated works.”

Plot by Plot Assessment

3.3 The ES has been prepared by reference to an application site which has been broken down into a series of five development Plots. These Plots are illustrated on the appended Parameters Plans. This is to ease environmental assessment and to provide a logical process for consideration of all supporting documentation.

3.4 All ES chapters have been prepared and should be read in conjunction with the Plot by Plot plan.

Format of RDD Application

- 3.5 The planning application is submitted in Outline with all matters reserved. Subsequent applications are likely to be submitted in the form of Reserved Matters submissions.

Parameters Plans

- 3.6 A set of Parameters Plans are submitted with the application to establish the parameters of the proposed development sufficiently to allow an EIA to be carried out in a accurate and robust manner. The Parameters Plans also establish the Plot by Plot approach as set out above.
- 3.7 These consider the parameters of development including land use, quantum of development, building levels, heights and access. This will allow the significance of any potential environmental effects to be considered. It is these Parameter Plans which set the framework for the determination of this planning application along with the Regulatory Text and Design Codes.
- 3.8 Each of the Parameters Plans submitted as part of the outline planning application defines and regulates a separate aspect of the RDD development.
- 3.9 The detail regulated by each individual plan is set out below.
- 3.10 Further details can be found in the document - Parameters Plans and Regulatory Text. This document has been submitted separately and should be considered as part of the application package. It provides further clarification as to the interpretation of the Parameters Plans.

Parameter Plan 01 - Application Boundary and Site Levels

- 3.11 Parameter Plan P01 establishes the extent of the site for which planning permission for the development described above is sought and records existing site levels across the site as heights in metres Above Ordnance Datum (+AOD).

Parameter Plan P02 - Maximum Building Footprint

- 3.12 Parameter Plan P02 details:
- n The Plot by Plot labels utilised in this and other documentation for ease of site reference (Plots 1, 2, 3 /4 and 5).
 - n The maximum extent of built development (building footprint) in building zones across the site. It is not intended that all the area shown will be covered by buildings. However it does show the maximum points - particularly at the edges of the site - where built development may be located. This development will include buildings and associated basements, car parking areas, streets, pavements and public spaces.
 - n There is no minimum extent of built development. The relationship between potential streets and spaces and buildings is described in the Design Codes.
 - n An area reserved for the development of a realigned Meadowhall Way and a zone for the creation of an access from Meadowhall Way south into Plots 3/4.

- n A zone within which flood defence and alleviation works could be carried out. Such works could include the remodeling of existing ground levels and the creation of a flood alleviation channel. The form of these works will be agreed at the Reserved Matters stage to deliver the outputs required by the submitted Flood Risk Assessment. This flood solution is likely to include a flood channel the form of which is yet to be concluded.
- 3.13 Areas outside the Maximum Building Footprint may accommodate landscaping and open space features or engineering works such as roads and footpaths and the flood defence and alleviation works but will not accommodate buildings, multi-storey or surface car parks.

Parameter Plan P03 - Proposed Uses by Zone

- 3.14 Parameter Plan P03 outlines the proposed disposition of the uses for which consent is sought across the plots.
- 3.15 The Plan also includes overall maximum and minimum amounts of floorspace that would be developed by use across the site and on a plot by plot basis.
- 3.16 Table 1 sets out the floorspace maximums that will apply across the whole site and on a plot by plot basis.
- 3.17 It is not intended that each of the plot by plot maximums would be delivered in combination hence the need for further restriction as provided by the Maximum totals across the site.

Table 3.1: Floorspace

Use	Plot 1	Plot 2	Plot 3/4	Plot 5	Minimum Across Site	Maximum Across Site (1)
A1	0-1,000 sq m	2,000-2,499 sq m	0-500 sq m	0	2,000 sq m	2,499 sq m
A2-5, D1, D2	0-1,150 sq m	2,000-6,600 sq m	0-1,000 sq m	0	2,000 sq m	6,600 sq m
Hotel (C1)	0	0-10,000 sq m	0	0-10,000 sq m	0	10,000 sq m
B1	0-15,000 sq m	0-13,000 sq m	14,000-95,600 sq m	0-16,000 sq m	60,000 sq m	120,000 sq m
C3	460units - 64,061 sq m	80 units - 16,500 sq m	0 units - 28,520 sq m	0	800 units	97,950 sq m (1,300 units)
Parking Spaces	1,070	633	1,750	413	-	2,818
Overall Maximum	70,000 sq m	35,000 sq m	96,000 sq m	16,000 sq m	-	210,140 sq m

Notes:

1. Maximum and Minimum Across Site floorspace figures apply only to each individual use.
2. Overall Maximums restrict development of Floorspace on a Plot by Plot basis.
3. The Maximum Built Floorspace across the whole site will be 210,140 sq m. The figures exclude car parking areas, roof top plant, plant rooms and ancillary service and maintenance buildings including secure cycle storage, waste storage and recycling facilities and basement floorspace to be used for plant, services and equipment, storage and parking.
4. The proposed residential development figures include Serviced Apartments.
5. Residential development is indicated as a minimum number of units and a maximum floorspace in sq m for each Plot. A planning condition will outline the mechanism through which the mix of units to be developed will be controlled. This may vary over time by size and type of unit. A maximum floorspace figure is quoted to enable the maximum developable area to be controlled.
6. A Minimum of 800 and a Maximum of 1,300 residential units will be provided.

- 3.18 As outlined above, the outline consent that is sought will be restricted by maximum quantum of development by use and also overall.
- 3.19 The uses where the greatest flexibility is sought are between residential use (C3) and business use (B1). It is not intended that the maximum residential and the maximum office floorspace be constructed in combination - indeed, those elements in isolation would deliver 217,950 sq m of space - in excess of the floorspace cap detailed above.
- 3.20 In summary, the following uses characterise the Plots:
- Plot 1** - Predominantly residential use with office and possibly some small scale retail, leisure, food and drink and community uses.
- Plot 2** - Mixed-use neighbourhood centre combining a range of uses a community uses.
- Plot 3/4** - Predominantly office use and some residential, ancillary retail, leisure, food and drink use.
- Plot 5** - Either office or hotel use.

Parameter Plan P04 - Maximum Building Heights

- 3.21 Parameters Plan P04 it also sets maximum building heights in terms of the maximum height above AOD that will be developed. These heights have been adjusted during the design development and Visual Impact Assessment process and are considered to be appropriate in scale to the surrounding built fabric in the River Don District and to meet aspirations for the future in this area.
- 3.22 These maximum heights are generated through consideration of the likely number of storeys of development that will take place on each Plot, including rooftop plant.
- 3.23 This indicative number of storeys is then converted into a height in metres figure to provide planning certainty about the maximum proposed height of buildings and to provide flexibility in relation to the mix of uses that can be provided within each Plot, within the confines of Plan P03.
- 3.24 This information is shown indicatively in Table 2 below.

Table 3.2: Indicative Storey Heights

Height	Plot 1	Plot 2	Plot 3/4	Plot 5
Maximum height (including rooftop plant)	+59.10 AOD	+64.40 AOD	+65.65 AOD	+64.25 AOD
Indicative no. of maximum storeys	6 residential storeys	7 storeys (including 6 residential storeys and 1 ground floor commercial storey)	6 office storeys (Including 1 floor to commercial heights)	6 office storeys (Including 1 floor to commercial heights)

Notes:

1. A Residential Storey is 3.2m tall
2. A Commercial Storey is 4.5m tall
3. An Office Storey is 3.85m tall
4. The controlling factor in relation to the development is maximum building height, not the number of storeys, which is provided for information purposes only

- 3.25 Not all buildings across each Plot will be built to this maximum level. Plot specific requirements are detailed below and have been established on an iterative basis during the ES preparation. This is addressed in more detail in Chapter 12 (Landscape and Visual Impact) and Chapter 15 (Historic Environment).

Plot 1

- 3.26 Building heights on Plot 1 will consider the environment within the public park linked to the riverside area and the former public house on Carbrook Street.

Plot 2

- 3.27 Development heights on Plot 2 will be governed by the requirement to provide a public landmark space (as set out in the plan).
- 3.28 Maximum building heights permissible on the Plot will be determined with reference to a sunlight / daylight study undertaken during the detailed design process and submitted with any application for approval of Reserved Matters.
- 3.29 Building heights on Plot 2 will consider the former railway embankment.

Plot 3/4

- 3.30 Building heights on Plot 3/4 will consider the listed tram shed and the former railway embankment.

Plot 5

- 3.31 Building heights on Plot 2 will consider the former railway embankment.

Parameter Plan P05 - Potential Access / Egress

- 3.32 Parameter Plan P05 establishes a zone in locations from where it is anticipated access to the site may be taken. Future locations and their detailed design will be determined in accordance with highways design requirements.
- n Zone D represents a zone within which access by all modes into Plot 3 /4 could be taken. It should be noted that a single access point only will be created in this zone.
 - n Zone E represents a zone within which access by all modes into Plot 5 will be taken. It should be noted that a single access point only will be created in this zone.
 - n Zone G represents a zone within which access by all modes into Plot 3 /4 could be taken. It should be noted that a single access point only will be created in this zone.
 - n Zone H represents a zone within which access by all modes into Plots 2 and 3 /4 could be taken.
 - n Zone I represents a zone within which access by all modes into Plots 1 and 2 could be taken.
 - n Zones J and K represent a zone within which access by all modes into Plot 1 could be taken. It should be noted that a single access point in each location only would be created in this zone.
 - n Zone L represents a zone within which access by all modes into Plot 1 could be taken.
- 3.33 It may not be the case that an access point is constructed at each of these locations however an access point for all modes will be provided from Carbrook Street into Plot 1, from Weedon Street into Plot 2 and Plot 3/4 and from Meadowhall Way into Plot 5.
- 3.34 Access zones, as noted above, may accommodate multiple access points subject to highways design.

- 3.35 The ultimate access strategy will be determined by the form of development for which Reserved Matters applications are submitted.
- 3.36 Plan 05 also identifies routes through the site including:
- n Point A will be linked to Point B for pedestrians and cyclists via the five weirs walk.
 - n Point B will be linked to Point C for pedestrians and cyclists via the five weirs walk.
 - n Point B will be linked to Point F for pedestrians and cyclists.
 - n Zone G will be linked to Zone D for pedestrian and cyclists.
 - n Zone H will be linked to Zone I for pedestrians and cyclists.

4. Consideration of Alternatives

- 4.1 Paragraph 2 of Part I of Schedule 4 of the EIA Regulations 1999 requires applicants to provide an outline of the main alternatives studied in preparing the application, and an indication of the reasons for their choice taking into account the main environmental effects.
- 4.2 The application is for Outline Planning Permission and the layout is not detailed and not fixed at this stage, although it will be regulated by the Parameters Plan and Regulatory Text submitted with the application. The assessment of alternatives chapter needs to be considered with this in mind.
- 4.3 The starting point for the consideration of alternative options for the site was the Lower Don Valley masterplanning process. This considered the constraints to development of the River Don District and set the key objectives and land use principles for the area that is now the application site.

Mixed Use Development – the Preferred Option

- 4.4 Mixed-use development offers more prospects for regeneration in this location and the creation of a sustainable community, transforming perceptions of the Lower Don Valley.
- 4.5 The Lower Don Valley Masterplan was reported to the Cabinet of Sheffield City Council on 11 May 2005. The report endorses a mixed-use approach:

*“5.2 there is broad agreement on the need to move away from the mono-use approach in the UDP towards a more sustainable mixed-use development pattern which furthers the economic ambitions of the area. This implies a wider variety of employment uses, including office development, the re-population of parts of the Valley, particularly around Attercliffe and Darnel and, subject to more detailed work on market demand, environmental acceptability, phasing, mix etc. in the Central Zone near Meadowhall...
There is a need to change investor perception of the potential of the Lower Don Valley in order to attract investment and create value...”*

River Don District Masterplanning

- 4.6 The RDD masterplanning process has developed the concept of a mixed-use district, testing different broad design options. The results of this exercise are reflected in the application for Outline Planning Permission and the Parameters Plans.
- 4.7 In short, the Masterplan, and the application for Outline Planning Permission, provide Sheffield and its private sector partners the opportunity to:
- improve Sheffield’s competitive position by regenerating a large and prominent area of Sheffield which is currently under performing;
 - attract new investment to this neglected part of Sheffield, reversing its decline and creating a totally new setting for investment opportunities;

- complement and reinforce the regeneration efforts of the City Centre by addressing the issues of Sheffield's primary gateway entrance to improve the image of the City as a whole;
- provide a desirable location for new investment to Sheffield by targeted sectors which cannot be easily accommodated elsewhere in the city;
- create a genuinely sustainable mixed-use environment from what was once a mono-use industrial landscape;
- meet Sheffield's strategy for growth through the development of a sustainable new living and working environment; and,
- help deliver the objectives of Sheffield's City Strategy as seen above.

4.8 The Sheffield Economic Masterplan includes a strategy for building assets for the 21st century:

"Sheffield must be able to offer a significantly improved range and quantity of good quality office and industrial premises to become a truly competitive location for investment. A clear priority is to create a premier commercial location in the city centre of sufficient quality and vibrancy to attract major high value service companies. To achieve a more productive sector mix Sheffield also needs to supply a range of office, industrial and hybrid properties in optimal locations. These are identified in the Spatial Strategy appended to the Economic masterplan¹."

4.9 The Lower Don Valley is one of these locations, and the River Don District is the optimal location for an office campus within the Lower Don Valley.

Alternative Locations for the Office Campus

- 4.10 An assessment of alternative sites for the office campus has been undertaken. This has focussed on the City Centre which is the main acceptable alternative location for major offices in planning and commercial terms.
- 4.11 The office campus approach delivers a differentiated office development that is at a lower density than would be appropriate or could be provided in Sheffield City Centre. It requires the development of a group of inter-related buildings in a highly accessible location that are capable of providing large floor plates and buildings for occupation either by a single occupier or by a range of occupiers.
- 4.12 The RDD Office Campus will cover in excess of 9 hectares of land and can deliver up to 120,000 sq m of new floorspace for Sheffield. Opportunities of this scale and nature do not exist in Sheffield City Centre and therefore in order to secure the benefit of the inward investment and jobs the proposal will create, there is a pressing requirement for the development to be delivered outside the City Centre area.
- 4.13 To comprehensively disaggregate the office campus into blocks commensurate with a city centre location would only serve to replicate

¹ Sheffield Economic Masterplan, Executive Summary, p11.

provision which already exists and is planned within Sheffield City Centre. There is compelling evidence that Sheffield now and in the future requires a range of large floor plate offices as a complementary provision to the City Centre.

- 4.14 Notwithstanding this, a review of potential development sites which on their own, or aggregated together to form parcels of circa 3-4 hectares has been undertaken to examine the possibility of accommodating the proposals within or on the edge of the City Centre. The size of site has been chosen as this reflects a level of space on which a campus style of office development could be achieved, given the landscaping, parking and infrastructure requirements generally associated with this form of development.
- 4.15 Local centres are not deemed appropriate for the scale of accommodation proposed.
- 4.16 Assessment of the individual sites has been based upon their availability, suitability and viability for the proposed use. The approach to identifying possible development opportunities has been flexible and a number of factors have been incorporated into the search criteria:
- n Size of site and capacity to accommodate the type of development proposed, although PPS6 advises that this criteria should not be applied too rigidly as developers and occupiers are required to be flexible on their requirements;
 - n Current use of a site and its likely availability for development within a reasonable time period (a key test in PPS6);
 - n Current ownership - single or multiple - and the ease with which the site could be assembled;
 - n Current traffic and highways conditions, accessibility by foot, bus and cycle as well as by car and the effect on this caused by the proposal;
 - n Local Plan allocation of the site, the Local Plan strategy and emerging SDF sites; and fundamentally; and,
 - n The ability of the site to meet the identified 'need' for the proposed facilities.
- 4.17 The Office Policy Assessment contains the detailed assessment of alternative sites within Sheffield City Centre which could accommodate office development.
- 4.18 The sites that were assessed were identified from Sheffield City Council's SDF City Sites Preferred Options paper, published in June 2007, and have been referred to by the references given in the paper in this report.
- 4.19 The review of City Centre sites has not revealed any aggregation of sites which could deliver a site area capable of delivering an office campus development, even if the proposed campus, which is in excess of 9 hectares, is split into smaller plot sizes.

Housing

- 4.20 The proposed housing on Plots 1 & 2 would create a sustainable community of up to 1300 homes.

Alternative Sites for the Housing

- 4.21 Drivers Jonas has reviewed the housing sites that are allocated in the City Sites DPD (Draft). This represents the most up-to-date analysis of the potential development pipeline in the City. The figures have been cross-checked with the most recent Annual Monitoring Report (December 2007), The Sheffield 5 Year Housing Land Availability Assessment (March 2008) and also with the Sheffield City Council and provide the current position as of the 16 May 2008 (submission date).
- 4.22 The analysis has compared the potential supply of development land identified within Flood Zone 1 as defined by PPS25 in the SFRA. The analysis demonstrates that in terms of the broad overall requirements for office and housing sites the City's employment and housing objectives could not be met on identified sites within Flood Zone 1.
- 4.23 If the proposed development at the application site was not to be brought forward it would leave a major gap in the regeneration and employment strategy for the LDV which is an interest of acknowledged importance in regional and local economic strategies.
- 4.24 Not only would this undermine the approved strategy for regenerating the LDV, it would significantly weaken the employment strategy for the City by removing one of the key office locations required to maximise the choice of locations for major employers and balance provision within the City Centre. The opportunity for a distinctive new housing community which would widen the housing offer available for existing and future residents in the City would also be lost, in particular for those working in the knowledge based industries.
- 4.25 There will be a predicted shortfall of housing against forecast requirements during the plan period and that sites within Flood Probability Zones 2 and 3 will be required.
- 4.26 The fact that SCC has a reasonably strong 5 year housing supply does not weigh against the need for the RDD as part of a long-term strategy for the economic transformation of the LDV and the economic development of the City.

Alternative Locations for the Entire RDD Scheme

- 4.27 To ensure that appropriate potential alternative sites have been reviewed for the purposes of assessing alternative locations for the entire RDD scheme it is necessary to set out a number of filtering criteria.
- 4.28 These criteria are based on the area of site required, meeting the strategic need, sustainability requirements and environmental qualities which are inherent to the application site and the future delivery of transformational change in Sheffield, which is a key objective to meet economic growth and regeneration of the city. The following filtering criteria have been selected, these have been discussed and agreed with SCC:

Criteria 1: Area of Site Required

- 4.29 In relation to alternative sites the sequential assessment of any alternative sites is taken to mean a site that can accommodate the critical elements of the British Land proposals. These proposals have been arrived at following a lengthy Masterplan process with SCC. The principles of which have been endorsed by Cabinet. The proposals and development required demonstrate appropriate scale, massing and density for uses and quantum of open space on this site.
- 4.30 For the purposes of site search/selection the alternative site must therefore be capable of accommodating:

Table 4.1: Required Site Area

Critical Development Required	Quantity / Area (GEA)	Car Parking (Maximum)
Combined employment/business uses (predominantly offices); residential accommodation (including serviced apartments); Hotel, Retail, Leisure, Food and Drink, Community and Civic Facilities, Ancillary Commercial and non-commercial uses.	210,140 Sqm ²	
Supporting Infrastructure Required		
Car parking areas; Means of access; public and private open space; internal highway and pedestrian routes; landscaping and public realm		
Total Area Required for Critical Development	256,600 Sqm	2,818

- 4.31 Based on the above calculation of floorspace requirements the alternative site area that we consider to be appropriate for the purposes of the sequential assessment equates to 25.66ha. To ensure flexibility in the search for potential alternative reasonably available sites we have applied a site area tolerance of 20% either side of this figure. On this basis the search has sought to identify potential reasonably available sites with a minimum site area of 20.53 hectares or maximum of up to 30.79 hectares.

Criteria 2: Meeting the Strategic Need

- 4.32 The quantum of development being pursued at the application site will have major regeneration benefits for Sheffield. As stated in Chapter 3, Jones Lang LaSalle produced a supplementary paper (March 2007) which identified key objectives inherent to creating a sustainable community in the Lower Don Valley. For the purposes of this criteria it is considered that the following objectives should be met by an alternative site:
- transformational and regenerative change for the area into one of Sheffield's primary business and residential communities that will provide for a range of business activities, including growth industry sectors and investment in a range of development uses that support such an environment;
 - a high quality, well balanced community of residential, leisure and retail occupiers that will attract a significant cluster of office occupiers;

² The maximum floorspace figure is 210,140 sqm. There is flexibility in the composition of this figure as to the exact proportions of each use, however there will be no more than 120,000 sqm B1, no more than 97,950 sqm residential space; no more than 2,499 sqm retail A1; and no more than 13,540 sqm of hotel and other uses (which includes leisure, food and drink, community and civic facilities, ancillary commercial and non-commercial uses).

- a destination with a strong combination of public and private means of access and high levels of accessibility and access to labour markets;
- the creation of new real estate product delivering an enhanced portfolio and hierarchy of products which supports Sheffield's targets for economic transformational change; and,
- create a sustainable community which will attract and retain high growth business activities.

Criteria 3: Sustainability Requirements

- 4.33 For major developments a range of sustainability criteria must be considered, key amongst them is the need for a sustainable location in terms of transport and accessibility (is of significant importance). Such a requirement is emphasised in National Policy (PPG13) and at the local level in the Preferred Options for City Policies (policy PT2).
- 4.34 Policy PT2 seeks to deliver safe and sustainable access to potential development sites through easy accessibility to public transport hubs and the required highway infrastructure either in place or to be delivered. The British Land proposals will require minimal new road infrastructure to be constructed however proposed improvements are contained within the Core Strategy (Policy ST10) and include the Halfpenny Link Road/Fixed Link.
- 4.35 Sustainable transport and accessibility are also promoted through the Core Strategy (Policy P1) which establishes maximising accessibility as one of the strategic priorities for transport, along with supporting economic objectives through demand management measures and sustainable travel initiatives.

Criteria 4: Environmental Qualities

- 4.36 The sequential approach clearly would require any alternative site to score as well as or better than the proposed development site when measured against a number of key environmental qualities.
- 4.37 The site must be identified within an area of low probability of flooding, or if within an area of medium probability, have a substantial part of the site outside the medium probability extent of flooding (i.e. it should have less area within medium probability of flooding than that shown on the SFRA map for the Meadowhall sites).
- 4.38 It is also an important factor that any alternative sites have a comparable or better situation when considered in relation to factors of contamination; air quality; and noise. In all cases, it shall be necessary to consider whether major development in the other locations can be capable of being accommodated to an acceptable environmental standard.

Conclusion Considered Sites

- 4.39 Following a thorough review of potential alternative sites as put forward by land owners for inclusion within the emerging City Sites DPD, four sites were identified. The detailed results of the analysis are in the PPS 25 Assessment – Sequential Test and Exception Test Report. The four sites were:
- n Smithywood, Cowley Hill, Chapeltown;
 - n Former Tinsley Marshalling Sidings, Shepcote Lane, Europa Link;
 - n Junction 34 Trading Estate, Outokumpu Site, Shepcote Lane; and,
 - n Parkwood Springs.

- 4.40 In summary, the analysis of alternative sites reveals that there are no other reasonably available alternative sites capable of accommodating the entire RDD scheme, in a lower Flood Probability Zone or indeed within the same Flood Probability Zone but at a lower probability of flooding from all sources as detailed in the SFRA. Any sites in an area of higher risk can be rejected.

Alternative Designs for the RDD Scheme

- 4.41 The Parameters Plans are the basis for consideration of the EIA process which allows sufficient certainty as to the development proposals for any significant environmental effects to be assessed whilst providing a degree of flexibility.
- 4.42 The evolution of the Parameters Plans involved the consideration of many alternative options, including:
- n The embankment – options involving different levels of intervention and removal of the former railway embankment, taking into account the potential loss of ecological habitat, visual and landscape value and the need to achieve a viable office campus with car parking that meets any future occupiers' requirements.
 - n The extent and location of open space – balancing the need to provide adequate recreational open space with the need for ecological enhancement and safeguarding existing habitats, particularly along the riverside and the embankment.
 - n The location of housing – Plots 1 and 2 and part of 3 providing the best environment for housing focussed on the riverside park and taking advantage of the former railway embankment landscape zone.
 - n The location of offices – the optimum location being assessed as plots 3 and 4 close to the commercial uses at Meadowhall, with easy walking distance to the Meadowhall PTI and Carbrook tram station and the bus stops that will be located in Weedon Street.
 - n Neighbourhood centre – the optimum location being assessed as Plot 2, located equidistant from the housing and offices, on the cycle and footpath routes to Meadowhall and a prominent location where landmark buildings can create a sense of place around high quality public realm.
 - n Flood protection – locating the residential and office uses within the flood probability zones 1 and 2, with open space being located in zones 3a and 3b.
 - n Transport infrastructure – testing of different combinations of land use to establish the capacity of the highway network and to identify improvements to the network and a range of mitigation measures including the Travel Plan and Controlled Car Parking Zone. This work is contained in the Transport Assessment.
- 4.43 The detailed layout and design is not fixed at this stage. The assessment of alternative design scenarios needs to be considered in this light. The Illustrative Masterplan demonstrates just one way that the quantum of development and site area that the Parameters Plans addresses can be delivered. Alternative designs are therefore still feasible at the Reserved Matters stage as long as they are consistent with the Parameters Plans and design codes/Regulatory Text.

The Do Nothing Scenario

- 4.44 The do nothing scenario has been rejected because the application site is currently vacant, derelict land. The Lower Don Valley and other City Council planning and economic strategies has identified the regeneration of the application site for offices, housing and related uses, and open space as one of the highest priorities in the city.
- 4.45 The Masterplan for the River Don District offers opportunities to achieve real and sustainable change in the Lower Don Valley, its adjacent communities and the City of Sheffield as a whole.
- 4.46 Price Waterhouse Cooper (PWC) estimate that investment in the RDD sites owned by British Land, and which are the subject the application for outline planning permission, will bring Sheffield more than £300m in new investment.
- 4.47 The proposals will create almost 5,000 local jobs. An additional 2,100 indirect/induced jobs in the local economy are also estimated by PWC.
- 4.48 The office campus and other employment generating uses will bring significant employment benefits to the Sheffield and regional economy. For example, the new jobs created in the RDD will contribute an additional Gross Value Added (GVA) of £185m per annum in the Sheffield and Rotherham area.

Table 4.2: Economic Impacts

		British Land Controlled Sites
Investment		£308m
GVA	Sheffield & Rotherham	£185m/per annum
	Yorks & Humber Region	£200m/per annum
Jobs	New Jobs in Sheffield	5,724 jobs
	FTE Jobs in Construction	618 jobs

Source: PWC

- 4.49 Such a large scale investment will kick start the regeneration of the entire Lower Don Valley and bring significant targeted regeneration benefits to an area of the Lower Don Valley that has not witnessed any major investment since Meadowhall Shopping Centre opened more than 15 years ago.
- 4.50 PWC have estimated that the opportunity cost forgone of not implementing the masterplan – the Do Nothing Scenario - would be in the order of £316m per annum, based upon assumptions about what might be developed in the River Don District area in the absence of the masterplan proposals (typically lower density office and industrial uses).

Conclusion

- 4.51 This alternatives section has considered all alternative sites, alternatives designs, and alternative locations.
- 4.52 It is concluded that the RDD scheme in its proposed form represents the most appropriate way to deliver the necessary development, balanced against Planning Policy, sustainability benefits and environmental effects.

5. Traffic and Transport

Introduction

- 5.1 The Traffic and Transport analysis contained within the ES provides a review of the potential impacts that may be generated by the proposed development, both during construction and in the longer term when the development is operational. Information relating to the assessment methods and detailed findings are contained in the Transport Assessment Report, (TAR), the Transport Strategy and the Travel Plan as prepared by Peter Brett Associates LLP (PBA).

Assessment Methodology

- 5.2 The impacts assessed include the potential impact on both the local and the strategic road network and on public transport capacity, as well as on people's travel patterns and habits.
- 5.3 A worst case scenario for trip generation based on the development parameters was agreed with Sheffield City Council in consultation and formed the basis for the assessment.
- 5.4 The assessment years within the Transport Assessment relate to the base year of 2007 and the test year of 2018 with and without development and comparison between these scenarios have been used to consider the level of percentage impact resulting from the development.
- 5.5 An extensive dialogue has taken place with SCC, the Highways Agency and SYPTE while undertaking the Transport Assessment of the development. Agreement was obtained with these Authorities on all the key issues and a partnership approach fostered, which enabled the sharing of data from traffic modelling work and the formulation of sustainable travel initiatives.
- 5.6 The conclusion of the Public Transport Assessment is that across all modes, there is sufficient AM and PM peak hour capacity on the three public transport modes to provide attractive travel options to key destinations for residents and employees in the RDD area.

Residual Impacts and Mitigation Measures

- 5.7 It is intended to implement a comprehensive site wide Travel Plan that will encompass all elements of the development and in turn informs individual Travel Plans for the respective office and residential developments. The Travel Plan comprehensively covers a range of sustainable initiatives including the capping of parking levels, improvement to public transport (such as the Bus Rapid Transit and interchanges), lorry management and routeing, travel plan information packs, car sharing, taxi information and changes to working practices.
- 5.8 With regard to the highway network, this assessment, employing the results of modelling work undertaken by SCC and the Highways Agency, has shown some slight impacts on links that currently have low traffic flows or links that will accommodate direct access routes to and from the proposed development.
- 5.9 The changes to the highway network and reassignment of traffic in 2018 as a result of the proposed development, also means that although some increases are apparent, there are also significant reductions on some highway links and that there are also environmental benefits in some areas. The largest reductions in traffic flow result on Weedon Street and can be attributed to the realigned Meadowhall Way.
- 5.10 Agreed construction routing agreements will be implemented to ensure the proposed access route to the site and to and from the M1, and the land uses in the area mean that only industrial and commercial premises will be passed.

- 5.11 Construction traffic is deemed not to have a significant impact due to the temporary nature of this additional traffic and nature of land uses fronting the route.
- 5.12 Therefore, in conclusion, residual impact is not significant particularly when taking into account the measures that are being implemented to reduce the amount of single occupancy car use generated by the development.
- 5.13 Details of both the Residual Impacts and proposed Mitigation Measures are contained in later chapters of this Summary.

6. Air Quality

Introduction

- 6.1 The Air Quality analysis contained within the ES provides a review of the potential impacts that may be generated by the proposed development and the potential impacts of existing and future conditions on future users of the site. The Air Quality assessment included in the ES has been undertaken by Peter Brett Associates (PBA).

Assessment Methodology

- 6.2 It considers the potential impacts of the development on air quality during the construction and operation phases of the development.
- 6.3 It also considers the suitability of the site for residential development and the potential impact of existing and proposed air quality and odour levels on such development.
- 6.4 It is considered that dust and elevated particulate levels will be the primary construction impact. This impact will be mitigated by naturally occurring environmental conditions much of the time. Construction management regimes can provide mitigation for the remainder when moisture and wind conditions lead to potential annoyance off site.
- 6.5 Detailed Air Quality sampling and modelling indicates acceptable NO₂ concentrations, below the annual objective, for the majority of the development building footprint area of Plots 1-5 in 2007.
- 6.6 Preliminary modelling for 2010 shows acceptable air quality for the phased residential development of plots 1, 2 and 3/4, within continuing improvements in air quality through the period of development to 2018.
- 6.7 The results of the preliminary modelling for 2010, when first occupation of dwellings on the site might occur, shows that air quality across much of Plots proposed for residential development will be suitable for such development.
- 6.8 The results of the preliminary modelling for 2011 when phased occupation residential development may continue show further increases in the area suitable for residential development.

Residual Impacts and Mitigation Measures

- 6.9 In 2018, it is predicted that a small area of Plot 1, where the flood alleviation channel is currently proposed, may exceed target concentrations in the without mitigation scenario. The detailed design of the scheme can mitigate any impact.
- 6.10 Mitigation Measures will include those incorporated into the Transport Strategy and Travel Plan submitted in support of the application and could include low emission incentives for residents, commercial occupiers and other users of the site.
- 6.11 Details of both the Residual Impacts and potential Mitigation Measures are contained in later chapters of this Summary.

7. Drainage

Introduction

- 7.1 The site drainage analysis contained within the ES provides a review of the potential impacts that may be generated by the proposal upon the local sewer network and adjacent watercourses. It has been prepared by Adams Kara Taylor (AKT). The impact of the development has been assessed against the current discharge rates to these sewers and watercourses. Suitable mitigation measures have been proposed where applicable.
- 7.2 Flood risk is dealt with separately.

Assessment Methodology

- 7.3 Using desktop study techniques and appraising existing survey data, an assessment has been made of the existing site to determine the rate and location of the existing discharge points for the foul and surface water drainage from the application site. Further, intrusive, investigations will be undertaken at the Reserved Matters stage when detailed siting and design are confirmed.
- 7.4 Initial consultation with Philip Hoffman and Peter Golightly of Yorkshire Water (YW), Pete Berry of Sheffield City Council (SCC) and Dr. Sean Burke of the Environment Agency (EA) has been undertaken.
- 7.5 At present, the foul water from the existing developments on Plot 3/4 discharge to the public sewer and YW have confirmed that there is sufficient capacity to accommodate the proposed, increased foul water discharge, generated by Plots 1, 2 and 5, within the existing infrastructure.
- 7.6 At present, no existing surface water discharges to the public sewer. YW have confirmed that there is insufficient capacity within their infrastructure to permit any surface water discharge to be directed to the public sewers. All surface water discharge will therefore currently be directed to the adjacent watercourses.
- 7.7 There are currently no SUDS devices on any of the plots, nor are there any attenuation measures to control the discharge from the site.
- 7.8 SCC have been consulted with regard to the discharge of surface water to the adjacent watercourses and the use of SUDS on the site.

Residual Impacts and Mitigation Measures

- 7.9 The proposed surface water discharge from Plots 1 and 2 plots will be limited to the equivalent greenfield run-off rate which has been agreed as 5 litres/sec/ha giving permissible peak discharge flows of 34 litres and 13 litres/sec respectively. It is proposed that agreed rates will be conditioned as part of the Outline Planning Application. Greenfield rates have been utilised due to the uncertain nature of made ground and therefore the existing characteristics on these Plots.
- 7.10 Plot 3/4 is previously-developed and the existing surface water discharge from the roof areas has been estimated as 294 litres/sec. In line with SCC's policy guidelines, there will be a substantial reduction in this peak flow. In consultation with SCC, a reduction of 50% has been agreed giving a permissible surface water discharge from Plot 3/4 of 147 litres/sec (or pro rata if the two plots are separated). Again, it is proposed that discharge rates will be conditioned as part of the Outline Planning Application.

- 7.11 Plot 5 does not currently accommodate any built structures; the discharge from the development will be limited to the equivalent greenfield run-off rate which has been agreed as 5 litres/sec/ha giving a permissible peak discharge of approximately 22 litres/sec. Again, it is proposed that rates will be conditioned as part of the Outline Planning Application.
- 7.12 In order to comply with the requirements of PPS25, CIRIA C697 and to achieve the above reductions in surface water discharge rates, a series of SUDS / attenuation measures will be implemented. Depending on the device or combination of devices selected, this may impact upon the landscaping of the plots. The details of these systems will be agreed at the Reserved Matters stage.
- 7.13 Details of both the Residual Impacts and proposed Mitigation Measures are contained in later chapters of this Summary.

8. Flooding

Introduction

- 8.1 The Flooding analysis contained within the ES provides a review of the potential impacts that may be generated by the proposed development and the potential impact on the site of flood risk. Flood Risk Assessment work has been prepared by Peter Brett Associates (PBA). A full Flood Risk Assessment (FRA) has been prepared in accordance with PPS25 – Development and Flood Risk and is appended to the ES. This is also supported by a PPS25 – Sequential Test and Exceptions Test Report by Drivers Jonas.

Assessment Methodology

- 8.2 The main impacts have been assessed to be as follows:
- n The potential flood risk to the proposed development within the application site;
 - n The potential increase in fluvial flood risk to others outside the application site arising from the development;
 - n The potential increase in flood risk to others outside the application site arising from the surface water drainage system constructed as part of the development;
 - n The impact of climate change;
 - n Issues of access and egress; and
 - n Residual risks.
- 8.3 The Assessment has been undertaken utilising site survey and modelling data.

Residual Impacts and Mitigation Measures

- 8.4 The Flood Risk Assessment indicates that a small part of the application site lies within an area at risk of flooding at events greater than 1 in 100 annually (1%).
- 8.5 Whilst 1:100 years is the agreed assessment standard, a flood defence and flood alleviation scheme is proposed to protect the application site and the adjacent areas from flooding to a standard of 1 in 200 years (0.5%) with an allowance for climate change.
- 8.6 The impact of climate change has been taken into account within the scheme design.
- 8.7 The overall effect of the development is beneficial as it reduces flood risk to both the development and the local area with minor negative impacts at extreme flood events to a small number of downstream properties.
- 8.8 The use of raised floor levels for new development within each plot will reduce the residual impact of a flood event exceeding the design standard of the flood defences or arising from a failure of the defences.
- 8.9 The overall residual impact, after mitigation, is Beneficial.
- 8.10 Details of the Residual Impacts and proposed Mitigation Measures are contained in later chapters of this Summary.

9. Noise and Vibration

Introduction

- 9.1 The Noise and Vibration analysis contained within the ES considers the possible impact of both the construction and operational phase of the proposed development on existing sensitive receptors and also considers the potential effects of surrounding land uses on the new receptors that will be introduced to the site. The analysis has been prepared by Peter Brett Associates (PBA).

Assessment Methodology

- 9.2 The Assessment utilises original survey data as well as modelling based on the predicted traffic flows produced for the Transport and Traffic Analysis.
- 9.3 It draws on the illustrative masterplan as well as the Parameters Plans for which consent is sought.

Residual Impacts and Mitigation Measures

- 9.4 The Assessment concludes that without mitigation the development could have an impact on surrounding properties and that existing industrial uses and existing and proposed road traffic noise levels could impact on new noise sensitive receptors that are proposed to be introduced to the site.
- 9.5 A series of design, management and technical mitigation measures are proposed to ensure acceptable noise conditions and minimise these impacts. These will lead to acceptable commercial and residential environments and will include:
- n consideration of building use and location;
 - n building orientation;
 - n location of less sensitive uses in exposed locations;
 - n screening;
 - n use of recessed balconies; and,
 - n closed windows (where traffic noise dominates).
- 9.6 Details of the Residual Impacts and proposed Mitigation Measures are contained in later chapters of this Summary.

10. Ground Conditions

Introduction

- 10.1 The Ground Conditions and Contamination analysis contained within the ES provides a review of the potential impacts that may be generated by the proposed development on Ground Conditions and the potential impact of existing ground conditions on the construction and operational phases of the proposed development. The analysis has been prepared by Peter Brett Associates (PBA) and draws on a wide range of historic desk-top and intrusive survey reports.

Assessment Methodology

- 10.2 Potential impacts are based on the identification of aspects of the development throughout its life cycle (construction and operation) that might give rise to environmental effects. When defining potential impacts consideration is given to identifying the source of the impact, the likely receptor and the pathway from source to receptor.
- 10.3 For ground conditions the underlying principle is the evaluation of *pollutant linkages* in order to assess whether the presence of a source of contamination could potentially lead to harmful consequences. Consideration is given to the features of the development that might change the potential for a significant source of contamination, the pathway, and receptors to be present. These are discussed relative to (i) demolition and construction, and (ii) the occupation and use of the development once completed.
- 10.4 For the purposes of this analysis a significant effect is one that cannot be managed, remediated or mitigated to a residual negligible effect.
- 10.5 Existing ground conditions have been reviewed. Elements of the Site are contaminated and Mitigation will be required to ensure the development can proceed as planned.

Residual Impacts and Mitigation Measures

- 10.6 The combination of consequence and the value of the potential receptors has been used to classify potential effects for each pollutant linkage identified. The effect has been assigned a classification of Negligible to Substantial.
- 10.7 The preliminary assessment of effects has assumed that no mitigation is implemented and represents the worst case scenario. However, mitigation measures will be employed and residual impacts should be Negligible if the mitigation measures are employed. It is therefore considered that there are no significant effects in terms of ground conditions (a significant effect is defined as one which can not be managed, remediated or mitigated to have a residual effect classification of Negligible). With proper mitigation all of the land uses shown on the Parameters Plans for each plot will be acceptable.
- 10.8 Details of both the Residual Impacts and proposed Mitigation Measures are contained within later chapters of this Summary.

11. Ecology

Introduction

- 11.1 The Ecological Impact Assessment contained within the ES examines the likely significant ecological effects of the planning application and has been undertaken by Baker Shepherd Gillespie (BSG).

Assessment Methodology

- 11.2 The Ecological Impact Assessment has been carried out according to recent guidance produced by the Institute of Ecology and Environmental Management (2006) which is recognised as current best practice.
- 11.3 A range of ecological surveys including Phase 1 habitat survey, targeted Phase 2 vegetation survey, protected species surveys, breeding bird and bat activity surveys have been undertaken. The aim of these surveys was to identify the ecological resource on the site to inform the impact assessment. Mitigation and compensation measures have been identified, to reduce the significance of these impacts either through amendments to the site design or for the construction and operational phases.
- 11.4 This assessment follows the ecological impact assessment process from baseline data gathering to the identification of impacts and the assessment of their significance.
- 11.5 The ecological value of the site is a key consideration within the proposal.

Residual Impacts and Mitigation Measures

- 11.6 Impacts to habitats; nesting birds; bats; otters; invertebrates; the former railway embankment and the prevalence of invasive species are unavoidable at both the construction and operational phases of the proposed development however the ES assessment shows that with the proposed Mitigation Measures there will be significant beneficial outcomes across the site as a result of the RDD proposals.
- 11.7 Details of both the Residual Impacts and proposed Mitigation Measures are contained in later chapters of this Summary.

12. Landscape and Visual

Introduction

- 12.1 The Landscape and Visual Impact analysis contained within the ES provides a review of the potential impacts of the proposed development. The Assessment was prepared by Hyland Edgar Driver (HED).

Assessment Methodology

- 12.2 The impacts assessed include impacts on landscape character and physical features including vegetation and the listed tramshed buildings as well as lighting impacts and changes to existing views and to visual amenity.
- 12.3 The impact assessment has been undertaken in accordance with the established Guidelines for Landscape and Visual Impact Assessment.
- 12.4 A series of nine strategic views were agreed with SCC and five agreed photomontages have been prepared.

Residual Impacts and Mitigation Measures

- 12.5 The visual appraisal concludes that local views are most sensitive to change due to the landscape framework within the area around the application site and the scale of surrounding buildings meaning that longer vistas to the site along the valley are obscured. It is concluded that the proposals would have a neutral impact on views from surrounding elevated residential properties and a beneficial impact on views at a local level.
- 12.6 The substantial new areas of open space and new planting and habitat creation are considered to mitigate landscape character impacts on these areas. The inclusion of play facilities within these areas is also considered as a positive impact.
- 12.7 Details of both the Residual Impacts and proposed Mitigation Measures are contained in later chapters of this Summary.

13. Socio-Economic Impact Assessment

Introduction

- 13.1 The Socio-Economic Impact analysis contained within the ES provides a review of the potential impacts that on the proposed development in relation to the local (Sheffield and Rotherham) and regional (Yorkshire and Humber) Economies and also on the local community in both qualitative and quantitative terms. The analysis has been undertaken by PriceWaterhouse Coopers and Hunt Dobson Stringer.

Assessment Methodology

- 13.2 The analysis has followed industry standard methodologies to convert the proposed floorspace into a gross number of jobs that will be generated on site. This gross job creation figure is then modified to take account of jobs that would have been created without the proposed development, perhaps elsewhere, and jobs that will be replaced by those on site. This net figure is then augmented to take account of indirect and induced job creation as a result of the proposal.
- 13.3 In summary, it is considered that the proposals will deliver £185m Gross Value Added to the economy of Sheffield and Rotherham and deliver 5,724 net operational phase jobs and 618 net construction phase jobs.
- 13.4 The residential community is assessed at its maximum to be 1,785 people.

Residual Impacts and Mitigation Measures

- 13.5 Significant Employment and Training initiatives are proposed to ensure that local residents benefits from the new jobs and opportunities afforded by the RDD proposals.
- 13.6 It is considered that were the development to happen in 2008, there is capacity within local healthcare facilities for this quantum of increase in the local population.
- 13.7 Utilising the proposed residential mix and the Census "Moving Groups" data for Sheffield the likely number of school children that the proposals will yield at nursery, primary and secondary levels.
- 13.8 Similarly, it is considered that were the development to be constructed in 2008, there is capacity within both local nursery and primary school facilities for the anticipated child yield. It is however considered that some mitigation in relation to possible impacts on secondary school facilities may be required.
- 13.9 Details of both the Residual Impacts and proposed Mitigation Measures are contained in later chapters of this Summary.

14. Phasing and Construction

Introduction

- 14.1 The Construction Phase Impacts of the proposed development are reviewed in the ES. The review has been prepared by Laing O'Rourke and Day Management Partnership Limited.

Assessment Methodology

- 14.2 It is anticipated that the full development will take up to 15 years to be completed.
- 14.3 It should be noted that by their very nature construction impacts are short term only and following occupation, even on a phased basis dissipate over time.

Residual Impacts and Mitigation Measures

- 14.4 Potential impacts during the construction phase could relate to:
- n Health and Safety;
 - n Site Layout;
 - n Traffic Management;
 - n Car Parking;
 - n Site Safety Rules and Management procedures;
 - n Construction Materials;
 - n Waster Management; and
 - n Environmental Management.
- 14.5 Consideration of these matters early during the process of appointing contractors for the site development will ensure that appropriate Construction and Environmental Management Plans will be adopted.
- 14.6 Construction phase impacts are considered where relevant in individual ES chapters in relation to noise and vibration and air quality for example.
- 14.7 Details of both the Residual Impacts and proposed Mitigation Measures are contained in later chapters of this summary.

15. Historic Environment

Introduction

- 15.1 The Historic Environment Analysis contained in the ES provides an assessment of the likely significant effects on the historic built environment which could result from the development. The assessment is undertaken through establishing the existing baseline conditions and then assessing the magnitude of impacts resulting from the development both before and after the implementation of Mitigation Measures. The assessment and authorship of this chapter were undertaken by ARCUS (Archaeological Research and Consultancy at the University of Sheffield).

Assessment Methodology

- 15.2 The principal impacts of the construction phase of the development will consist of the demolition of historic buildings and structures. The post-completion or operational impacts will include the visual impact of the proposed development on the surviving historic structures and their setting, including structures beyond the site boundary, such as the listed tram depot at the southeast corner of Plots 3-4.
- 15.3 All of the standing structures and historical buildings within the proposed development area and on immediately adjacent plots of land date to the 19th and 20th Centuries. Features such as the two bridges across the River Don and the large curvilinear former railway embankment all relate to the immediate infrastructure and form distinct aspects of the historic grain of the site. The decommissioning of the railway and previous alterations to the embankment have negated it to little more than a physical barrier between the site and Meadowhall Way to the north.
- 15.4 The Assessment has considered the physical and visual impact of the construction and operational phases of the development on the historic environment.

Residual Impacts and Mitigation Measures

- 15.5 The tram depot although outside the site, has been a significant building in the local area since its construction in 1874. Its historical and architectural significance is recognised through its listing; its role as a transport hub, throughout the late 19th and early 20th Centuries, would have made it a notable local feature. Although outside the development site, care will be undertaken to respect the setting and form of the building.
- 15.6 Demolition of structures on the site will have a range of impacts dependent on the individual buildings.
- 15.7 Construction on the site will inevitably impact on the historic buildings and structures around the site.
- 15.8 The operational phase of the development is unlikely to have any further significant direct impacts on the historic built environment within the application area. Indirect operational impacts will be related to the visual impact on the historic buildings outside, but adjacent to, the development area. The extent of the impact will depend on the final design of the proposed structures, but the setting of the former tram depot will be considered.

- 15.9 In consultation with SCC a Design Code for the buildings adjacent to the tram depot has been proposed to minimise the impact of the new development on the setting of the tram depot. This is provided with the application in the Design and Access Statement.
- 15.10 The development will enhance the overall appearance of the tram depot which currently exists in isolation. The introduction of new structures in the vicinity of the tram depot, and to the rear will emphasise its historic character, and create a focal point when looking along Weedon Street from Sheffield Road.
- 15.11 Details of both the Residual Impacts and proposed Mitigation Measures are contained in later chapters of this Summary.

16. Archaeology

Introduction

- 16.1 The Archaeology chapter in the ES assesses the effects of development on known and anticipated archaeological remains, these being found at ground level, in made-ground and potentially in the underlying shallow natural alluvial soils.

Assessment Methodology

- 16.2 This assessment should be read in conjunction with the Historic Environment Assessment. The content and conclusion of this assessment is supported by its Technical Appendices, providing an archaeological desk based assessment. The approach to the assessment was agreed with SCC and SYAS.
- 16.3 The assessment has identified that significant archaeological remains may be anticipated in the natural soils of Prehistoric to Post-Medieval age. Plot 1 is known to contain late-Medieval and Post-Medieval remains of Brightside Mill/Forge and these are regarded as being of high regional value. All five plots will contain Industrial aged remains and these will generally be of regional and local value. Running through the site is the embankment and related sidings of the Sheffield District Railway. The site is known to contain remains of: Tinsley Brick and Tile Works; Brightside Steel Works; Tinsley Steel Works/Staybrite Stainless Steel Works; Vulcan Rivet and Brass Works; and, Imperial Steel Works. There are smaller areas of 19th and 20th Century residential occupation. It is expected that there will be substantial areas of the site where no significant archaeological remains are present. Modern made-ground is found variously forming elements of the present surface on all five plots and is regarded as having no archaeological value, but protects the archaeological remains from damage and decay.

Residual Impacts and Mitigation Measures

- 16.4 The development of the five Plots, as defined in the submitted Parameter Plans will impact on the archaeological remains and the worst case assumes that, without mitigation, there would be major to minor adverse effects, a result of the new engineering ground works.
- 16.5 With the implementation of a programme of detailed research, archaeological evaluation and mitigation it is concluded that there will be no residual adverse effects during construction and operation of the scheme.
- 16.6 Mitigation comprising in-situ preservation of high value archaeological remains, especially on Plot 1, will be achieved by the layout configuration of the scheme. On all five plots there would be a programme variously including excavation, strip and map and watching briefs. These activities will be located following evaluation, at locations where new ground works would penetrate into archaeological remains and as a result of clearly defined archaeological investigation objectives. In Plots 2, 3 /4 and 5 the opportunity will be taken to preserve archaeological resources where there are no works penetrating below the present ground level. This has been agreed as an acceptable approach with SCC and SYAS.
- 16.7 The Archaeological Desk-Based Assessment, the Environmental Impact Assessment and the mitigation options have, and will further, fully conform to national and local archaeological policies.

- 16.8 The implementation of the scheme will provide an important opportunity to further an understanding and appreciation of Sheffield's heritage.
- 16.9 Details of both the Residual Impacts and proposed Mitigation Measures are contained in later chapters of this Summary.

17. Non-Significant Impacts

- 17.1 As set out in Chapter 3, a number of topics/issues have been scoped out of the EIA as they are either deemed to be non-significant effects or are not EIA issues.
- 17.2 The purpose of the EIA is to ensure that significant effects on the environment likely to be caused by the development proposal, are taken into account within the decision making process, which in many cases will have to be confirmed by further research.
- 17.3 Given that the development is unlikely to give rise to certain significant environmental effects, these effects will not be addressed in the EIA process. These non-significant impacts were agreed with the SCC during the Scoping exercise.
- 17.4 These non-significant topics include:
- n Health and Safety;
 - n Human Health;
 - n Wind Environment and Micro-Climate; and
 - n TV Reception.

Health and Safety

- 17.5 It is not considered in this case that the proposed development will have environmental effects to warrant the need for an assessment of health and safety impact within the EIA.
- 17.6 Details of the Health and Safety Executive (HSE) Consultation Zone and the effects on the proposed development on health and safety are addressed separately within the application submission. At this stage only part of the application site falls within an area designated as a HSE consultation zone.
- 17.7 We understand discussions are ongoing between the adjoining industrial premises and SCC regarding the future implications of hazardous substance licenses on proposed development within the immediate area.

Human Health

- 17.8 There is nothing to indicate that the proposed development is likely to require a separate assessment of human health impact within the EIA. It is not considered that the development will have a significant impact on human health.
- 17.9 The human health issues already covered within the EIA, mainly air quality, noise and vibration, contamination and ground condition, flooding and socio-economic, will provide an analysis of any direct effects the proposed development may have on the environment and subsequently human health in this regard.

Wind Environment and Micro-climate

- 17.10 It is not considered that the development will have significant micro-climate impacts (including wind and solar) sufficient to warrant the need for an assessment of impact within the EIA process.

- 17.11 The proposals will not include buildings of a substantial height or mass that will significantly affect changes in wind patterns, sunlight and daylight availability and temperature caused by developments. The scale of the proposed development will be restricted to that analysed in the Parameters Plans.

TV Reception

- 17.12 It is not considered that the development will have significant TV reception impacts sufficient to warrant the need for an assessment of impact within the EIA process. The proposals will not include buildings of a height or mass that will affect the transmission of radio waves. There will be no other effects e.g. direct obstruction of line of sight between receivers and transmitting satellites to warrant an assessment. The scale of the proposed development will be restricted to that analysed in the Parameters Plans.

18. Summary of Residual Impacts

- 18.1 This chapter summarises the Residual Impacts arising from the proposed development at the River Don District.
- 18.2 Residual Impacts are defined as those impacts, which may be either beneficial or adverse, that will remain as a result of the proposed development even after the implementation of Mitigation Measures identified in Chapter 20.
- 18.3 The comprehensive process of analysis, design, dialogue, refinement and consultation has ensured that a significant proportion of any identified adverse impacts have been addressed.
- 18.4 An element of disruption and nuisance is inevitable during the lifecycle of the redevelopment of such an extensive site. However, appropriate measures have been identified to mitigate against these effects, as described within the ES.
- 18.5 Table 18.1 summarises and provides an overview of the predicted Residual Impacts associated with the development. It draws upon the conclusions of **Chapters 5 to 16** on a topic-by-topic basis.
- 18.6 Overall the Residual Impacts of the development are at the most negligible and many of the Mitigation Measures which are to be put in place result in a beneficial/positive impact.

Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
Air Quality						
Construction	Dust emissions	Complaints from existing receptors	Temporary	Negligible	Dust control measures Code of Construction Practice (CoCP) to ensure that the impacts do not spread beyond the local area.	Negligible
		Complaints from future residents and users of RDD	Temporary			Negligible
	Increased PM ₁₀ concentrations	Exceedence of the objective at existing receptors where there might be relevant exposure	Temporary	Negligible	N/A	Negligible
		Exceedence of the objective at new receptors where there might be relevant exposure	Temporary	Substantial adverse impact	Dust control measures CoCP	Minor adverse
Operation	Odour	Complaints from future residents and users of RDDM	Permanent	Moderate adverse	Putting non-residential buildings on the eastern edge of Plot 1/or installing de-odorising equipment on the air inlet to the building.	Minor adverse
	Increased NO ₂ and PM ₁₀ concentrations	Exceedences of the objective at existing receptors/ significant increase in concentrations	Permanent	Negligible	N/A	Negligible
	Increased CO ₂ emissions	Change in the rate of climate change	Permanent	Negligible	N/A	Negligible

Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
Drainage						
Type and size of Sustainable Urban Drainage Strategy (SUDS) devices used	Visual impact on landscaping within plots	Direct/Beneficial	Long-Term	Moderate	N/A	Possible amenity benefits Possible wildlife habitat

Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
Flooding						
Development of Derelict Land (Plots 1 – 5)	Flood Risk to Development	Adverse	Long	Minor	Flood Alleviation Scheme Raised floor levels.	Negligible
	Flood Risk to Other within Defended Area	Adverse	Long	Minor	Flood Alleviation Scheme.	Negligible
	Flood Risk to Others outside Defended Area	Adverse	Long	Minor	Flood Alleviation Scheme.	Negligible

Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
Noise and Vibration						
Demolition and Construction	Demolition and construction noise	Impact on existing noise-sensitive receptors	Short Term	Not Significant	Use of best practicable means and methods outlined in BS 5228.	None
	Demolition and construction vibration	Impact on existing vibration-sensitive receptors	Short Term	Not Significant	Use of best practicable means and methods outlined in BS 5228.	None
Traffic Flows	Noise from changes in traffic flows	Impact on existing noise-sensitive receptors	Long Term	Not significant	N/A	None
	Noise affecting proposed dwellings	Impact on occupants of proposed dwellings of noise from transportation sources	Long Term	Not Significant	Facade and ventilation attenuation to meet suitable internal noise levels for habitable rooms in line with BS 8233 recommendations.	None
Industrial Noise Sources	Noise affecting proposed dwellings	Impact on occupants of proposed dwellings of noise from industrial sources	Long Term	Not Significant	Additional mitigation of noise levels at bedroom windows using recessed balconies and screens to provide local "noise barriers".	None
	Noise affecting proposed non-residential buildings	Impact on occupants of proposed commercial buildings of noise from transportation and industrial sources	Long Term	Not Significant	Facade and ventilation attenuation to meet suitable internal noise levels for working in line with BREEAM recommendations.	None
	Operational noise from building services plant	Impact on existing and proposed noise-sensitive receptors	Long Term	Not Significant	Plant selection and noise control measures to meet proposed buildings services plant noise emission limits.	None
	Operations noise from	Impact on existing and proposed noise-sensitive	Long Term	Not Significant	Suitable facade measures to avoid noise break-out, suitable landlords	None

Building Services Plant	Commercial Buildings	receptors			requirements, licensing controls.	
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Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
Ground Conditions and Contamination						
Construction Phase						
Ground works / excavations / stockpiling/movement of soil - generation of contaminated dust or particulates – all land - generation of airborne asbestos fibres – Plot 1 only - ground gases – all land	Human Health – construction workers via inhalation of dust/particulates, inhalation of gases/vapours, dermal contact or ingestion	Adverse	Long	Adverse – substantial	Site controls – employment of appropriate Personal or Respiratory Protective Equipment (PPE and RPE) as identified through task specific risk assessments.	Negligible
	Human Health – third party access or neighbours via inhalation of dust/particulates, inhalation of gases/vapours or ingestion (indirect)	Adverse	Long	Adverse – moderate/substantial	Remediation of “hot spots” / management of unforeseen ground conditions. Site controls – employment of dust management protocols (consideration of excavation, stockpiling and suppression) and monitoring.	Negligible
	Ecological Systems – dust deposition	Adverse	Long	Adverse – minor		Negligible
	Human Health – construction workers via dermal contact or ingestion	Adverse	Medium	Adverse – moderate	Site controls – employment of water management protocols (consideration of excavation, stockpiling and suppression) and monitoring.	Negligible
Ground works / excavations / stockpiling - dewatering / damping down and generation of contaminated run off – all development land	Surface Waters - possible direct (surface runoff) or indirect (recharge) to	Adverse	Medium	Adverse – moderate		Negligible

Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
	River Don					
	Ecological Systems – any associated with surface water	Adverse	Medium	Adverse – minor		Negligible
Spillage / mobilisation of contamination onto / into ground	Human Health – construction workers via inhalation of gases/vapours, dermal contact or ingestion	Adverse	Medium	Adverse - moderate	Site controls: Appropriate bunding for temporary fuel or chemical storage; Use of less toxic alternatives, where appropriate, to be encouraged;	Negligible
	Surface Waters - possible direct (surface runoff) or indirect (recharge) to River Don	Adverse	Medium	Adverse - moderate	Provision of emergency spill kits and other clean-up equipment, including training in the use of such kits;	Negligible
	Ecological Systems – loss of local habitat surface water	Adverse	Medium	Adverse - minor	Provision of contingency and / or emergency plans, as appropriate, including method statements dealing with unforeseen contamination, geological hazards or hazardous materials.	Negligible
	Ground Chemistry	Negligible	Short	Negligible		Negligible
Remedial Works (removal of UST, hot spots, Goit) and Ground Improvement works	Human Health – construction workers inhalation of gases/vapours, dermal contact or ingestion	Adverse	Medium	Adverse – moderate	Site controls for protection of human health. Method statement to control discharges during removal.	Negligible
	Surface Waters – indirect (recharge) and direct (goit) improved water quality of River Don	Beneficial	Medium	Beneficial – moderate		Beneficial Moderate

Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
	Ecological Systems - improved water quality of River Don	Beneficial	Medium	Beneficial – minor		Beneficial Minor
	Ground Chemistry – improved soil quality	Beneficial	Medium	Negligible		Beneficial Minor
Operational Phase						
Occupation of Plots 1, 2, 3, 4 and 5	Human Health – via inhalation of dust/particulates, inhalation of gases/vapours, dermal contact or ingestion	Adverse	Long term /permanent	Substantial	Removal of primary sources. Removal of secondary sources. Placement of clean cover Gas mitigation measures – Plot specific. Appropriate construction materials for water supply pipes.	Negligible
Surface water will be managed and discharged to the River Don – Plots 1, 2, 3, 4 and 5	Ecology – no uncontrolled releases/reduced infiltration	Beneficial	Long	Minor	Infiltration will be managed (SUDS) . No uncontrolled discharges.	Beneficial Minor
	Surface Waters – controlled quality of discharge	Beneficial	Intermittent / Long	Moderate	Maintenance of SUDS.	Beneficial Moderate
Construction on aggressive ground – Plots 1, 2, 3, 4 and 5	Buildings and services	Adverse	Long	Negligible	Managed through the Design process with consideration of gas protection, construction materials including water supply pipework, concrete specification, foundation design.	Negligible
	Surface Waters - Piled Foundations – creation of preferential pathway possible indirect (recharge) to River Don	Adverse	Medium	Minor		Negligible

Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
	Ecological Systems – creation of preferential pathway possible indirect (recharge) to River Don	Adverse	Long	Minor		Negligible
Re-use of contaminated soil in open areas (inc brown roof) – Plots 1, 2, 3, 4 and 5	Human Health – construction workers and occupiers of completed phases depending on phasing via inhalation of dust/particulates	Adverse	Long	Moderate	Controlled excavation, transportation and storage of soil and/or track bed – minimise dust generation. Controlled placement from storage to point of use.	Negligible
	Surface Waters - possible dust deposition	Negligible	Long	Minor	Placement of cover system to control exposure including gravel mulch to minimise dust generation on roof.	Negligible
	Ecological Systems – maintenance of local habitat	Beneficial	Long	Minor	Maintenance programme.	Negligible
Importation of Soils for clean cover – Plots 1, 2, 3, 4 and 5	Human Health– via inhalation of dust/particulates, inhalation of gases/vapours, dermal contact or ingestion	Negligible	Long	Negligible	Design of appropriate cover system for actual end use. Specification for the selection, management and placement (validation of thickness).	Negligible
	Surface Waters – infiltration/run off through	Beneficial	Long	Minor		Beneficial minor

ENVIRONMENTAL IMPACT ASSESSMENT: ENVIRONMENTAL STATEMENT

Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
	clean				Selection of locally derived plants / conservation of seeds / plants.	
	Ecological Systems – loss of local habitat/species	Adverse	Long	Negligible		Negligible
	Ground Chemistry – improvement in soil structure and chemistry	Beneficial	Long	Minor		Beneficial minor

Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
Ecology						
Development near River Don	Pollution to River Don SINC	Indirect impact through pollution of the river from spillage and drainage from site	Short-term temporary	Adverse significant at a site level	Preparation and implementation of a construction management plan to protect the River Don from indirect impacts.	Negligible
Incursion into former railway embankment	Partial loss of former railway embankment	Direct loss of habitats and temporary disturbance during construction	Long-term permanent	Adverse significant at local level	Minimise loss of embankment through design and maintain green link along line of embankment. Create new habitat to replace track bed and woodland habitats.	Moderate beneficial impact in long term
Development of vacant land	Partial loss of grassland	Direct loss of grassland	Long-term permanent	Adverse significant at a site level	Create species-rich grassland along the River Don.	Negligible
	Partial loss of Woodland	Direct loss of habitat	Long-term permanent	Adverse significant at a site level	Plant new trees along the River Don and throughout the development.	Moderate beneficial in long term
	Loss of breeding and feeding habitat for birds	Direct loss of breeding and feeding habitat	Long-term permanent	Adverse significant at a site level	Provide nesting boxes for a variety of bird species and create new habitat.	Adverse significant at a local level in short term Beneficial in long term
	Loss of feeding and roosting habitat for bats	Direct loss of roosting and feeding habitat	Long-term permanent	Adverse significant at a site level	Provide bat boxes for roosting and create new habitat for foraging.	Negligible
	Increased disturbance of otter from new land uses	Indirect impact arising from increased visitor activity along the river	Long-term permanent	Negligible	Create otter holt and retain riverside trees where possible.	Negligible
	Loss of habitat for invertebrates	Direct loss of habitat	Long-term permanent	Adverse significant at a site level	Create new brownfield habitat on roofs and species-rich grassland. Provide nesting and over wintering boxes.	Adverse significant at a site level

Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
Landscape and Visual Impact						
Change to Landscape	Landscape /townscape character	Indirect impact to character of site.	Long term, Permanent	Moderate beneficial	Site brought back into productive use, comprehensive landscape proposals, Intrusive light minimised.	Moderate beneficial
	Change of Land Use type	Direct change of land uses	Long term, permanent	Major beneficial	N/A	Major beneficial
	Setting of listed tram Shed	Indirect impact to setting of shed	Long term, Permanent	Neutral	New buildings visible in background.	Neutral
	Partial loss of former railway embankment	Direct impact of change to topography and loss of vegetation. Indirect change	Long term, Permanent	Slight Adverse	Use of brown roofs, creation of public open space linking to remaining embankment. Management of remaining vegetation on embankment.	Slight beneficial
	Public open space	Direct impact in providing new public open space resources	Long term, Permanent	Moderate beneficial	Open space provision for all uses in excess of requirements.	Moderate beneficial
	Public rights of way	Direct impact in providing new public rights of way and indirectly in improving amenity of existing PROW.	Long term permanent	Moderate beneficial	New facilities and improvements to existing.	Moderate beneficial
	Loss of vegetation	Direct loss of vegetation, indirect impact to landscape character	Long term, Permanent	Moderate Adverse	Comprehensive landscape strategy including significant areas of new planting.	Moderate beneficial
	Lighting impacts	Direct change to level of lighting on application site	Long term permanent	Moderate beneficial	New lighting would enhance safety and visual amenity.	Moderate beneficial

	Visual Change	Direct change of visual amenity	Long term, permanent	Moderate beneficial	Creation of new buildings set in comprehensive landscape, providing new visually stimulating skyline.	Moderate beneficial
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Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
Socio-Economic						
New commercial and residential development	Provision of New Homes	Direct/Beneficial	Long-Term	Moderate	N/A	Interactive
	Primary Healthcare Facilities	Direct/Negligible	Long-Term	Negligible	N/A	Interactive
	Primary Education	Direct/ Negligible	Long-Term	Negligible	N/A	Interactive
	Secondary Education	Direct/Adverse	Long-Term	Minor	TBA	None /Interactive
	Cumulative Impacts	Indirect/Negligible	Long-Term	Negligible	N/A	Negligible
	Provision of New jobs	Beneficial	Med/Long-Term	Substantial	Implementation of employment strategy	Substantial Beneficial
	Increase in GVA	Beneficial	Med/Long-Term	Moderate	N/A	Substantial Beneficial

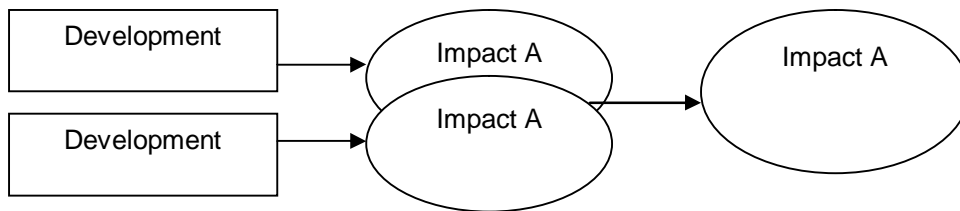
Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
Phasing and Construction (Residual Impacts summarised under other topics - including Traffic and Transport, Ground Conditions and Contamination, Ecology, Noise and Vibration, Air Quality, Archaeology and Historic Environment etc)						
	-	-	-	-	-	-

Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual Impact
Historic Environment						
Construction	Demolition of standing structures of local to regional historic significance	Adverse	Permanent	Moderate to Substantial	Archaeological recording of standing structures of historic significance.	Minimal
	Demolition of standing structures of no historic significance	Negligible	Permanent	Negligible	No further mitigation required.	None
	Alteration to historic character of area	Adverse	Permanent	Low	No further mitigation required.	None
Operation	Visual impact on historic buildings adjacent to site	Adverse	Permanent	Moderate to major	Design of development to minimise visual impact on historic buildings.	Minimal

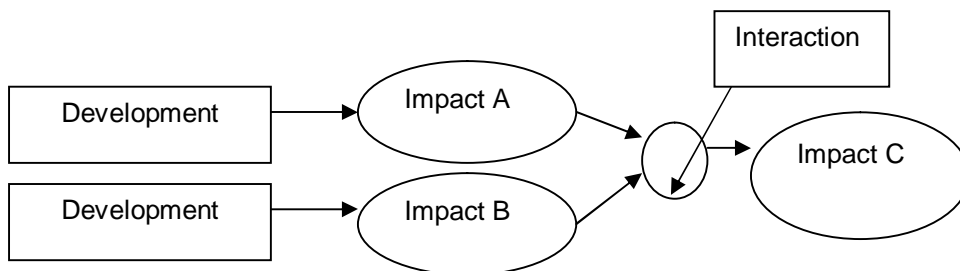
Activity	Potential Impact	Nature of Impact	Duration of Impact	Significance	Mitigation	Residual impact
Archaeology						
Setting up of site	Minor Adverse	Local ground penetration	Short term	Minor Permanent	Watching brief	None
Area ground reduction	Major Adverse	Area removal of archaeology	Short term	Major Permanent	Programme of archaeological monitoring	None
Removal of contamination hot spots	Minor to Moderate Adverse	Area removal of archaeology	Short term	Major Permanent	Watching brief	None
Raising ground level	None	Protection/capping of archaeology	Short term	Minor to moderate beneficial Long-term	None	None
Basement Construction	Major Adverse	Area removal of archaeology	Short term	Major Permanent	Programme of archaeological monitoring	None
Pile probing	Major Adverse	Small area removal of archaeology	Short term	Major Permanent	Programme of archaeological monitoring	None
Pile construction	None if preceded by probing	None	Short term	None	None	None
Pile cap and ground beam construction	Minor to Moderate Adverse	Small area removal of archaeology depending on site levels	Short term	Minor to Moderate Permanent	Programme of archaeological monitoring	None
Deep infrastructure	Minor to Moderate Adverse	Trenching through archaeological formations	Short term	Minor to Moderate Permanent	Programme of archaeological monitoring	None
Flood Alleviation Channel	Minor to Moderate Adverse	Wide trenching through archaeological formations	Short term	Minor to Moderate Permanent	Programme of archaeological monitoring	None
Landscaping	Minor Adverse or None or Minor beneficial	Protection/capping of archaeology	Long term	Minor to Moderate Permanent Long-term	None	None
Tree Planting	Minor Adverse	Penetration of roots	Long term	Minor Permanent Long-term	Programme of archaeological monitoring	None

19. Cumulative Impact and Interaction

- 19.1 The main purpose of this chapter is to consider the Cumulative Impacts and Interaction of both the proposed development and the committed development with in the local area including the proposed car dealerships on the area of land adjacent to Plot 5. Each technical chapter of this ES has already considered the Cumulative Impacts and Interaction arising.
- 19.2 **Cumulative Impacts** can be defined as those that arise from incremental changes caused by other past, present or reasonably foreseeable actions together with the project.



- 19.3 Chapters 5-16 of this set out the predicted construction, operational and long-term impacts of the proposed development on specific aspects of the physical and human environment.
- 19.4 The application site would potentially experience impacts relating to an increase in traffic in the local area during the construction of the development and during operation as the area becomes more populated and utilised. This will result in other interrelated effects such as a potential increase in noise and reduction in air quality as illustrated in the respective technical chapters.
- 19.5 **Interaction of effects** are the reactions between impacts, whether between impacts of just one project or between the impacts of other projects in other areas.



- 19.6 The consideration of such effects is not necessarily straightforward as certain assumptions need to be made in making an objective statement on these issues. This element is, however, made more straightforward in that both current and future land use and development proposals for the surrounding area are established. Specific to this, the existing, committed development in the area and the car dealerships application are relevant. All of this committed development has been taken account of when preparing this EIA. The term 'committed development' relates to those developments which have planning consent but have yet to be built-out.
- 19.7 Consideration of the interaction of impacts is considered an implicit part of the process and an inherent part of the procedure which was undertaken in preparing the EIA. For example, in order to assess the air quality and noise

and vibration impacts of the development it is fundamental that the assessed transport figures are taken into consideration.

- 19.8 Furthermore, the design and evolution of the RDD Masterplan which has resulted in the preparation of the Parameters Plans, has been necessarily iterative. Therefore, by design, the Parameters Plans, take into account an assessment of the likely Cumulative Impact and Interaction of effects.
- 19.9 A summary of the main Cumulative Impacts and Interaction of effects are outlined below for each technical chapter.

Traffic and Transport

- 19.10 The assessment of Traffic and Transport has considered the impact of the proposed development when combined with committed schemes within the local area. The assessment of Cumulative Impact is therefore implicit in the EIA.
- 19.11 Interaction of effects are summarised below and related largely to construction and phasing.

Construction Traffic Generation

- 19.12 Although methodologies are likely to change through the course of the project, a coarse estimate of likely construction traffic volumes has been determined for the purposes of the EIA. These have been based on the above construction phasing assumptions and information supplied by Laing O'Rourke.
- 19.13 Construction traffic levels are likely to be lower than would normally be anticipated for the amount of development proposed due to the fact that there is no significant demolition work to be undertaken.
- 19.14 At the peak of operations, it is felt that a reasonable estimate of likely construction traffic may be up to between 50 and 100 HGV movements per day. This would equate to a maximum of approximately 5-10 lorry movements per hour which is not deemed significant over this short term peak construction period.
- 19.15 Access and egress for construction vehicles will remain constant for each of the construction stages. All construction traffic entering and leaving the site will be closely controlled. Vehicles making deliveries to site or removing spoil, demolition materials will travel via designated routes, which will have been previously agreed with the SCC and other relevant bodies i.e. the Highways Agency.
- 19.16 Deliveries will be phased and controlled on a 'just in time' basis, all being clearly instructed as to their destination and entry gate number. This will minimise queuing on the highway, travel time around the site and any associated noise.

Air Quality

- 19.17 The assessment of Air Quality has considered the impact of the proposed development when combined with committed schemes within the local area as assessed within the Traffic and Transport assessment. In addition, the impact of local industrial sources of air pollution have been included within the air quality modelling, and therefore the Interaction between the RDD and other local sources of pollution have been accounted for. The assessment of Cumulative Impact is therefore implicit in the EIA.
- 19.18 The Interaction of effects in relation to Air Quality relate largely to the phasing and construction period when early residents or occupiers are likely

to effected by ongoing later phases of development. The EIA has considered these impacts and has suggested appropriate Mitigation Measures.

Drainage and Flooding

- 19.19 For logical reasons, the Cumulative Impact and Interaction of Drainage and Flooding are interlinked.
- 19.20 The assessment of Drainage and Flooding has considered the impact of the proposed development when combined with committed schemes within the local area. The assessment of Cumulative Impact is therefore implicit in the EIA.
- 19.21 In terms of Interaction of effects, the impact of Drainage and Flooding are considered together and share similar base data. Following consideration of the proposed Mitigation Measures the development will result in a largely negligible or beneficial residual impact.

Noise and Vibration

- 19.22 The assessment of Noise and Vibration has considered the impact of the proposed development when combined with committed schemes within the local area as assessed within the Traffic and Transport assessment. Furthermore, all surrounding sources of existing and committed noise sources have been addressed. The assessment of Cumulative Impact is therefore implicit in the EIA.
- 19.23 No particular cumulative impacts of the impacts outlined within the Noise and Vibration chapter have been identified other than a combination of traffic and industrial noise which are adequately addressed through proposed Mitigation Measures.
- 19.24 The interaction of effects in relation to noise and vibration relate largely to the phasing and construction period when early residents or occupiers are likely to effected by ongoing later phases of development. The EIA has considered these impacts and has suggested appropriate Mitigation Measures.

Ground Conditions

- 19.25 The assessment of Ground Conditions has considered the impact of the proposed development when combined with committed schemes within the local area. The assessment of Cumulative Impact is therefore implicit in the EIA.
- 19.26 It is not considered that any known intended development in the area will affect the site in terms of contamination or geotechnical issues or vice versa.
- 19.27 In terms of cumulative impacts within the development, if direct contamination of the surface water occurs this may cumulate with contamination of the surface water by groundwater recharge if leaching occurs. However, these effects need to be considered in terms of risk. With the completed development the risk is considered to be moderate without mitigation. During construction the risk may be greater, but the consequence is still considered to be mild and therefore this would have a **minor effect**. This impact will be addressed through Mitigation Measures.
- 19.28 In terms of interaction of effects, contamination of the groundwater may affect the surface water by recharge and this in turn may be ingested by birds associated with the off-site statutory designated area. These have been

assessed as individual effects in the assessment for both construction and operation and can be addressed through appropriate Mitigation Measures.

Ecology

- 19.29 The assessment of Ecology has considered the impact of the proposed development when combined with committed schemes within the local area, in particular the committed proposals adjacent to Plot 5 for car dealerships. The assessment of Cumulative Impact is therefore implicit in the EIA.
- 19.30 In particular the impact of loss of ecological habitat when combined with the adjoining site has been considered, particularly in relation to the former railway embankment.
- 19.31 Mitigation and compensation measures agreed as part of the planning permission granted for the car dealerships will complement the mitigation and compensation measures proposed as part of this application to ensure that there is a continued green link through the site along the line of the former railway embankment and that there will continue to be a mosaic of post-industrial habitats from open bare ground through flower-rich habitats to scrub and secondary woodland. As such it is considered that the cumulative impacts of this development and the car dealerships will be negligible.
- 19.32 In terms of Interaction of effects, the impact of Noise and Vibration, Air Quality, Phasing and Construction, Historic Environment, Ground Conditions, Archaeology, Drainage and Flooding have all been assessed in terms of impact on Ecological resources. Following consideration of the proposed Mitigation Measures the development will result in a largely negligible residual impact in most cases.

Landscape and Visual

- 19.33 The assessment of Landscape and Visual impact has considered the impact of the proposed development when combined with committed schemes within the local area, in particular the committed proposals adjacent to Plot 5 for car dealerships. The assessment of Cumulative Impact is therefore implicit in the EIA.
- 19.34 Following completion of the proposed development and in the long-term, the cumulative operational impacts at this location would improve. Views into the site would greatly improve as this currently derelict site is replaced with new quality-designed buildings, and as landscape measures become established.
- 19.35 With consideration of the approved planning application for the car dealerships to the east of Plot 5, there would be a cumulative change of topography impacting the former railway embankment. For the car dealerships development a section of the former railway embankment would be removed at the eastern end. While this would result in a cumulative loss of the former railway embankment, the car dealerships application includes provision for a linear belt of planting over part of the embankment area with improved public access as mitigation for the loss. The Cumulative Impact of this change would be neutral due to the integral mitigation provided as part of both development proposals.
- 19.36 In terms of Interaction of effects, the impact of Phasing and Construction, Historic Environment and Archaeology, Drainage and Flooding have all been assessed in terms of impact on Landscape and Visual resources. Following consideration of the proposed Mitigation Measures the development will result in a largely beneficial residual impact in most cases.

Socio-Economic

- 19.37 The assessment of Socio-Economic impact has considered the impact of the proposed development when combined with committed schemes within the local area. The assessment of Cumulative Impact is therefore implicit in the EIA, in particular, the potential Cumulative benefits associated with the package of proposals associated with the development.
- 19.38 The surrounding residential areas will benefit from the wider, long term regeneration benefits that emerge from the completion of the proposed development in terms of the increased investment in the area and the job opportunities created. A summary of the likely investment is shown below:
- n The development would provide up to 120,000m² of differentiated office space.
 - n The development will provide between 800 and 1,300 residential units, including a proportion of affordable housing. This will greatly assist in meeting the housing targets set in the RSS, particularly the need for the younger, affordable end of the housing market.
 - n The retail floorspace of the development will be up to 3,100². Estimated 619 FTE at the local level, and 504 FTE at the regional level over the period of the construction phase.
 - n Taking the full impacts of displacement and additionally into account, estimated 5,724 net direct jobs at the local level, and 5,467 net direct jobs at a regional level, would be created.
 - n Estimated at £205 million in GVA per annum at a local level, or £218 million at a regional level.
 - n Furthermore, the commercial and community uses proposed will benefit the new incoming population alongside existing residents in nearby areas.
- 19.39 These benefits will increase further when Cumulative Impacts are assessed.
- 19.40 There are no particular Interactions of effects which warrant specific note.

Historic Environment

- 19.41 The assessment of Historic Environment has considered the impact of the proposed development when combined with committed schemes within the local area. The assessment of Cumulative Impact is therefore implicit in the EIA. There are no particular proposals on adjacent sites other than the committed development for the car dealerships adjacent to Plot 5.
- 19.42 The impacts of the operations should be minimal and restricted to visual impacts on the setting of the two historic buildings adjacent to the site, and the general appearance of the surrounding urban landscape. However, these impacts should not be viewed as entirely negative, as the redevelopment of the site will remove the half demolished and derelict Staybrite Works (Plots 3/4) and reinvigorates the derelict Plots 1 and 2. This will bring these areas back into use and revitalise the local urban environment that has been in decay following the decline of the steel industry. Any potential visual impacts on the setting individual historic buildings can be mitigated by design using the Design Code and Regulatory Text.
- 19.43 In terms of Interaction of effects, the topics of Landscape and Visual impact, Archaeology, Drainage and Flooding have all been assessed in terms of impact on the Historic Environment. Following consideration of the proposed Mitigation Measures, the development will result in a largely minimal or no residual impact.

Archaeology

- 19.44 The assessment of Archaeology has considered the impact of the proposed development when combined with committed schemes within the local area. The assessment of Cumulative Impact is therefore implicit in the EIA.
- 19.45 No significant cumulative and interactive effects are identified, as the development scheme promotes a mitigation programme responding to the identified effects. Given the scale of the application site in 5 plots, where each plot contains industrial remains of different steel companies and with differing values, it is considered that without mitigation there would, on-the-whole, be moderate and major cumulative impacts. Interactive adverse effects would result where contaminated ground is excavated, firstly, indirectly, by removing the protection such soil affords to archaeological remains and then by directly impacting on the remains which may be contaminated. Other Interactive effects could occur by improving the habitat for burrowing animals and increasing penetrating root systems.
- 19.46 In terms of Interaction of effects, the topics of Landscape and Visual impact, Historic Environment, Drainage and Flooding, Ground Conditions and have all been assessed in terms of impact on Archaeology. The suggested Mitigation Measures will result in no residual impact.

Conclusions

- 19.47 In terms of Cumulative Impacts, the assessments undertaken as part of this ES have confirmed that the Cumulative Impacts of the mixed-use scheme, all committed development in the area and the car dealership development are largely negligible or non-existent. Where any impacts do occur, suitable Mitigation Measures can be put in place to eliminate any negative impacts.
- 19.48 In terms of Interaction of effect, this is also considered as an implicit part of the EIA process, and provided the Mitigation Measures set out within each of the technical chapters are implemented as proposed, the Interaction of

impacts will be minimal since most, if not all, will be successfully mitigated against.

- 19.49 Furthermore, the design and evolution of the proposal process, which has resulted in the preparation of the Parameters Plans, has been necessarily iterative. Therefore, by design, the Parameters Plans takes into account an assessment of the likely Cumulative Impact and Interaction of effects.

20. Mitigation Measures

- 20.1 This chapter provides a summary of the Mitigation Measures proposed in the ES to limit the environmental effects of the proposed RDD development. Full details of the Mitigation Measures are detailed in each of the ES topic chapters (5 to 16).
- 20.2 One of the main aims of the EIA process is to develop Mitigation Measures to avoid, reduce or compensate for the significant adverse effects of a project. These measures can relate to site construction or the completed development.
- 20.3 Table 20.1 below summarises the measures which would be implemented to avoid or ameliorate potential adverse environmental impacts which may arise from the RDD application and enhance the potential beneficial impacts of the mixed use development.
- 20.4 In many cases, Mitigation Measures are inherent within the application proposals (either through design or operation) whereby potentially significant adverse impacts are avoided, although not all impacts can be avoided and there are some further measures proposed to reduce or compensate for these.
- 20.5 The Mitigation Measures detailed below will successfully reduce the environmental effects identified to Negligible and therefore there will be no significant residual impacts arising from the proposed development.
- 20.6 The Mitigation Measures proposed will be addressed in detailed design at the Reserved Matters stage and enforced through Reserved Matters planning conditions.
- 20.7 The following table summarises the proposed mitigation measures. The table has been prepared in such a way to assist the drafting of appropriate planning conditions by Sheffield City Council.

Table 20.1: Summary of Mitigation Measures

ES Chapter	Topic	Sub Topic	Proposed Mitigation Measures	Delivery
5	Traffic and Transport		Travel Plan covering the following: Parking. Public Transport. Lorry Management. Information Pack. Car Sharing. Taxi. Working Practices. Infrastructure enhancements. Provision of pedestrian and cycle facilities.	Scheme Design; Section 106/Section 278 Agreements.
6	Air Quality	Construction	Dust control measures to be included within a Construction Code of Practice to be agreed with Sheffield City Council.	Planning Conditions; Construction Code of Practice to be agreed with SCC.
		Operation	Appropriate siting and phasing of sensitive land uses. Ventilation of ground floor residential units along Weedon Street and Carbrook Street. Transport Strategy and associated measures including Travel Plans. Biomass boilers for both space and water heating in the residential and commercial buildings to be low emission.	Planning Conditions; Scheme Design.
7	Drainage		The preferred option for surface water disposal would be to discharge Plots 1 to 4 directly to the Carbrook culvert; this would reduce surface water discharge from Plot 3/4 to 147 litres/sec which will more than offset the proposed direct discharge of the Greenfield run-off from Plots 1 and 2.	Planning Conditions; Scheme Design.

Table 20.1: Summary of Mitigation Measures

ES Chapter	Topic	Sub Topic	Proposed Mitigation Measures	Delivery
			Plot 5 will discharge to the existing outlet connected to the Vulcan Road watercourse. The most suitable SUDS/attenuation measures will be selected once detailed site layouts are available.	
8	Flooding		Provision of a flood defence and a flood alleviation scheme. Provision of plot by plot defences. Raised habitable floor levels and critical infrastructure. Attenuation of the surface water drainage from the site to reduce flood risk to others. Provision of safe access routes to and from the whole site, protected by the flood defence scheme.	Planning Conditions; Scheme Design; Flood Risk Management Plan.
9	Noise and Vibration	Demolition and Construction	Use of best practice methods.	Planning Conditions.
		Operation	Façade and ventilation attenuation to meet suitable internal noise levels for habitable rooms. Recessed balconies and screens at bedroom windows. Plant selection and noise control measures to meet proposed buildings and services plant noise emission limits. Suitable façade measures to avoid noise break out.	Planning Conditions; Scheme Design.
10	Ground Conditions and Contamination	Demolition and Construction	Site-specific method statement for site workers, site users/neighbours, controlled waters and unidentified ground conditions. Method statements will detail measures to mitigate the risk to ground and surface water run-off arising from the operation of construction vehicles and general	Planning Conditions; Scheme Design.

Table 20.1: Summary of Mitigation Measures

ES Chapter	Topic	Sub Topic	Proposed Mitigation Measures	Delivery
			<p>construction activities. This will follow current Environment Agency guidance.</p> <p>A best practice approach will be employed during construction to minimise accidental releases, and the effects of such releases, of potentially contaminative or hazardous substances both arising from on-site sources or from materials imported to the site.</p> <p>Remedial Strategy for material excavation, handling and compaction.</p> <p>Buildings and services – appropriate specification of construction materials to mitigate exposure to chemical attack and permeation of water supply pipes by contaminants.</p> <p>Design measures including gas protection, service routes and specification of piles are also required.</p> <p>Waste management – Site Waste Management Plan will be prepared.</p> <p>Geotechnical – the ground improvement techniques will be selected to ensure contamination migration pathways are not created.</p>	
		Completed development	<p>Maintenance workers – All confined spaces and below ground voids would be appropriately ventilated and have warning notices affixed.</p> <p>Geotechnical – The piling techniques adopted will be selected to ensure a contamination migration pathway is not created. This will be in accordance with the Environment Agency guidance on Piling and Penetrative Ground Improvement Methods on Land Affected by</p>	<p>Planning Conditions.</p> <p>Remediation Strategy.</p>

Table 20.1: Summary of Mitigation Measures

ES Chapter	Topic	Sub Topic	Proposed Mitigation Measures	Delivery
			<p>Contamination.</p> <p>Remediation of the site appropriate to the planned development. A Remedial Strategy for buildings and services, occupiers, ecological systems, ground chemistry and surface water, will be prepared detailing and specifying the protective measures. This strategy will be agreed with Sheffield City Council and the Environment Agency.</p> <p>Strategy will also detail the provision of any cover system to be incorporated into landscaping to mitigate exposure pathways.</p>	
11	Ecology		<p>Design of development to ensure green link is retained along the line of the former railway embankment.</p> <p>Creation of new green spaces and brown roofs to increase the permeability of the new development and encourage wildlife movement.</p> <p>Creation of brown roofs across the car parks adjacent to the former railway embankment to compensate for the residual loss of track bed habitat.</p> <p>Brown roofs on new buildings to compensate for the loss of grassland habitat.</p> <p>Creation of species-rich riverside grassland as part of the riverside park.</p> <p>Tree and scrub planting along the riverside to compensate for the loss of secondary woodland and scrub.</p> <p>Creation of green walls to provide feeding, over wintering and nesting opportunities.</p> <p>Creation of a new wetland with marginal planting to encourage biodiversity.</p>	<p>Section 106; Planning Conditions; Scheme Design; Ecology Management Plan; Construction Management Plan.</p>

Table 20.1: Summary of Mitigation Measures

ES Chapter	Topic	Sub Topic	Proposed Mitigation Measures	Delivery
			<p>Preparation and implementation of Ecology Management Plan.</p> <p>Implementation of a Construction Management Plan.</p> <p>Provision of nest boxes for key breeding bird species and new foraging habitats.</p> <p>Use of ornamental plant species in formal areas.</p> <p>Provision of new roosting and foraging habitat for bats</p> <p>Construction of an otter holt.</p> <p>Provision of nest and overwintering boxes for invertebrates.</p>	
12	Landscape and Visual		<p>Physical/green link through core development to the River Don.</p> <p>Creation of a riverside park with enhanced access to the River Don.</p> <p>Enhancement/management of the retained embankment.</p> <p>Creation of boulevards through planting of tree avenues.</p> <p>Use of brown roof to mitigate habitat loss.</p> <p>Creating landscaped green stepping stones into the centre of the development.</p> <p>Provision of formal and informal recreation facilities to meet residential needs.</p> <p>Use of high quality materials sympathetic to the local environment.</p> <p>Provision of private and communal gardens for residences.</p> <p>Creation of a new public square in Plot 2.</p>	Section 106 Agreement; Planning Conditions. Scheme Design.
13	Socio-Economic	Construction	Discussions with 'The Source' have begun.	Section 106 Agreement.

Table 20.1: Summary of Mitigation Measures

ES Chapter	Topic	Sub Topic	Proposed Mitigation Measures	Delivery
		Employment and Training	<p>Establishment of Steering Group on submission of the first Reserved Matters application to ensure all relevant parties are engaged in the process.</p> <p>A significant proportion of the construction jobs created by the development could be taken up by the local community.</p> <p>British Land will also work with the construction Skills Council to consider the most appropriate way to deliver a trained workforce when required for the development phases.</p>	<p>Opportunities will be publicised locally through a variety of methods.</p> <p>Application for training will be open to all.</p> <p>Training – methods include:</p> <ul style="list-style-type: none"> - Mobile training centres on construction sites. - Academy (part of the DfES initiative to improve the standard of industry training and tackle skills shortages across the UK) – partnership between Construction Skills, training providers and employers including British Land. <p>Employment and Job Brokerage – on completion of key elements of the training programme, individuals will be offered either a placement or a guaranteed interview for a job.</p> <p>The intention throughout the programme is to ensure that a minimum equivalent of an NVQ Level 2 qualification is achieved by all participants.</p>
		Operational Employment and Training	Establishment of relationships between the developer, the employer and the local community from the onset of the project.	<p>Section 106.</p> <p>Opportunities will be publicised locally through a variety of</p>

Table 20.1: Summary of Mitigation Measures

ES Chapter	Topic	Sub Topic	Proposed Mitigation Measures	Delivery
			<p>5,700 jobs will be created by the proposals, a significant proportion of which are likely to be taken up by the local community.</p> <p>A Steering Group should be established approximately 18 months prior to the dates of the first available jobs.</p> <p>All training opportunities should lead to a recognised accredited qualification.</p> <p>An outreach process will be utilised to identify and refer likely individuals who could benefit from training programmes.</p>	<p>methods.</p> <p>Application for training will be open to all.</p> <p>An agreed action plan will be tailored to each applicant's existing skills and employment aspirations. This action plan will then for the Passport to Employment for Learning and Skills Council recognition.</p> <p>Employment and Job Brokerage – on completion of key elements of the training programme, individuals will be offered either a placement or a guaranteed interview for a job.</p>
14	Phasing and Construction		<p>Implementation of a Construction Environmental Management Plan prepared by the appointed Contractor. This will take account of all aspects of the construction process including Health and Safety Rules and Management Procedures, handling of materials and waste, and environmental management.</p>	Planning Conditions.
15	Historic Built Environment	Mitigation by Design	<p>The redevelopment of the site regenerates the area and enhances existing structures within the vicinity of the site.</p> <p>Design Code – which seeks to enhance the setting of the historic landscape.</p>	Planning Conditions; Scheme Design.
		Mitigation by Record	<p>Programme of building recording of structures of local to regional significance – including note of ground surfaces.</p>	Planning Conditions.

Table 20.1: Summary of Mitigation Measures

ES Chapter	Topic	Sub Topic	Proposed Mitigation Measures	Delivery
16	Archaeology		<p>Any necessary in-situ preservation of high value archaeological remains, especially on Plot 1, will be achieved by the layout configuration of the scheme.</p> <p>Mitigation would be designed as a result of further research, site evaluation and assessment of the development scenarios.</p> <p>Programme of mitigation during the construction phase.</p> <p>Detailed Conditions to Outline approval and further Conditions at Reserved Matters stage.</p>	<p>Planning Conditions; Scheme Design.</p>

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