Environmental Statement Addendum
Stanton Ironworks, Erewash, Derbyshire

On behalf of
Saint-Gobain PAM UK LTD

OCTOBER 2014
REFERENCE 3173

ENVIRONMENTAL STATEMENT ADDENDUM:

NEW STANTON

AT

STANTON IRONWORKS, EREWASH, DERBYSHIRE

ON BEHALF OF: SAINT-GOBAIN PAM UK LTD

PREPARED BY: SARAH BUTTERFIELD

REVIEWED BY: KEITH FENWICK

DATE: OCTOBER 2014
## CONTENTS

<table>
<thead>
<tr>
<th>PART</th>
<th>SECTION</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 1</td>
<td>Section 1</td>
<td>Introduction</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Section 2</td>
<td>Site Description</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Section 3</td>
<td>Proposed Development</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Section 4</td>
<td>Assessment of Environmental Impacts</td>
<td>24</td>
</tr>
<tr>
<td>Part 2</td>
<td>Section 5</td>
<td>Landscape and Visual</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Section 6</td>
<td>Geology</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>Section 7</td>
<td>Water</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Section 8</td>
<td>Ecology</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>Section 9</td>
<td>Air Quality and Noise</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Section 10</td>
<td>Transport</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td>Section 11</td>
<td>Archaeology</td>
<td>211</td>
</tr>
<tr>
<td></td>
<td>Section 12</td>
<td>Socio-economic</td>
<td>212</td>
</tr>
<tr>
<td></td>
<td>Section 13</td>
<td>Waste</td>
<td>214</td>
</tr>
<tr>
<td></td>
<td>Section 14</td>
<td>Interaction and alternatives</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>Section 15</td>
<td>Conclusions and Residual Impacts</td>
<td>255</td>
</tr>
</tbody>
</table>

## APPENDICES

**Appendix A**  
Original Environmental Statement, dated November 2012

- **Appendix 1.1** Copy of Scoping Opinion Request and formal response from Erewash Council  
- **Appendix 1.2** Summary of Grove Farm Tip Application  
- **Appendix 1.3** Energy Statement  
- **Appendix 3.1** Phasing Strategy  
- **Appendix 4.1** Copy of Schedule 4 of EIA 2011 Regulations  
- **Appendix 5.1** Landscape & Visual Figures
- Appendix 5.2 Site Application
- Appendix 5.3 Visual Appraisal Methodology
- Appendix 5.4 Countryside Character Details
- Appendix 5.5 Visual Effects Table
- Appendix 5.6 Tree Survey
- Appendix 6.1 Flood Risk Assessment
- Appendix 6.2 Preliminary Risk Assessment (April 2012)
- Appendix 6.3 Preliminary Geo-Environmental Assessment Summary (June 2012)
- Appendix 6.4 Outline Remediation Strategy (June 2012)
- Appendix 7.1 Flood Risk Assessment
- Appendix 7.2 Supplementary Flooding Report
- Appendix 8.1 Desk Based Study
- Appendix 8.2 Phase 1 Survey
- Appendix 8.3 Bats Survey
- Appendix 8.4 Badger Survey and Assessment — Confidential
- Appendix 8.5 Breeding Bird Survey
- Appendix 8.6 Great Crested Newt Survey
- Appendix 8.7 Reptile Surveys
- Appendix 8.8 Invertebrates Survey
- Appendix 9.1 Air Quality Assessment
- Appendix 9.2 Location of Noise Receptor
- Appendix 9.3 Background Noise Levels
- Appendix 9.4 Noise Model
- Appendix 9.5 Construction Phasing Works
- Appendix 10.1 Transport Assessment
- Appendix 10.2 Travel Plan
- Appendix 11.1 Archaeology Desk Based Assessment
- Appendix 11.2 Appraisal of Standing Buildings
- Appendix 12.1 Socio Economic Statement
- Appendix 12.2 Retail Impact Assessment
**Figures**

- Figure 2  
  Geo Environmental Zones
- Figures 7.1 – 7.3  
  Water
- Figures 8.1 – 8.6  
  Ecology
- Figures 10.1 – 10.6  
  Transport
- Figures 11.1 – 11.10  
  Archaeology

**Appendix B**  
Amended Parameter Plan Drawings

- Parameter Plan 1: Land Use – 17815 9312B
- Parameter Plan 2: Scale – 17815 9602D
- Parameter Plan 3: Residential Density – 17815 9601E
- Parameter Plan 4: Access and Movement – 17815 9600F
- Parameter Plan 5: Green Infrastructure – 17815 9305C
- Parameter Plan 6: Phasing – 17815 9601A

**Appendix C**  
Additional Parameter Plan Drawings

- Buildings to be retained Plan – 17815 9907

**Appendix D**  
Updated ES Appendices to Original Environmental Statement at Appendix A-
Addendum Technical Reports

- Appendix 3.1 Phasing Strategy
- Appendix 5.5 Revised Visual Effects Table
- Appendix 8.6 Great Crested Newts (2014)
- Appendix 8.8 Invertebrate Survey (2013)
- Appendix 12 Retail Assessment (2014)

**Appendix E**  
Additional ES Appendices - Supporting Letters from Project Team and Technical Reports

- Appendix 6.5 – Letter from RSK dated 14th August 2014
- Appendix 7.3 – Product 4 Information
- Appendix 9.6 – Noise Mitigation Assessment (March 2014) 296170-(02)
- Appendix 10.3 – Letter from Vectos dated 31st July 2014
• Appendix 11.3 – Letter from RSK dated 14\textsuperscript{th} August 2014
• Appendix 12.3 – Note from Quod dated 31\textsuperscript{st} July 2014

\textbf{Appendix F} \hspace{1cm} \textbf{Additional ES Figures}

\begin{itemize}
  \item Figure 9.1 \hspace{1cm} Bund Barrier Design
  \item Figure 9.2 \hspace{1cm} Noise Contours
\end{itemize}
1.0 INTRODUCTION

Introduction to ES Addendum

1.1 This ES Addendum has been prepared to assess the environmental effects associated with the proposed amendments to the scheme at Stanton Ironworks, Erewash the subject of an Environmental Statement (November 2012) submitted to accompany planning application ERE/0213/0001.

1.2 The need for a review of the original Environmental Impact Assessment follows receipt of a detailed post submission consultation response from Erewash Borough Council (letter dated 20th February 2014), which sought an amendment to the location of the proposed land use and further details on the proposed noise attenuation bund. The Applicant (Saint-Gobain PAM UK LTD) has sought to respond to the Council’s comments and request with the following amendments to the original scheme which are set out on the Illustrative masterplan and Parameter Plan drawings:

- the relocation of residential units from the north of the site (formerly Phase R6) to the southwest corner of the site (formerly Phase G1);
- the relocation of the sports pitches in the southwest corner of the site (formerly Phase G1) to the north of the site (formerly Phase R6); and,

1.3 For ease of reference, the table below identifies the amended parameter plan drawings, which supersede Parameter Plan 1-6 submitted with the original Environmental Statement (dated November 2012):

<table>
<thead>
<tr>
<th>Amended Parameter Plan</th>
<th>Original Parameter Plan (now superseded by amended version)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter Plan 1: Land Use, Drawing No. 9312 Rev F</td>
<td>Parameter Plan 1: Land Use, Drawing No. 9312</td>
</tr>
<tr>
<td>Parameter Plan 2: Scale, Drawing No.9602 Rev G</td>
<td>Parameter Plan 2: Scale, Drawing No.9602 Rev C</td>
</tr>
<tr>
<td>Parameter Plan 3: Residential Density,</td>
<td>Parameter Plan 3: Residential Density,</td>
</tr>
</tbody>
</table>
### Parameter Plan 4: Access and Movement
- **Drawing No:** 9600 Rev H
- **Drawing No:** 9601 Rev D

### Parameter Plan 5: Green Infrastructure
- **Drawing No:** 9305 Rev B
- **Drawing No:** 9305 Rev E

### Parameter Plan 6: Phasing
- **Drawing No:** 9601 Rev A
- **Drawing No:** 9601 Rev C

#### 1.4
In response to the Council’s request within their letter dated 20th February 2014, the following drawings have been produced for clarification and included at Appendix C of this Addendum for ease of reference:

- Buildings to be retained Plan – 17815 9907

#### 1.5
The above amendments do not alter the total quantum of development proposed assessed as part of the original Environmental Statement, dated November 2012.

#### Environmental Impact Assessment (EIA)

#### 1.6
The Application Site (the site) comprises previously developed land at the former Stanton Ironworks. This area was historically dominated by industrial uses including manufacturing buildings. The two largest buildings on site were the Hallam Plant (now demolished) and the Stanhope Plant, which remains. Storage and stockpiling areas associated with Saint-Gobain PAM UK Ltd’s pipeline manufacturing business have co-existed with the manufacturing industries. Additional uses on the site consist of a range of general industry, manufacturing and ancillary uses. Significant areas of the site now lay vacant.

#### 1.7
The site is located within the Erewash Valley between Nottingham and Derby and is situated approximately 1km to the south of Ilkeston and 0.5km to the north of Stanton-by-Dale. It is accessed by a number of unclassified roads, which provide linkages to the strategic highway, namely the A50 and A52. The M1 motorway is located to the east of the Site, although there is no direct access between the site and the motorway.

#### 1.8
The Applicant is seeking outline planning consent, with all matters (expect access) reserved, on land at Stanton Ironworks, south of Ilkeston for:
'Outline Planning Permission (with all matters reserved except for access) for demolition and site clearance works to allow for the construction of a mixed use neighbourhood development comprising up to 1,950 residential units; a new neighbourhood centre which includes Class A1 retail uses comprising up to 2,787m$^2$ (gross) of food retail and up to 1,275m$^2$ (gross) of non-food retail, together with café/restaurant/bar uses (Use Classes A3, A4 And A5) of up to 1,672m$^2$ (gross) floorspace and community uses (Use Class D1) of up to 2,500m$^2$ (gross); employment uses comprising up to 20,000m$^2$ of offices (Use Class B1(A)&(B)) and up to 50,000m$^2$ floorspace of general industry (Use Class B2) and storage and distribution (Use Class B8); a 150 bed accommodation for the elderly within a care village environment and GP/health centre (1,000m$^2$) (Use Class C2); a 2-form entry primary school, along with a network of public open spaces (which includes sports pitches, allotments, public realm improvements and a community plaza) together with associated car parking, landscaping, engineering and infrastructure works’.

1.9 Since the submission of the planning application there have been some proposed amendments to the scheme which have resulted in the requirement for a series of chapters to be updated. This ES Addendum updates the original ES submitted alongside the planning application in November 2012 and should be read in conjunction with that document.

1.10 This Environmental Statement (ES) Addendum presents the results of the review of the proposed amendments set out in paragraphs 1.2 – 1.5 above in respect of the original Environmental Impact Assessment (EIA) carried out in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2011. This statement should be viewed jointly with the corresponding application on which it is based and the Planning Statement that sets out in more detail the development proposed, the relevant planning policy context and other matters relevant to its consideration.

1.11 The ES Addendum considers the likely impacts arising from the development proposed at Stanton, Erewash, Derbyshire.

1.12 Under the above Regulations all applications for planning permission for urban development projects above certain threshold criteria and likely to give rise to significant environmental effects are required to be accompanied by an ES presenting the results of an EIA. This ensures that significant environmental issues associated with the proposed development are considered as part of the planning application process and taken into account in any decision taken.
1.13 The location and extent of the Application Site (the Site), is shown edged red on Drawing 17815 9001C.

1.14 This Addendum has assessed whether impacts from the proposed variations to development would have any more significant environmental effects that the impacts predicted as part of the original EIA.

1.15 The ES Addendum comprises this statement and the associated Technical Appendices together with a separate non-technical summary. This is available separately from Erewash Borough Council or Alliance Planning. Together these documents discharge the requirements of the above regulations.

1.16 This application constitutes development requiring an EIA. The EIA covered the following environmental issues the results of which are set out in this ES:

- Landscape and Visual
- Geology, soils and ground conditions
- Water Resources and Flood Risk
- Ecology
- Air quality and Noise
- Transport
- Archaeology and cultural Heritage
- Socio-economic (including Retail Impact)
- Waste
- Interaction and alternatives

1.17 The individual assessments that comprise the EIA and which are summarised in this ES followed a methodology which wherever relevant identified:

- Planning and other legislative context;
- Methodology and significance criteria;
- Baseline information;
- Assessment of effects including potential and predicted impacts;
PART ONE
INTRODUCTION

- Appropriate mitigation, compensation and enhancement;
- Any residual impacts;
- Conclusions.

1.18 The EIA informed the preparation of the planning application and the detailed design of the development. The application incorporates all of the relevant recommendations from the original ES plus this Addendum that are designed to protect the environment.

1.19 The ES sets out in Section 13 consideration of the main alternatives considered as part of the EIA process and an assessment of any key interactions between each of the topic areas set out above. Although many of the detailed alternatives are not expressly noted in each of the relevant sections of this ES, they formed part of the assessment methodology and the recommended form of development represents the most practicable form of development that minimises the impact on the environment.

1.20 The application is described more fully in the planning application where there is also a description of the key policies that apply to the proposed development.

1.21 Copies of the Non-Technical Summary of the ES can be obtained from:

Erewash Borough Council or Alliance Planning
Town Hall 54 Hagley Road
Long Eaton Edgbaston
Derbyshire Birmingham
NG10 1HU B16 8PE

Background to the Scheme

1.22 In 2005 the Erewash Borough Council began the production of an Area Action Plan for the derelict and unused part of the Stanton Site, at which point the Applicant remained a large employer on the Site. The draft Area Action Plan was produced in 2006 and aimed at stimulating debate and interest in regenerating the Site.

1.23 Work on the draft Area Action Plan was completed in 2007. The Area Action Plan (APP) for Stanton has not been adopted and therefore, has no development plan status.

1.24 In 2008 a decision was made to pursue a comprehensive redevelopment of the Stanton Site following the approach set out in the Draft AAP but including a greater site area than
previously identified. The wider community and statutory stakeholders were engaged in a process of consultation including an initial ‘Enquiry by Design’ week (June 2008), where discussions were centred on the following matters:

- options for the site;
- type of development to come forward;
- appearance of new development; and
- access.

1.25 Following the Enquiry by Design, the draft masterplan and associated access options was the subject of an EIA Scoping Report prepared in December 2008 and a subsequent EIA Scoping Report prepared in March 2010.

1.26 Since December 2008 and the further review in 2010, a number of material factors have changed the emphasis of the masterplan and resulted in a single neighbourhood anchoring the Site (the scheme had previously been on larger scale). In addition, on-going transportation modelling and assessments of the access options has identified a capacity for the site, of approximately 1,950 residential units, community and retail uses, plus 24ha of employment.

1.27 Discussions undertaken during this period with key stakeholders identified a strong desire from the Council to retain a significant level of employment uses on site and ensure adequate connectivity with adjacent settlements as part of the overall scheme. Based on the above, it was considered appropriate to include a specific employment zone and to reinforce existing linkages between the Site and the adjacent settlements, where appropriate.

1.28 The outcome of the transportation modelling has indicated that the proposed development can be accommodated within the existing highway network subject to a number of ‘on-line’ improvements. There is a new access route from the north of the site.

1.29 There has been an on-going iterative process of design evolution, having regard to the increasing knowledge about the Site obtained from detailed ecological, design, transport, topographical, hydrological, archaeological, planning, ground conditions and landscape works and analysis, combined with an understanding of the socio-economic factors in the locality and reference to scheme viability. This iterative design process has been on-going since 2008.
1.30 This has gradually been pulled together into a masterplan, now submitted for approval, which proposes the development of 1,950 dwellings, approximately 24ha of employment land, a local neighbourhood centre, primary school and necessary supporting social and physical infrastructure.

Pre-Application Discussion

1.31 The proposed development has been the subject of extensive pre-application discussions with Erewash Borough Council, Statutory Consultees, local residents and working groups. Local residents and businesses, as well as other key stakeholders, have also had the opportunity to comment on the proposed development through various public consultation events.

1.32 A dedicated website has also been operating, www.erewashcouncil.com/stanton/, which can be accessed directly from the Council’s website and provides background information. A full account of the consultations undertaken is contained within the accompanying Statement of Community Involvement.

1.33 Following the submission of the planning application to Erewash Borough Council, the proposed development has been subject of consultation period with responses being received from both statutory and non-statutory consultees.

Structure of ES Addendum

1.34 This ES Addendum comprises a review of the agreed ‘scope’ of the original Environmental Statement (November, 2012) prepared and submitted in support of planning application ERE/0213/0001, against the amendments set out at paragraphs 1.1-1.5 of this Chapter.

1.35 As a result of this review the following original ES chapters have been updated and are reproduced within this ES Addendum:

- Chapter 5: Landscape and Visual
- Chapter 7: Water
- Chapter 9: Air Quality and Noise
- Chapter 13: Waste
- Chapter 14: Interactions and Alternatives
1.36 All other chapter contained within the original Environmental Statement (dated November 2012) remain unchanged, with a statement to this effect included for each respective chapter.

1.37 For ease of cross referencing, this ES Addendum is structured so as to follow the chapter headings as per the original Environmental Statement presented at Appendix A.
2.0 SITE DESCRIPTION

INTRODUCTION

2.1 The red line boundary for the proposed development shown on drawing 17815 9001C has not been the subject of any amendment.

FINDINGS OF ES ADDENDUM REVIEW

2.2 The Site Description set out in Chapter 2 of the Environmental Statement dated November 2012 presented at Appendix A of this ES Addendum is not the subject of any amendment and therefore, remains unchanged and valid.
PART ONE
PROPOSED DEVELOPMENT

INTRODUCTION

3.0 PROPOSED DEVELOPMENT

3.1 Following the submission of the outline planning permission (ref: ERE/0213/0001) the following proposed amendments have been made to the Illustrative Masterplan and Parameter Plan drawings:

- The relocation of residential units from the north of the site (formerly Phase R6) to the southwest corner of the site (formerly Phase G1);
- The relocation of the sports pitches in the southwest corner of the site (formerly Phase G1) to the north of the site (formerly Phase R6); and,
- The inclusion of the extent of a noise attenuation bund in the northwest corner of the site.

3.2 The table below identifies the amended parameter plan drawings included at Appendix B of this Addendum, which supersedes Parameter Plans 1-6 submitted with the original Environmental Statement (dated November 2012):

<table>
<thead>
<tr>
<th>Amended Parameter Plan</th>
<th>Original Parameter Plan (now superseded by amended version)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter Plan 1: Land Use, Drawing No. 9312 Rev F</td>
<td>Parameter Plan 1: Land Use, Drawing No. 9312</td>
</tr>
<tr>
<td>Parameter Plan 2: Scale, Drawing No.9602 Rev G</td>
<td>Parameter Plan 2: Scale, Drawing No.9602 Rev C</td>
</tr>
<tr>
<td>Parameter Plan 5: Green Infrastructure, Drawing No:9305 Rev E</td>
<td>Parameter Plan 5: Green Infrastructure, Drawing No:9305 Rev B</td>
</tr>
</tbody>
</table>
3.3 In response to a request from Erewash Borough Council, the following drawing has also been produced for clarification and included at Appendix C of this Addendum for ease of reference:

- Buildings to be retained Plan – 17815 990

3.4 The above amendments do not alter the total quantum of development proposed assessed as part of the original Environmental Statement (November 2012).

3.5 In light of the above amendments, ‘Chapter 3: Proposed Development’ of the original Environmental Statement (Appendix A) has been reproduced below for ease of reference and updates the following details:

- Reference numbers for the amended Parameter Plan drawings.
- Updated description of the land use layout for the Site to take into account the changes shown on the amended parameter plan drawings.
- Updated Phasing Strategy.

FINDINGS OF ES ADDENDUM: UPDATED PROPOSED DEVELOPMENT DESCRIPTION

CHAPTER 3.6

This application seeks outline planning permission for (with all matters reserved except for access):

‘for demolition and site clearance works to allow for the construction of a mixed use neighbourhood development comprising up to 1,950 residential units; a new neighbourhood centre which includes Class A1 retail uses comprising up to 2,787m² (gross) of food retail and up to 1,275m² (gross) of non-food retail, together with café/restaurant/bar uses (Use Classes A3, A4 And A5) of up to 1,672m² (gross) floorpace and community uses (Use Class D1) of up to 2,500m² (gross); employment uses comprising up to 20,000m² of offices (Use Class B1(A) & (B)) and up to 50,000m² of general industry (Use Class B2) and storage and distribution (Use Class B8); a 150 bed accommodation for the elderly within a care village environment and GP/health centre (1,000m²) (Use Class C2); a 2-form entry primary school, along with a network of public open spaces (which includes sports pitches, allotments, public
realm improvements and a community plaza) together with associated car parking, landscaping, engineering and infrastructure works’.

3.7 The Applicant has prepared a long term Vision and approach to the redevelopment of the Site, working with the Erewash Borough Council, statutory and non-statutory consultees and the local community in bringing forward the New Stanton development.

3.8 As an outline application, this submission seeks to agree the principle of the proposed development, with all matters (except access) reserved for future determination.

3.9 The indicative Masterplan for the Site is shown on Drawing 17815_9001: Illustrative Masterplan Rev F. This illustrates an indicative layout and arrangement for the proposed land uses, associated landscaping and infrastructure. A summary of the development proposal is provided below.

**Proposed Uses and Amount**

3.10 The ‘uses’ proposed include a mix of residential, retail, commercial, health, education, open space, amenity space and infrastructure provision and landscaping. The maximum thresholds for the various land uses are set out on Parameter Plan 1 Land Uses Ref: 9312 Rev F, and are summarised in the table below:

<table>
<thead>
<tr>
<th>USE</th>
<th>FLOORSPACE AMOUNT (Gross External Area)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>(approximately 50ha) 1,950 units</td>
</tr>
<tr>
<td>B1 (a) Employment</td>
<td>10,000 m²</td>
</tr>
<tr>
<td>B1 (c) Employment</td>
<td>10,000 m²</td>
</tr>
<tr>
<td>B2 Employment</td>
<td>10,000 m²</td>
</tr>
<tr>
<td>B8 Employment</td>
<td>40,000 m²</td>
</tr>
<tr>
<td>Primary School</td>
<td>420 Pupils</td>
</tr>
<tr>
<td>Food Retail</td>
<td>2,787 m² (gross)</td>
</tr>
<tr>
<td>Non Food Retail</td>
<td>1,275 m² (gross)</td>
</tr>
<tr>
<td>Café/Restaurant/Bar</td>
<td>1,672 m² (gross)</td>
</tr>
</tbody>
</table>
3.11 All future reserved matters details relating to the proposed development on the main part of the Application Site will conform to the approved quantum of development.

### Layout and Height

3.12 The indicative Masterplan (Drawing 17815_9001 Rev F) sets out the potential approach to the sitting and layout for the proposed uses. The overall layout has been designed around a new neighbourhood centre, which will be focused on a local High Street and Community Plaza. The residential development is to be situated to the south and west of the neighbourhood centre to maximise connectivity to the key community uses proposed, with employment uses (B1, B2 and B8) to the east of the Site.

3.13 Beyond the proposed residential areas, the land further west of the Site will not be brought forward for built development, but will provide ecological mitigation. The northern section of the site comprises formal and informal areas of open spaces, designed to incorporate the existing ponds. The northern section of the Site will also incorporate a noise attenuation bund, the extent of which is shown on drawing reference Parameter Plan 1 Land Use (ref: 9650 Rev F. Pockets of areas are reserved for the provision of new allotments.

3.14 Whilst detailed heights of the buildings are not being provided as part of this outline application, Parameter Plan 2 Scale (ref: 9602 Rev G) identifies the maximum height parameters across the Site.

3.15 With regard to the employment element, a maximum of 15m (4 storeys) is proposed along the eastern part of the employment area and restricts the height along the northern and western edge is restricted to 12.5m. The buildings located next to the residential uses will be predominantly 2 storeys in height and be primarily office uses (Use Class B1).

3.16 For the residential areas the variations comprise up to 9m to the south and eastern part of the Site and up to 12.5m for the residential development within the core of the Site. The Local Centre development will have a maximum height of 4 storeys.
Design

3.17 The detailed design for the proposed uses is reserved for future determination. However, the Design and Access Statement provides broad principles which will be taken forward within the detailed design stage which will aid future reserved matters applications.

Residential Development and Density

3.18 The proposals will bring forward up to 1,950 residential dwellings. The density for the residential development will vary between three thresholds of high (40dph average), medium (35dph average) and low (30dph average) (refer to Parameter Plan 3 Drawing Ref: 9601 Rev H).

3.19 The lowest density areas are proposed along the southern and western edge of the site, with medium density areas forming the core for the rest of the Site. The majority of the Site is proposed at medium density level, however, within the mixed use area, this increases to the high density threshold, surrounding the Community Plaza and Neighbourhood Centre, creating a more defined central space. At the western and southern edges a lower density is proposed which will create a transition with the adjoining open countryside.

3.20 The proposed development will provide affordable housing provision, which will be distributed across the development to ensure the delivery of a balanced community.

3.21 The residential mix for the development is still to be agreed but it is recognised that there is a need to provide a broad range of unit sizes.

Building Foot Print

3.22 A minimum and maximum size for the buildings has been fixed as part of this outline planning application. The parameter lengths and widths of the buildings will vary across the Site depending on the location. The residential building forms are set as follows:

<table>
<thead>
<tr>
<th>Length (x)</th>
<th>Length (y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>Standard residential building</td>
<td>4m</td>
</tr>
</tbody>
</table>
PART ONE
PROPOSED DEVELOPMENT

| Corner residential building | 4m | 100m | 7m | 15m |

3.23 The employment buildings forms are set as follows:

<table>
<thead>
<tr>
<th>Length (x)</th>
<th>Length (y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>Max</td>
</tr>
</tbody>
</table>

| Standard employment building | 10m | 150m | 8m | 30m |
| Corner employment building | 10m | 100m | 8m | 20m |

Non – residential uses

3.24 The proposals promote a new neighbourhood Centre which benefits both new and existing communities through the provision of local services, commercial businesses, educational, recreational, health and educational facilities.

3.25 A 2-form primary school is proposed on site on approximately 2ha of land. The mixed use local centre will comprise approximately 7ha of land, bringing forward up to a maximum of 4,062 m² of floorspace, comprising Class A1, A3, A4 and A5 uses. The provision of retail and café/restaurant uses will enhance the amenity value and encourage activity within the neighbourhood centre.

3.26 For community and social facilities, the development will see the provision of a new primary school, GP surgery and Care Village. The siting of these uses within the centre of the development will ensure that they are accessible to future and existing residents.

3.27 The commercial development to the east will provide up to a maximum of 70,000 sq.m of Class B uses on 24ha of land.

Open Space, Amenity Space and Children’s Playspace

3.28 The development will seek the provision of a well-connected and integrated network of open space. The quantum of open space proposed is shown on Parameter Plan 5 Ref: 9305 Rev E and summarised below:
<table>
<thead>
<tr>
<th>Type of Space</th>
<th>Size (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal Open Space</td>
<td>7.22ha</td>
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<tr>
<td>(includes 0.60ha within the school area for provision of a sport pitches)</td>
<td></td>
</tr>
<tr>
<td>Formal Open Space (Play Spaces)</td>
<td>1.75ha</td>
</tr>
<tr>
<td>Informal Open Space</td>
<td>21.91ha</td>
</tr>
<tr>
<td>Allotments</td>
<td>1.37ha</td>
</tr>
<tr>
<td>Existing and proposed water bodies (natural landscaped areas)</td>
<td>4.47ha</td>
</tr>
<tr>
<td>Community Plaza</td>
<td>0.50ha</td>
</tr>
</tbody>
</table>

**Accessibility and Parking Provision**

3.29 The principles surrounding the access and movement for the site are detailed within the Design and Access Statement.

3.30 Parameter Plan 4 Ref: 9600 Rev H fixes the access and egress points to the site and defines the location of new and existing routes, and identifies the primary and secondary roads, potential bus route and indicative bus stops. The proposed access arrangements will remain as existing, with one additional vehicular access to Crompton Road/Merlin Way to the northeast. There will be a total of five access points identified.

3.31 The pedestrian/cycle access points and off road pedestrian routes are also identified, along with the circulation route through the site for buses, pedestrians and cyclists. The siting of these has to be agreed in order to maximise opportunities to link with existing networks outside the Application Site.

3.32 All residential units will be provided with secure parking for bicycles, with internal parking provision being made within the apartment blocks. Cycle parking will also be provided within public areas for visitors.
Landscape and Ecology Mitigation

3.33 Parameter Plan 5 Ref: 9305 Rev E defines the key ‘green’ infrastructure, which will bring forward new structural planting on approximately 5.14ha of land in the form of trees along corridors and streets.

3.34 The landscape strategy includes for two large, informal parks to the north and west of the site and a ‘greenway’, which will curve through the development from north to south and is intended to become a linear park. A series of internal green spaces comprising allotments, pocket parks, play facilities and a central market square are also proposed, which will connect to the larger areas of the landscape structure by green, tree-lined streets, providing area of local activity.

3.35 The northern part of the site will be enhanced with the creation of a ‘Northern Park’ which will strengthen the buffer between the proposed development and existing development of Ilkeston. The existing fishing lake will be retained, with a further fishing lake proposed to add to the existing recreational offer.

3.36 To the west of the Site, the proposal will bring forward an Ecology Park on the existing elevated plateau which will provide necessary habitat compensation for that lost on site due to necessary works. This area of landscaping will be managed to create an invaluable ecological and information recreation resource for the wider community. Existing trees will also be reinforced and managed. Areas of seating and paths, which will connect back to the public rights of way, will be provided, allowing visitors to gain access to the top, offering view of the valley and surrounding landscape.

3.37 The proposed landscape strategy also includes for the provision of a ‘blue’ network of water routes (Nutbrook Canal and water attention swales), to enhance the quality of the natural environment.

3.38 Further details on the proposed landscaping and planting strategy are contained within Chapter 5 of the supporting Design and Access Statement and Design and Access Statement Addendum.

Drainage

3.39 The key drainage features proposed for the Site include:

- Use of soakaways where possible within the Site – particularly in the east
• Permeable paving to be used in parking courts and minor roads
• Soakaways and paving linked to overflows and surface attenuation features
• New ponds to be provided to the east of residential units
• Extensive swale network providing hydraulic and habitat linkage
• Re-opening of sections of the Nutbrook Canal and design to provide extreme event attention
• Flows from new developed areas to be restricted to Greenfield runoff rates.

3.40 Full details of the drainage strategy are set out in the submitted Flood Risk Assessment.

**Sustainability**

3.41 A Sustainability Strategy has been produced for the development and details the features to be incorporated for the scheme in terms of, design, transport, energy efficiency, waste management, water management, biodiversity, building specification and construction and adaptability.

3.42 An Energy Statement to accompany the planning submission has been prepared by Lean Green Consulting. The Energy Statement assesses the energy supply requirements for the proposed development, on both its technical feasibility and how well it adheres to local and national guidelines and regulations. A copy of the Energy Statement is presented at Appendix 1.3 of Appendix A.

3.43 Following a review of the existing local and national guidelines, the energy objectives for the New Stanton development are two-fold:

• For domestic buildings, all buildings should meet Code For Sustainable Homes level 4;

• For commercial buildings, 10% of the energy used by commercial properties should be supplied from renewable sources.

3.44 An Energy Strategy for the Site, which is focuses on an energy hierarchy that first minimises energy demand, has been developed to meet the above objectives. To this end, the proposed Strategy is considered to be more ambitious than current building regulations.

3.45 The key factors of the Energy Strategy developed for the Site are:
PART ONE
PROPOSED DEVELOPMENT

- designing and specifying buildings to minimise energy demand;
- meeting energy demand efficiently; and
- installing sufficient solar hot water (SHW) and photovoltaic (PV) electricity modules to make the remaining reductions in CO2 emissions required, and to meet the 10% renewable energy target for commercial-building energy-use.

3.46 The proposed Energy Strategy will result in an estimated 21% reduction in CO2 emissions compared to baseline emissions, and potentially much larger reductions compared to the current site.

3.47 The proposals are currently at a concept stage, and care will be needed to ensure that, as the project develops and building design and specifications solidify, the overall energy and CO2 objectives of the development are taken into account. However, as the strategy involves modular components it remains flexible and can be adapted to fit future refinements of the building designs to ensure the energy objectives are met.

3.48 Overall the Energy Strategy meets local guidelines which expect new developments to deliver high levels of sustainability and to contribute to national and local targets on reducing carbon emissions and energy use. Furthermore, the Strategy complies with the emerging Erewash Core Strategy guidance, which stipulates that developments should contribute to national and local targets on reducing carbon emissions and energy use, and that measures for doing this should follow the energy hierarchy.

Phasing

3.49 In light of the proposed amendments set out above, an updated Phasing Strategy has been produced for the Site to reflect the relocation of the former residential land use from the north of the canal to the south of the Site. The updated Phasing Strategy is contained within Appendix D and supersedes the document presented at Appendix 3.1 of the original Environmental Statement contained at Appendix A of this ES Addendum.
4.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS

INTRODUCTION

4.1 The proposed amendments to the scheme as described at Chapter 3 of this ES Addendum have been assessed against the environmental effects identified as part of the original Environmental Statement, dated November 2012.

4.2 Consideration of the potential impacts on the environment that may arise as a result of the proposed amendments has been taken into account as per the methods adopted and assessment undertaken as part of the original Environmental Statement.

FINDINGS OF ES ADDENDUM REVIEW

4.3 The Assessment of Environmental Effects set out in Chapter 4 of the Environmental Statement, dated November 2012 at Appendix A of this ES Addendum is not subject of any amendment and remains valid.
5.0 LANDSCAPE AND VISUAL

INTRODUCTION

5.1 This section of the ES describes the landscape character and visual amenity associated with the proposed development at New Stanton Neighbourhood. It firstly sets out the baseline landscape and visual appraisal for the Site following desktop studies and subsequent field surveys. It then identifies the likely significant effects of the proposed development on these baseline conditions, the scope for mitigating adverse effects and the residual effects.

This section has been prepared by Barton Willmore Landscape Planning and Design.

5.2 This section has been updated due to changes in the design layout of the Proposed Development that have occurred since the previous version of the ES was prepared. The changes are as follows:

5.3 an area of formal open space (sports pitches) proposed for the south-western corner of the central portion of the site will now be located to the north of the canal in the northern part of the site, and the residential development proposed for this area will instead be placed in the south-western corner of the central portion of the site; and

5.4 a noise attenuation bund will be constructed on land between the existing canal and the existing water body in the northern part of the Site. The bund will be a maximum height of 9.5m with inner and outer slope gradients ranging from between 1:3 and 1:2, depending on where gabions or engineered slope methods are used to take account of requirements for reduced bund footprint width. The location of the bund is shown on Parameter Plan 1: Land Use Plan Option 2 and an indicative cross section of the bund is shown on Drawing No. RG-L-SK01-3.

5.5 In addition, the Erewash Core Strategy 2011 – 2028 was adopted in March 2014 and as a result of this, a number of policies from the Erewash Borough Local Plan 2005 have been ‘saved’ and remain active, alongside policies within the adopted Core Strategy. These policies have been considered below.

5.6 This section should be read in conjunction with the following drawings contained in Appendix 5.1 which were issued with the previous version of the ES:

- Figure 5.1: Site Context Plan, 1:10,000 scale at A1;
- Figure 5.2: Aerial Photograph, not to scale at A1;
- Figure 5.3: Site Appraisal Plan, 1:5,000 scale at A1; and
- Figure 5.4: Visual Appraisal Plan, 1:10,000 scale at A1.
5.7 The text also makes reference to photographs of the Site and its surroundings, including a series of both Site Appraisal Photographs and Site Context Photographs contained in Appendix 5.2, issued with the previous version of the ES:

5.8 The brief for the preparation of this section of the Environmental Statement can be summarised as follows:

- To carry out a landscape and visual appraisal of the Application Site and its surroundings in order to assess its character and visibility, and its relationship with adjacent areas;
- To provide input into the Masterplan for the development proposals for the Site;
- To undertake a landscape and visual impact assessment of the Proposed Development in accordance with current best practice guidelines and to quantify the magnitude and significance of the impacts, both before and after mitigation; and
- To give consideration to the proposals in the context of the policies of Erewash Borough Local Plan, insofar as they refer to landscape and visual matters.

Planning Policy Context

5.9 This sub-section summarises the issues of landscape significance set out in the main Policy Documents – at the National and Local levels – which apply to the Application Site and its surrounding landscape, and against which a proposal for development of land comprising areas within the Site shall be considered.

**National Planning Policy**

**National Planning Policy Framework (NPPF)**

5.10 The NPPF was issued in March 2012 as one concise document which sets out the Government’s planning policies for England by replacing previous Planning Policy Guidance (PPGs) and Planning Policy Statements (PPSs). It aims to provide a planning framework within which the local community and local authorities can produce distinctive local plans which respond to local needs and priorities. The NPPF states that “The purpose of the planning system is to contribute to the achievement of sustainable development” and that there are “three dimensions to sustainable development: economic, social and environmental”. The role the environment will play is described as “contributing to protecting and enhancing our natural, built and historic environment; and as part of this, helping to improve biodiversity, use of natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy”.
5.11 The NPPF set out twelve Core Planning Principles which include that planning should:

“not simply be about scrutiny, but instead be a creative exercise in finding ways to enhance and improve the places in which people live their lives;

always seek to secure high quality design and a good standard of amenity for all existing and future occupants of land and buildings;

take account of the different roles and character of different areas, promoting the vitality of our main urban areas, protecting the Green Belts around them, recognising the intrinsic character and beauty of the countryside and supporting thriving rural communities within it;

contribute to conserving and enhancing the natural environment and reducing pollution. Allocations of land for development should prefer land of lesser environmental value, where consistent with other policies in this Framework;

conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations;”

5.12 The NPPF then identifies thirteen aspects which should be considered in developing local plans and reviewing planning applications. Those with regard to landscape and visual issues are 7: Requiring Good Design; 11: Conserving and Enhancing the Natural Environment; and 12: Conserving and Enhancing the Historic Environment.

5.13 Paragraphs 56 to 68 provide guidance on ensuring the delivery of good design. The NPPF stresses the need for development to respond to local character and be visually attractive, as well as emphasising the integration of development into the natural environment. The guidance states that:

“Planning policies and decisions should aim to ensure that developments:

will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;

establish a strong sense of place, using streetscapes and buildings to create attractive and comfortable places to live, work and visit;

optimise the potential of the site to accommodate development, create and sustain an appropriate mix of uses (including incorporation of green and other public space as part of developments) and support local facilities and transport networks;

respond to local character and history, and reflect the identity of local surroundings and materials, while not preventing or discouraging appropriate innovation;
create safe and accessible environments where crime and disorder, and the fear of crime, do not undermine quality of life or community cohesion; and are visually attractive as a result of good architecture and appropriate landscaping.”

5.14 With regard to the natural environment (Paragraphs 109-125), the document focuses on conserving and enhancing the local and natural environment, as well as a positive strategic approach to the creation, protection, enhancement and management of networks of green infrastructure. The framework states that:

“The planning system should contribute to and enhance the natural and local environment by:
protecting and enhancing valued landscapes, geological -conservation interests and soils;
recognising the wider benefits of ecosystem services;
minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and
remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.”

5.15 Paragraphs 126 to 141 provide guidance on the historic environment. The historic environment is defined as ‘all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.’ It further classifies a ‘heritage asset’ as ‘a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest.’

5.16 Heritage assets include designated heritage assets and assets identified by the local planning authority (including local listing). The treatment of the assets themselves and their settings, both of which are a material consideration in development management decision making are also addressed.

5.17 The NPPF states that, when determining planning applications, local planning authorities should take account of:
“the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and
the desirability of new development making a positive contribution to local character and distinctiveness.”

5.18 Further to this, local planning authorities can request that the applicant should describe “the significance of any heritage assets affected, including any contribution made by their setting”. The level of detail required in the assessment should be “proportionate to the assets’ importance and no more than is sufficient to understand the potential impact of the proposal on their significance”. “Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.”

5.19 Local planning authorities should take this assessment into account when considering the impact of a proposed development, “to avoid or minimise conflict between the heritage asset’s conservation and any aspect of the proposal”.

5.20 The NPPF also identifies that “when considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset’s conservation. The more important the asset, the greater the weight should be.”

5.21 With regard to significance, the NPPF states that:
“Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification. Substantial harm to or loss of a grade II listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.”

5.22 However, where a proposed development will lead to “less than substantial harm to the significance of a designated heritage asset”, this harm should be weighed against the public benefits of the proposal.

5.23 Also, “Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites and within the setting of heritage assets to
enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset should be treated favorably.”

5.24 With regard to non-designated heritage assets specific policy is provided in that a balanced judgment will be required having due regard to the scale of any harm or loss and the significance of the heritage asset affected.

**Local Planning Policy**

=Erewash Core Strategy 2011 – 2028 (adopted March 2014)=

5.25 The Erewash Core Strategy sets out the strategy for development across the Borough over the period 2011 to 2028. The following policies are relevant to the Site:

5.26 **Policy 3: Green Belt**

“The principle of the Nottingham-Derby Green Belt will be retained. Within Erewash, when considering proposals for development within the Green Belt, regard will be given to:

a) the statutory purposes of the Green Belt;
b) maintaining the strategic openness of the Green Belt between the towns of Ilkeston and Long Eaton and the Derby urban area;
c) ensuring the continued separation of neighbouring towns and rural settlements within Erewash Borough;
d) safeguarding valued countryside; and
e) preserving the setting and special character of Erewash towns and rural settlements.”

5.27 **Policy 7: Regeneration**

“Regeneration in Erewash will be primarily focused in the following locations:

In the Ilkeston urban area, through the redevelopment of the Stanton Regeneration Site, to create a new sustainable neighbourhood. This will provide for ……additional and enhanced green infrastructure……”

5.28 **Policy 8: Housing Size, Mix and Choice**

“3. The appropriate mix of type and density within housing development will be informed by:

A) area character…..”

5.29 **Policy 10: Design and Enhancing Local Identity**

“1. All new development should be designed to:

a) make a positive contribution to the public realm and sense of place;
b) create an attractive, safe, inclusive and healthy environment;
c) have regard to the local context and reinforce valued local characteristics; and
2. Development will be assessed in terms of its treatment of the following elements:

   f) impact on the amenity of nearby residents or occupiers;
   h) the potential impact on important views and vistas, including of townscape, landscape, and other individual landmarks, and the potential to create new views.

3. Outside of settlements, new development should protect, conserve or where appropriate, enhance landscape character. Proposals will be assessed with reference to the Derbyshire Landscape Character Assessment”

5.30 Policy 16: Green Infrastructure, Parks and Open Space

“A strategic approach to the delivery, protection and enhancement of Green Infrastructure will be taken through the establishment of a network of Green Infrastructure corridors and assets,......

The approach requires that:

   a) existing and potential Green Infrastructure corridors and assets are protected and enhanced. Priority for the location of new or enhanced strategic Green Infrastructure will be given to locations for major residential development identified in Policy 2...
   c) developments proposed through the Core Strategy should enhance the Strategic Green Infrastructure network;
   d) links to and between the Green Infrastructure network will be promoted to increase access, especially in areas of identified deficit, for recreational and non-motorised commuting purposes, and to allow for the migration of species;
   and
   e) Landscape Character is protected, conserved or enhanced where appropriate in line with the recommendations of the Derbyshire Landscape Character Assessment.

3. New or enhanced Green Infrastructure corridors and assets should be as inclusive as possible and multifunctional, looking to make provision for more than one of the following:

   a) access to employment and leisure facilities and to Green Infrastructure corridors or assets and the countryside;
   f) enhancement of landscape character; and
   g) protection or enhancement of heritage assets and their settings.”

5.31 Policy 20: Stanton Regeneration Site

“1. The Stanton Regeneration site, located to the south of Ilkeston, is allocated as a strategic site for the development of a sustainable new neighbourhood, in accordance with the spatial strategy set out in Policy 2.
2. The site as identified on the Erewash Borough Policies Map will include provision for the following:
   b) land for a range of new employment uses, including:
      i) a business park of about 10 hectares within a feature setting, utilising existing buildings of townscape value and features of landscape value where possible;
   d) a strategic area of green infrastructure to include:
      i) a wildlife corridor linking the Nut Brook Valley with the Erewash Valley; ii) an area of at least 20ha to provide a destination wild space and informal recreation area to serve the needs of both the new sustainable neighbourhood and the wider community;
   e) the inclusion of other areas of open space within the development to achieve a high quality residential and business environment and to restore the landscape character of the Dale;
   f) provision of and improvements to cycle and pedestrian infrastructure to maximise the opportunities for sustainable travel within the site and to access adjoining areas, particularly Ilkeston town centre.”

Erewash Borough Local Plan - ‘saved’ policies 2005

5.32 The Erewash Borough Local Plan sets out the policies and proposals for development and land use in the Borough. In accordance with the Planning and Compulsory Purchase Act, from the 28th September 2007 only certain policies from the Local Plan have been 'saved' for continued use. Appendix A, Figure 5.1: Site Context Plan illustrates the Local Landscape Planning Policies relevant to the Site. The Site falls predominantly within land allocated under Employment Policy E4 'Stanton Ironworks Regeneration'.

5.33 Following the adoption of the Erewash Core Strategy 2011 – 2028 in March 2014, the Erewash Borough Local Plan was amended in 2014 to include only those saved policies that are to remain adopted. The following saved polices remain relevant to the Site:

5.34 Policy H12: Quality and Design:
   “In considering applications for housing development, the borough council will require that the proposals:
   1. Are in scale and character with their surroundings;
   2. Have regard to distinctive landscape features and provide supplementary landscaping where appropriate, particularly where the development is visually prominent or situated on the established urban fringe;
   3. Provide adequate amenity space for each Dwelling;
4. An acceptable standard of privacy within private garden areas is achieved by visually appropriate boundary treatment;
5. Are located so as to avoid being unduly affected by noise or smells from nearby uses that would be expected to generate such effects.”

5.35 Policy EV5, relating to development control within Conservation Areas states that:
“Proposals to alter or extend unlisted buildings of architectural, historical, landscape or townscape value will be considered against the need to ensure the preservation of those elements of buildings which contribute towards the particular character of the conservation area. Alterations to existing shop fronts, including the addition of internal and external illumination will not be permitted where this will have a detrimental effect upon the character or appearance of the buildings or the conservation area. The replacement of historic shop fronts will not be permitted.”

5.36 Policy EV6 relating to Listed Buildings states that:
“Buildings listed by the secretary of state for culture, media and sport as being of architectural or historic interest will be protected from inappropriate alteration and unsympathetic development which could harm their character or setting. Listed building consent will not be granted for the demolition or inappropriate alteration or the removal of important internal or external features, of listed buildings. Planning permission will only be permitted for the change of use or conversion of a listed building where full details of design, materials, and impact on its setting of such a use has been submitted, where the change of use is vital to ensure the preservation of the listed building without loss of its character, and where the change of use will not be detrimental to local amenities.”

5.37 Policy EV14 relating to protection of trees and hedgerows states that:
“Planning permission will not be given for development which would destroy hedgerows, areas of woodland, ancient woodland, trees protected by a tree preservation order, or trees in a conservation area unless their removal would:
1. Be in the interests of good Arboricultural Practice; or unless
2. The proposed development outweighs the amenity and conservation value of the protected trees, woodlands or hedgerows. If the removal of a hedgerow or one or more trees is permitted as part of a development, a condition may require that a replacement hedgerow or an equivalent number or more new trees be planted either on or near the site. Where trees are to be retained, planning permission will not be granted for development, including
buildings, roads, pavements and underground services which will adversely affect the health of the trees.”

5.38 Policy EV16 relates to Landscape Character and states that:
“Development should recognise and accord with the landscape character within which it is located having regard to.....height of buildings, roof design, landscaping...being appropriate for the location of the development.”

5.39 Policy GB1: Green Belt states that there will be a presumption against inappropriate development within Green Belt, unless inappropriate development can be justified. It is stated that permission will only be granted for “new development on previously developed or brownfield land which represents infilling or consolidation provided the proposals satisfy the criteria in Policy GB2” and for “the re-use of existing buildings provided the proposals satisfy the criteria of Policies GB3, GB4 and GB5”.

5.40 Policy GB2: Development within Settlements acknowledges that limited infilling within settlements washed over by Green Belt will be allowed provided the following criteria are satisfied:
“It is located within the built up framework of a settlement;
The proposal represents either consolidation within existing built up framework without intruding into the open countryside or the infilling of a small gap in an otherwise substantially built up frontage;
The development is of a scale and design which respects the character of the settlement and the surrounding countryside; and
The proposed development is appropriate to the Green Belt setting and does not have an adverse impact on the settlement.”

5.41 Policy GB3: Replacement Dwellings states that replacement of an existing building will permitted provided the replacement building is not materially larger than the dwelling it will replace and the replacement is of a design, character and materials in keeping with the local area and does not harm the character or openness of the Green Belt.

5.42 Policy GB4 and GB5 make reference to alterations, extensions and conversions of buildings within the Green Belt and so do not related to the Proposed Development.

Supplementary Planning Guidance

5.43 The following two Supplementary Planning Documents have been referred to in developing proposals for the Site:
This document provides a summary of the landscape character areas within Erewash Borough and provides landscape design guidance to assist Erewash Borough Council in reviewing development proposals and ensuring a high quality of landscape design appropriate to the local landscape characters.

This document sets out generic design principles to promote sustainable development within the Borough. The guidance focuses on ensuring an understanding of the Site context and appreciating site characteristics, constraints and opportunities which will assist in creating a sense of place and own identity for new developments. The document highlights the need to identify existing site features and to allow them to influence the proposals and to fully consider the effect of the proposals on existing trees, hedges and boundary treatments.

The Design and Access Statement accompanying the application provides more detail on how the above Supplementary Planning Guidance has informed the proposals on the Site.

The Green Space Strategy provides guidance and objectives with the aim of ensuring a diverse network of attractive and welcoming green spaces which will be well maintained and will attract users and enhance the quality of life for those who live, work and play in Erewash.

As part of the Strategy, Erewash have carried out a Green Space Audit which assesses the current quality and distribution of open space across the Borough.

One of the key policy recommendations provided within the Strategy is the need to examine the opportunities for the provision of additional parks and improved accessibility in all parts of the Borough.

Furthermore the Strategy identifies the need for green spaces to be multi-functional and to provide opportunities for the inclusion of public art.

Within the Strategy Action Plan, Erewash identify the opportunity to add value to the Erewash Canal by promoting the towpath as a pedestrian and cycle route which could link green spaces.

The Design and Access Statement accompanying the Application provides more detail on how the above Supplementary Planning Guidance has informed the landscape strategy for the Site.
Discussion

5.53 In summary, the Proposed Development will need to respond to the planning policies above, particularly with regards to the consideration of any effects on the settings of Conservation Areas and Listed Buildings within the Study Area and the overall aspirations of the emerging Core Strategy. The objectives of the Green Belt land in this locality will need to be considered for the western parts of the Site. The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open and therefore the essential characteristics of Green Belts are their openness and their permanence. Consideration of the aims and objectives of Green Belt policy (i.e. retention of its key characteristics of openness and permanence) will be required, having particular regard to the western extent of the Application Site.

5.54 In considering the Application at a local scale, particular attention will be paid to the effect on sensitive landscape features within the Site, the overall visual amenity and quality of the new development, its effect on local landscape character and its contribution to the network of green spaces and biodiversity assets in the Borough.

Assessment Methodology

5.55 The landscape and visual impact assessment has been prepared in accordance with the guidelines set out in the Landscape Institute and Institute of Environmental Management and Assessment’s “Guidelines for Landscape and Visual Impact Assessment” (Spon Press 2002). The methodology for the landscape and visual appraisal is set out in Appendix A, Appendix 5.3. Landscape impact assessment, in common with any assessment of environmental effects, includes a combination of objective and subjective judgements and it is therefore important that a structured and consistent approach is used.

Limitations, Constraints and Assumptions

5.56 In undertaking the Landscape and Visual assessment of the Site and wider surrounding area, there are a number of limitations and constraints affecting the outputs from this work. These include:

- The baseline assessment has been based on information readily available at the time of undertaking the assessment using sources listed in the methodology – Appendix A, Appendix 5.3;
- During site visits, weather conditions, the time of day and seasonal factors have influenced the visual assessment and photographic record of the Site. Every effort has
been made to ensure that the photographs and their locations are “representative” of the Site and its surroundings;

- Access to assess the predicted visual effects from private individual properties outside the Site has not been obtained with the assessment of likely visual effects made from vantage points and representative views taken from the nearest available public viewpoint.

5.57 In undertaking the assessment of landscape and visual effects of the Proposed Development, the following assumptions have been made:

- That the establishment and growth rates for the landscape mitigation proposals are based on established forestry (Forestry Commission / Enterprise) methods and it is assumed that new planting of trees will achieve a height 10 metres after 10 - 15 years unless planted as semi – mature specimens;
- That the implementation of the landscape/habitat creation proposals as set out in the Landscape Strategy section of the Design and Access Statement, will be phased and implemented either in advance (where possible) or immediately at the end of construction works or phase it relates to.

Baseline Information

5.58 The initial step in any landscape or visual impact assessment is to review the existing landscape and visual resource in the vicinity of the proposed development. The data collected will form the basis from which the magnitude and significance of the landscape and visual effects of the development may be identified and assessed. The purpose of the baseline study is to record and analyse existing landscape features and characteristics, and the value or importance of the landscape and visual resources in the vicinity of the proposed development. Subsequent field survey work, including the assessment of the approximate visibility of the Site as existing (its Zone of Visual Influence), identifies and records specific sensitive receptors.

5.59 Landscape effects include the direct and indirect impacts of the development on individual landscape elements and features, as well as the effect upon the general landscape character and quality of the surrounding area. Visual effects consider the changes in the character of the available views resulting from the development and changes in the visual amenity of the visual receptors (which includes residents, users of public open spaces, public rights of way, roads and railways). A study has been carried out which systematically identifies all the visual receptors with the potential to obtain significant adverse effects resulting from the
Proposed Development and seeks to assess the significance of effects resulting on these receptors, including the magnitude of change and significance of effect. These have been recorded systematically within Appendix D, Appendix 5.5: Revised Visual Effects Table appended to this chapter.

**Landscape Context (Refer to Appendix A, Appendix 5.1: Site Context Plan)**

5.60 The Site is located approximately 1km to the south of the town of Ilkeston and 0.5km to the north of the village of Stanton by Dale. The Erewash Canal and the Chesterfield to Leicester freight railway line define the eastern boundary. The M1 motorway is located within 100m of the Site’s eastern corner.

5.61 The land to the north of the Site contains the Quarry Hill Industrial Estate which abuts Ilkeston’s residential area of Hallam Fields to the north. Residential areas of Kirk Hallam and Trowell are located to the west and east of Ilkeston’s urban area respectively.

5.62 The Site is bound to the west and south by the open countryside associated with the Green Belt land which extends approximately 5km to the south west towards the urban edge of Derby.

5.63 Land immediately to the south east of the Site is allocated as Green Belt but includes the M1 Motorway and Chesterfield to Leicester railway line corridors. The urban edge of Stapleford abuts the M1 Motorway within 500m of the Site’s eastern boundary. The Green Belt land extends towards the north east for approximately 4km beyond the village of Trowell towards the western urban edge of Nottingham.

**Topography**

5.64 The topography surrounding the Site is described with reference to Appendix A, Appendix 5.1: Landscape Context.

5.65 The landscape between Derby and Nottingham is undulating with broad valleys and prominent hills and ridgelines. The Site is located within the flat low-lying landscape (40m to 60m AOD) which forms part of the system of valleys associated with the River Erewash. The River runs in a north south direction and is fed by the Nut Brook and Boundary Brook from the west and east respectively. This system of broad valleys is strongly defined by a series of locally prominent ridgelines.

5.66 Within the study area the land rises from the Erewash valley floor at approximately 40m AOD to approximately 90m AOD at the Cat and Fiddle Windmill to the west and to approximately 90m AOD at central Ilkeston to the north. Towards the east, beyond the M1,
the land rises beyond the village of Trowell to highpoints of approximately 90m AOD at local
knolls at the end of a major ridgeline which continues to rise towards the north east.

5.67 To the south the land rises gradually towards the Stanton by Dale ridgeline at 90m AOD and
then continues to rise towards the south towards Risley at 125m AOD.

5.68 The Chesterfield to Leicester railway line tends to follow the alignment of the Erewash river
valley. In contrast the M1 Motorway cuts across the undulating landscape and has resulted
in significant areas of cut and fills along its length.

5.69 In conclusion the following topographical features are prominent within the Study Area and
contribute to the extent to which the Site is visible in the landscape:

- The Stanton-by-Dale ridgeline;
- The Dale Abbey Valley;
- The Kirk Hallam Ridgeline;
- The Nut Brook Valley;
- The Ilkeston Ridgeline
- The Trowell and Stapelford knolls;
- The Erewash Canal valley;
- The M1 corridor.

Vegetation

5.70 Vegetation surrounding the Site is described with reference to Appendix A, Appendix 5.1: Site Context Plan. Significant copses and blocks of woodland are limited but are generally focussed to the elevated slopes of the ridgelines described above. Significant woodlands visible along the ridgelines include Lady Wood, Grange Wood, Bramcote Hill and Waterloo plantation to the west, north, east and south respectively. Significant tree belts and scrub areas tend to follow the water courses within the valley floors and the corridors associated with the M1 and the railway line. Field boundaries are defined by hedgerows with scattered mature trees and tree belts.

Ancient Woodland

5.71 There are no areas of Ancient Woodland within the Site. Thacker Wood is Ancient Woodland located within 200m of the Site’s western boundary.

5.72 Other areas of Ancient Woodland within the Study Area include Moat Wood, Lady Wood, Hermit’s Wood and Grange Wood.

Tree Preservation
5.73 There are three trees covered by Tree Preservation Orders (TPOs) within the Site. These include two Horse Chestnuts and one Copper Beech along Low’s Lane at Lynn-Onn, as indicated on Figure 5.3: Site Appraisal Plan.

Listed Buildings

5.74 There are no listed buildings within the Site; however there are a number of Listed Buildings within the wider landscape. These are predominantly located within the villages of Dale Abbey, Stanton by Dale and Trowell and within the town centres of Ilkeston and Stapelford.

5.75 Listed Buildings within 500m of the Site’s boundary include the following:

- The New Stanton Cottages are located along Sowbrook Lane along the Site’s central northern boundary. The Cottages are excluded from, but surrounded by, the Site’s boundary. They include 12 Grade II Listed workers’ cottages built by the Stanton Ironworks in 1848.
- Grove Farmhouse is a Grade II Listed Building (dated 1788) located adjacent to the Site’s south western boundary along Dale Road.

5.76 Several listed buildings are located within the village of Stanton by Dale. These include the Church of St Michael and All Angels (Grade II*); Middlemore Almshouses (Grade II); numbers 29 and 16-24 Stanhope Street (Grade II) and the Village Pump (Grade II).

5.77 Listed Buildings within the study area which currently form visual landmarks in the landscape include:

- St Michael and All Angels Church at Stanton by Dale;
- The Tower of St Bartholomews Church at South Ilkeston;
- St Mary’s Church at Ilkeston;
- The Cat and Fiddle Windmill.

Scheduled Monuments

5.78 There are no Scheduled Monuments (SM) within the Application Site. Dale Abbey is a SM located within a valley approximately 2.5km to the west of the Site.

Conservation Areas

5.79 There are two Conservation Areas within the vicinity of the Site. Stanton-by-Dale is located immediately to the south of the Site boundary. The Erewash Borough Council’s Conservation Area Character Appraisal (revised February 2011) describes the location and setting of the Conservation Area and identifies is as being on an escarpment which overlooks the Nutbrook Valley and the former Stanton Ironworks within the valley floor. Furthermore the Character
Appraisal identifies the following views into and out of the Character Area which are relevant to the Site

“When the village is approached from Littlewell Lane, one is afforded a dramatic glimpse across open fields toward the parish church at the top of the slope…”

Despite its acreage, the former Stanton Ironworks is not visible from within the village. A panoramic view of the site can be afforded from the field adjacent to the churchyard.”

Other Heritage Assets

5.80 The Archaeology and Cultural Heritage Section of this Environmental Statement provides a summary of the history of the Site and makes reference to features within the Site which are not Listed but do have heritage value. The Design and Access Statement provides detail of the historic buildings which have been retained in the masterplan as heritage assets.

Public Rights of Way (PROW)

5.81 Low’s Lane, Littlewell Lane, Sowbrook Lane, Ilkeston Road and Seven Oaks Road are public roads which are included within or abut the Site boundary.

5.82 There are five public footpaths and one Sustrans cycle route (National Cycle Route 67) within the Site Boundary. The cycle route follows the Site’s eastern boundary and then follows the route of the dismantled railway line to the south of Ilkeston. These public rights of way are indicated and on Figure 5.3: Site Appraisal Plan.

5.83 PROWs in the locality of the Site are shown on the Figure 5.1: Site Context Plan. Generally the PROW network is extensive and responds to the undulating topography to allow for access to the elevated ridgelines in the study area.

Landscape Character

5.84 The Landscape Character Assessment approach is a descriptive approach which seeks to identify and define the distinct character of landscapes that make up the countryside of England. This approach recognises the intrinsic value of all landscapes, not just ‘special’ landscapes such as Areas of Outstanding Natural Beauty. The description of each landscape is used as a basis for evaluation in order to make judgements to guide, for example, landscape management or development. In line with this approach national landscape guidance is now moving from concentrating efforts on designating and protecting those areas of the countryside which are most important for landscape and wildlife (i.e. the quality approach) to a character approach, as a way of enriching the quality of the whole countryside whilst accommodating appropriate development. This approach complements the protection that designations may offer.
The following descriptions of landscape character within the study area form a hierarchy of assessment. The descriptions start at a national level, then move through regional and district scales leading to detailed descriptions of the landscape character which applies to the Site and its surroundings and against which the Proposed Development can be considered. These are not intended to be an exhaustive list, but highlight those aspects of landscape character associated with the Site which need the most careful consideration.

National

Natural England has produced a Countryside Character Map of England which includes broad-brush descriptions of the different character areas. Natural England is in the process of updating these character area descriptions. The Site lies within updated National Character Area (NCA) 38: Nottinghamshire, Derbyshire & Yorkshire Coalfield. The relevant key characteristics of this area include the following:

“A low-lying landscape of rolling ridges with rounded sandstone escarpments and large rivers running through broad valleys, underlain by Pennine Coal Measures;
Local variations in landscape character reflecting variations in underlying geology;
Several major rivers flow through the rural and urban areas of the NCA, generally from west to east in broad valleys;
A mixed pattern of built-up areas, industrial land, pockets of dereliction and farmed open country;
Small, fragmented remnants of pre-industrial landscapes and more recent creation of semi-natural vegetation, including woodlands, river valley habitats and subsidence flashes, with field boundaries of clipped hedges or fences;
Many areas affected by urban fringe pressures creating fragmented landscapes, some with a dilapidated character, separated by substantial stretches of intact agricultural land in both arable and pastoral use;
Widespread influence of transport routes, including canals, roads and railways, with ribbon developments emphasising the urban influence in the landscape; and
Continuing development pressure including land renewal and regeneration projects, especially along river corridors and around towns.”

Under the ‘Description’ section, the following is relevant to the Site location and Proposed Development:
“Pressure from development for housing, commerce and industry continues to impact on the character of the area and is likely to detract further from other landscape features and lead to a continued loss of tranquillity.

There are significant urban fringe pressures affecting the countryside, including greenbelt around villages, towns and cities. This, along with fragmentation of viable holdings, makes farming difficult. Some rural buildings are being sold off, usually for conversion to residential use, which results in a degree of suburbanisation of the countryside.”

5.88 Under the ‘Statements of Environmental Opportunities’ section the following statements is relevant with regards to the Site and its context:

“SEO1: Restore and enhance existing areas and create new landscapes through the inclusion of woodland and networks of green infrastructure to raise the overall quality of design and location of new developments. Regeneration and restoration of industrial sites should seek to create green infrastructure that links fragments of the natural environment, leading to functioning network for wildlife and access and recreational amenities for people.”

5.89 The NCA goes on to list a number of methods by which the objectives of SEO1 could be achieved, including the following:

“Reclaiming and restoring areas of contaminated and degraded land to create new post-industrial landscapes through the creation of habitats to strengthen local habitat networks and provide opportunities for recreation for local populations, while retaining links to industrial heritage;

Creating new landscapes that are sympathetic to the local landscape character.....;

Ensuring that new development is located and designed with particular consideration for keeping important open views, and using tree and shrub planting of native species to assist in assimilating built structures, especially in urban fringe areas outside major urban areas such as Derby and Nottingham; and

Creating new recreational opportunities within developing landscapes in response to the Yorkshire and Humber Green Infrastructure Framework and the 6Cs Green Infrastructure Strategy, improving the quality of the environment for local residents and providing ‘places to escape from it all’ and easy access routes close to centres of population.”

5.90 Under the Landscape Change section, the following is stated in regard to Settlement and Development:
“There is continued expansion of housing and light industry, putting a lot of pressure on the green belt (64 per cent of the area). Many new developments are of standard design and do not reflect local styles or building materials.”

5.91 The following is stated in regard to Other Key Drivers:

“Growth corridors.... will bring development pressures, but also opportunities for incorporating improved green infrastructure, more sustainable public transport links and walking /cycling routes.”

5.92 The Landscape Character Assessment of Derbyshire was undertaken in 2004 and divides the Nottinghamshire, Derbyshire & Yorkshire Coalfield Landscape Character Area, described above, into a series of Landscape Types. In this study the Site is identified as in the Coalfield Village Farmlands Landscape Type, relevant extracts from which are included in Appendix A, Appendix 5.4 and include the following primary key characteristics:

“Gently undulating landform;
Dairy farming with pasture and localised arable cropping;
Relict ancient semi-natural woodland, copses and linear tree-belts;
Dense streamline trees and scattered hedgerow trees
Towns and villages on ridge lines surrounded by remnant medieval strip fields;
Network of small irregular lanes between larger urban roads; and
Small villages with sandstone buildings expanded by red brick former mining terraces and ribbon development”

5.93 The following planting and management guidelines are provided for the Coalfield Village Farmlands:

“Small scale woodland planting;
Re-establish and enhance physical links between existing isolated woodland and hedgerows;
Ensure the management and enhancement of hedgerow trees - through selection and natural regeneration, or by planting.
Encourage the management of scrub and secondary woodland to link with existing habitats and woodland;
Enhance the visual and ecological continuity of river corridors by management, natural regeneration and planting of riparian trees; and
Ensure the conservation and management of mature/veteran trees within hedgerows.”
In summary the character of the Site is typical of the Nottinghamshire, Derbyshire & Yorkshire Coalfield National character area with the majority of the Site being characterised by post or present industrial activities and the associated infrastructure, processing and storage facilities. As a result of the large scale industrial activities and clearance on the Site the general character is exposed with a low sense of enclosure and a lack of coherence or pattern of elements. Any sense of enclosure within the Site is restricted to where existing tree belts and woodland have become established, however the landscape character sensitivity in these areas remains affected by the adjacent urban and industrial features such as the Quarry Hill Industrial Estate, and the Stanton Bonna Concrete Pipe Works Site. The condition of the landscape is generally moderate to low as a result of the previous developments on the Site. The landscape value of the Site is moderate to low due to its historic relevance to the Derbyshire Coalfields. The landscape character sensitivity of the Site is subsequently assessed as moderate to low.

Site Appraisal

As shown on Figure 5.3: Site Appraisal Plan, the Site comprises approximately 188 hectares of land associated with the former major Stanton industrial ironworks. Whilst much of the Site is characterised by areas of hardstanding and infrastructure, a network of woodlands, tree belts, hedgerows and watercourses have been retained or established within parts of the Site. Site Appraisal Photographs A to J are used to describe the landscape features within the Site boundary.

A tree condition survey was undertaken by Ruskins in April 2012. This reveals that vegetation within the Site is predominantly comprised of self-seeded trees and tree belts or groups with two small areas of woodland in the vicinity of the Nutbrook Canal and some ornamental planting around the central offices and workshop areas. The Tree Survey is included at Appendix A, Appendix 5.6 of this chapter. In summary the following is included within the Site:

- Two Condition A woodlands adjacent to the Nutbrook Canal and pond within the north western parts of the Site. The woodlands are dominated by oak and include ash, willow and sycamore. The understorey is made up of various species, including elder and hawthorn;
  - Eleven Condition B trees within the Site (including willow, oak, ash and sycamore);
  - Twenty five Condition B tree groups of mixed species across the Site;
  - Twenty eight Condition C trees and one dead tree;
  - Seventy one Condition C tree groups.
5.98 The land to the west of Littlewell Lane contains a large spoil heap and an established network of tree belts and woodlands and occasional small ponds. The majority of tree belts are focussed along the Site’s western boundary and the boundaries with Sowbrook Lane and Ilkeston Road. Site Appraisal Photograph A is taken from partway up the spoil heap looking across the western parts of the Site and illustrates the mature tree belts along the Site’s boundaries. Site Appraisal Photograph B is taken from adjacent to one of the disused access roads within the derelict site and illustrates the extent to which scrub and tree belts have established within the Site. Boundary vegetation along Sowbrook Lane is well established. Glimpses of the rooftops of New Stanton Cottages 1 – 12 are visible on the skyline. The vegetation within this part of the Site is well established and in good condition, providing a strong landscape framework and effective western boundary to the Site.

5.99 The land to the east of Ilkeston Road is enclosed by a network of tree belts and woodland associated with a large former cooling pond and the Nutbrook Canal. Site Appraisal Photograph C is taken from the public footpath adjacent to the Canal illustrating the mature vegetation along the canal bank. The canal is culverted for the majority of its length within the Site. Occasional cooling ponds and short stretches of the open canal are indicated on the Site Appraisal Plan to the north of Low’s Lane. The majority of the landscape to the north and south of Low’s Lane is dominated by hardstanding and overgrown areas associated with the industrial workings on the Site.

5.100 Low’s Lane is enclosed in comparison to the open industrial sites to the north and south. Site Appraisal Photograph D is taken from Lows Lane, looking west towards New Stanton Cottages 1-12. Mature tree belts either side of the road filter views into the adjacent derelict and industrial landscape.

5.101 Site Appraisal Photograph E is taken from a raised grass bank to the west of Littlewell Lane looking across the working St Gobain site to the east of Littlewell Lane. Site Appraisal Photograph F is taken from within the working St Gobain Site to the south of Low’s Lane, looking south west across the parking areas and industrial landscape towards the Stanton-by-Dale ridgeline beyond. A cluster of red brick buildings (including the St Gobain Head Office complex, the exhibition building, two small terraces of residential properties and other various garage and storage buildings) are located along the central lengths of Low’s Lane. Site Appraisal Photograph G is taken looking towards additional buildings at the junction of Low’s Lane and Seven Oaks Road. These buildings include Jubilee House Christian
School and the Nursery. Mature tree belts and roadside hedgerows along the remainder of Low’s Lane and Littlewell Lane filter views into the adjacent working / derelict sites.

5.102 The north eastern section of the Site is predominantly open cleared land sub-divided by the established tree belt associated with the dismantled railway line. Spoil heaps are located to the west beyond the dismantled railway. Site Appraisal Photograph H is taken at Low’s Lane, adjacent to the access to the William West Distribution Site looking across the open cleared site.

5.103 Site Appraisal Photograph J is taken from the top of the bund associated with the former slag crushers and stock yard. The M1 corridor is visible in the left of the view with the Erewash Canal and towpath adjacent but set down in the landscape adjacent to the Site. There is little vegetation within the eastern parts of the Site, allowing for views across the large scale warehouses associated with the William West Distribution Centre and the Quarry Hill Industrial Estate.

5.104 The topography across the Site is relatively flat, dropping from approximately 60m AOD along the lower slopes of the Stanton by Dale ridgeline along the southern boundary to approximately 40m AOD along the northern boundary adjacent to the Nutbrook Canal and along the eastern boundary adjacent to the Erewash Canal. Local undulations are evident across the Site and relate to areas of localised cut and fill relating to the works on site. Prominent soil heaps are located at the Grove Farm Tip in the far western and at the former slag crusher and stock yard to the far east. A series of ponds and ditches, predominantly associated with the former cooling works, are located within the Site, as indicated on Figure 3. The Nut Brook and the Nutbrook Canal are partly included within the Site to the north.

Site Appraisal Summary

5.105 The vegetation within the western part of the Site (to the west of Littlewell Lane) is generally mature and well established, albeit somewhat inconsistent. Although a relatively new landscape which was created as a result of its former use as an industrial site, it does however provide a sense of enclosure and screening along the Site’s western boundaries.

5.106 Similarly vegetation to the east of Ilkeston Road and adjacent to the Nut Brook and Nutbrook Canal is mature, well established and somewhat inconsistent. It does however provide a strong sense of enclosure to the canalside public footpath.

5.107 Tree belts and hedgerows along the Site boundaries are not consistent but are generally well established and in moderate to good condition and provide screening to public rights of way.
within and adjacent to the Site. Tree belts along the Site's southern boundary provide a sense of enclosure and an element of screening in views from the Stanton-by-Dale ridgeline.

5.108 Tree belts and hedgerows associated with the public rights of way within, and immediately adjacent to the Site, are well established and in moderate to good condition. They provide an element of screening along Low’s Lane, Littlewell Lane, Seven Oaks Road, Sowbrook Lane and Ilkeston Road.

5.109 The Site features within the main St Gobain Site and the cleared areas are restricted to large scale buildings, infrastructure, hard standing and storage elements. Occasional tree belts and areas of scrub are scattered through the working and cleared sites. These features are of low to moderate landscape quality and have little contribution to any sense of enclosure or screening within the landscape.

5.110 The following table provides a summary of the landscape condition, landscape value and subsequent landscape sensitivity of the features within the Site. This is based on the arboricultural survey carried out, the contribution they make to landscape character and their capacity to be replaced in the landscape:

Table 5.1: Landscape Sensitivity of Site Features

<table>
<thead>
<tr>
<th>Site Feature</th>
<th>Condition</th>
<th>Value</th>
<th>Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees with Tree Preservation Orders</td>
<td>Good</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Woodland adjacent to Nutbrook Canal</td>
<td>Good</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Condition B and C trees and tree groups within the pre-developed Site</td>
<td>Moderate to poor</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Condition B and C trees and tree belts along the Site boundaries and adjacent to public rights of way</td>
<td>Moderate to poor</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Hedgerows along the Site</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
**Visual Appraisal**

5.111 A visual appraisal has been undertaken to determine the relationship of the Site with its surroundings and its visibility within the wider landscape. An assessment of the visibility of the Site from existing properties, roads, footpaths and public open space was carried out in January and March 2012, with a set of annotated photographic panoramas. These are included in the supporting illustrative material at Appendix A, Appendix 5.2. These photographs illustrate the current appearance of the Site and its surroundings and were taken from areas to which the public gain access. This also represents the ‘worst case scenario’ with regard to screening afforded by intervening vegetation with the majority of such vegetation within the landscape bare.

5.112 In the sections which follow the character and visibility of the Site are described. Figure 5.4: Visual Appraisal Plan at 1:10,000 scale illustrates the location of the photographic viewpoints.
and identifies the key views towards and into the Site from properties, roads and PROWs within the surrounding landscape. The potential visibility of the Site is largely determined by topographical variation and landcover as ridgelines and areas of woodland, tree belts or built form within the landscape contribute towards blocking, filtering or controlling views.

5.113 The effectiveness of vegetation as a screen depends to a considerable extent on its scale. A large mature feature, such as the collection of trees contributing to an area of woodland will provide more significant cover throughout the year, but a hedge or an intermittent tree belt may only be effective during the summer months. Smaller features, such as hedgerows and individual trees can also provide value when their cumulative effect is taken into account.

5.114 An assessment of the visibility of the Site within its surroundings was carried out in accordance with the GLVIA 2nd edition (2002) to determine the likely nature of public and private views. (Note: the updated 3rd edition of the Guidelines for Landscape and Visual Impact Assessment, GLVIA, was published in April 2013, after the date of the site visit and visibility assessment. However, recommendations for assessing the visibility of a site are broadly similar between the 2nd edition and the 3rd edition). As part of this exercise, a series of panoramic photographs were taken from potential public vantage points, including public roads, footpaths and bridleways around the Site. A summary of the visual appraisal is shown on Figure 5.4: Visual Appraisal Plan, and this drawing demonstrates the features which control views towards the Site from surrounding areas. The buildings and structures, such as large scale sheds and boundary treatments associated with the adjacent industrial estates and the surrounding landscape also act as visual barriers, curtailing views towards the Site.

5.115 There is, in most visual appraisals, a continuum of degrees of visibility ranging from no view of the Site to full, open views. To indicate the degree of visibility of the Site from roads, PROWs and properties, three categories of visibility have been used in this assessment:

(a) No / Truncated view: Views towards the Site are curtailed by visual barriers, such as vegetation or built forms;
(b) Partial view: A view of part of the Site or a filtered view of the Site, or a distant view in which the Site is perceived as a small part of the view; and
(c) Open view: A clear view of a significant proportion of the Site within the wider landscape.

5.116 Figure 5.4: Visual Appraisal Plan shows where open and partial views into and across the Site are obtained. The areas and properties which are likely to obtain views towards the Site
have been identified. Appendix D, Appendix 5.5 Visual Effects Table provides a summary of the visual receptors.

i) Near Distance Views (0 – 300 metres)

5.117 Site Context Photograph 1 is taken from Low’s Lane looking south. Existing tree belts along Low’s Lane are visible in the left of the view and define the boundary to properties fronting onto the junction of Littlewell and Low’s Lane and the entrance to the industrial works site. New Stanton Cottages are visible in the right of the view adjacent to substantial tree belts and roadside hedgerows which contain Low’s Lane. The Site is the dominant feature within the view.

5.118 Site Context Photograph 2 is taken from the Erewash Canal towpath looking west towards the Site. Vegetation to the west of the Canal is visible in the left of the view and forms the Site’s eastern boundary. Railings along the Canal’s western back are central to the view adjacent to the Sustrans Cycleway. Works associated with the Quarry Hill Industrial Estate are visible in the right of the view. Gaps in the vegetation along the Canal allow for partial views into the Site. The Site is one of several elements in the view.

5.119 Site Context Photograph 3 is taken from the public footpath St FP 7 as it approaches the Site from Seven Oaks Road. The footpath is enclosed woodland planting which filters views towards the Site.

5.120 Site Context Photograph 4 is taken footpath IL FP 49 looking south towards the Site. The elevated urban edge of Hallam Fields is visible in the left of the view with Sowbrook Farm and tree belts along Sowbrook Lane visible in the foreground. Tree belts along the Site’s northern boundary are visible beyond in the middle of the view with the stack and concrete mixing plant at the Stanton Bonna Site visible in the background. The western spoil heap breaks the skyline in the view with the Stanton-by-Dale ridgeline and St. Michael’s Church visible beyond to the left and Stanton Grove beyond to the right. The high voltage pylons and electricity poles cut through the valley. The Site and its features are the dominant features in the view.

5.121 Site Context Photograph 5 is taken from public footpath St FP 11 looking north towards Ilkeston. The western spoil heap and adjacent tree belts are visible to the right of Thacker Wood in the left of the view. The developed ridgeline of Kirk Hallam is visible to the right of the spoil heap. St. Mary’s Church is visible on the skyline to the right of Kirk Hallam. The spoil heaps, pipe storage areas and concrete mixing plant at the Stanton Bonna Site are visible in
the foreground with the Site and the industrial areas of Ilkeston visible beyond. The land rises up to the right towards the Stanton-by-Dale ridgeline.

5.122 Site Context Photograph 6 is taken from public footpath St FP9 along the upper north facing slopes of the Stanton-by-Dale ridgeline looking north across the Site towards the urban edge of Ilkeston. The stacks and concrete mixing plant at the Stanton Bonna Site are visible in the left of the view. The pipe storage area at the St Gobain site is visible to the right with the Quarry Hill Industrial Estate visible beyond. The warehouse associated with the Wiliam West Distribution Centre is visible beyond the intervening field boundary hedgerows with Stapleford Hill and Bramcote Hill visible beyond on the skyline. In the right of the view Middlemore Cottages and St Michael’s Church are visible.

ii) Middle Distance Views (300m – 1 Kilometre)

5.123 Site Context Photograph 7 is taken from public footpath St FP6 looking north. Properties at Stanton-by-Dale are visible in the left of the view with the stacks and mixing plant at Stanton Bonna visible beyond the vegetation along Littlewell Lane. The Site is central to the view with the tree belts along the Site’s southern boundary filtering views to the southern parts of the Site. Beyond the Site the developed ridgeline of Ilkeston drops away towards the Erewash Valley and the undulating Green Belt landscape beyond. Stapleford Hill and Bramcote Hill are visible on the skyline.

5.124 Site Context Photograph 8 is taken from Quarry Hill, approximately 0.5km to the south of the Site looking north. The north facing slopes of the Stanton-by-Dale ridgeline drop down to the Site’s northern boundary and the Stanton Bonna Site beyond. Tree belts along the Site’s southern boundary filters views towards the large scale buildings within the Site. The elevated Ilkeston ridgeline is visible on the skyline beyond. The boundary vegetation associated with the Erewash Valley Golf Course is visible in the left of the view.

5.125 Site Context Photograph 9 is taken from a viewing area within the Stoney Clouds Nature Reserve, approximately 0.7km to the south east of the Site. The M1 corridor and the Erewash Valley Golfcourse are dominant features in the view. The Stanton Bonna Site is visible in the left of the view beyond the evergreen tree belts along the Site’s southern boundary. The Site and its large scale sheds and industrial elements are central to the view with the built up area of Kirk Hallam visible beyond. The blue warehouses at the William West Distribution Centre are visible to the right of the Site adjacent to the M1 motorway.

5.126 Site Context Photograph 10 is taken from the Erewash Canal towpath to the south east of the Site and illustrates the extent to which the low lying landscape of the Erewash Valley and
the intervening features such as the M1 corridor result in limited views towards the Site from the lower areas to the south and south east. The William West Distribution Centre is glimpsed through the vegetation; however the Site itself is barely discernible in the view.

5.127 Site Context Photograph 11 is taken from the elevated landscape at Trowell and illustrates the open nature of views towards the Site across the landscape associated with Trowell and the M1 corridor. Open views of the William West Distribution Centre are possible with the works within the Site being central to the view. The Stanton-by-Dale ridgeline forms the skyline in these views with the built up areas of Ilkeston and Trowell visible to the right.

5.128 Site Context Photograph 12 is taken from the SUSTRANS Cycleway along the route of the dismantled railway line to the north of the Site, looking south. Intervening woodland, tree belts and hedgerows filter and block views towards the Site. The woodland adjacent to the Nutbrook Canal is central to the view. The Stanton Bonna Site is visible in the distance with the Stanton-by-Dale ridgeline visible beyond.

5.129 Site Context Photograph 13 is taken from Hedges Drive at the top of the Hallam Fields ridgeline. The William West Distribution Centre is visible in the left of the view beyond the built up area of Hallam Fields. Buildings on the Site are visible to the right of the Distribution Centre with the built up area of Stapleford and the Ratcliffe-on-Solar Power Station visible beyond. Quarry Hill Industrial Estate is visible in the centre of the view with Site and the Stanton-by-Dale ridgeline visible beyond.

5.130 Site Context Photograph 14 is taken from within the built up area of Little Hallam, approximately 0.5km to the north west of the Site. The concrete mixing plant at Stanton Bonna is visible beyond the properties at Goodwood Crescent with the Stanton-by-Dale ridgeline visible forming the backdrop in the view. The Site is difficult to perceive in the context of the wider view.

5.131 Site Context Photograph 15 is taken from St. Norbert Drive within the upper developed slopes of Little Hallam. The William West Distribution Centre, the Site and the Stanton Bonna Site are visible in the centre of the view with the developed areas of Stapleford visible beyond. The Stanton-by-Dale ridgeline forms the backdrop to the views beyond the Stanton Bonna Site.

iii) Long Distance Views (Over 1 Kilometre)

5.132 Site Context Photograph 16 is taken from Ladywood Road looking south east across the Dale Abbey valley towards the Site. The intervening topography and vegetation filters views
towards the works on the Site, however the taller works elements are visible to the left of the Grove Farm Tip Site. The Site is difficult to perceive in these distant views.

5.133 Site Context Photograph 17 is taken from the public open space in the vicinity of Trowell Estate, looking west across the landscape associated with Trowell. Residential properties at Stapleford Road and within Trowell Estate are visible beyond the open space areas. The William West Distribution Centre is visible beyond immediately left of the Site. The built up area of Trowell filters views towards the Site. The Stanton-by-Dale ridgeline forms the backdrop of views towards the Site.

5.134 Site Context Photograph 18 is taken from a public footpath within the woodland at Stapleford Hill. The William West Distribution Centre is visible in the centre of the view with the Site and its features visible beyond. The Stanton-by-Dale ridgeline forms the backdrop to the view. The urban edge of Stapleford is visible in the foreground.

5.135 Site Context Photograph 19 is taken from the Stanton-by-Dale ridgeline, from a gap in the roadside hedgerow at No Man’s Lane, approximately 1.2km to the south of the Site. High Lodge Farm is visible in the left of the view. The Site is visible in the valley in the centre of the view with development at Ilkeston behind and Kirk Hallam, Ilkeston, the ridgline at Trowell, Stapleford Hill and Bramcote Hill forming the backdrop in the views. Properties at Stanton-by-Dale are visible centrally in the foreground.

5.136 Site Context Photograph 20 is taken from within the elevated built up area of Stapleford looking north-west. The Site (adjacent to the William West Distribution Centre) is glimpsed beyond the built up area, but is barely discernible in the view.

**Lighting Sources**

5.137 The following existing sources of light are identified in the vicinity of the Site:

- Sky glow from the urban areas of Ilkeston and Stapelford;
- Street lighting along the roads within and immediately adjacent to the Site;
- Security lighting associated with the Stanton Bonna Site, the St Gobain Site, the Quarry Hill and Hallam Fields Industrial Estates and the William West Distribution Centre.
- Street lighting at Ilkeston, Kirk Hallam, Stanton-by-Dale, Trowell and Stapleford;
- Street lighting along the M1 Corridor;
- Traffic on the M1.

5.138 The light sources diminish towards the south and south west of the Site within the Green Belt landscape.
5.139 Based on the abundance of light sources in the immediate vicinity of the Site it can be concluded that the Site does not fall within an area of dark skies, however the effect of new lighting on the landscape to the west, including the Dale Abbey Valley should be considered in the assessment of effects.

**Summary of Visual Appraisal**

5.140 A visual appraisal of the Site and its surrounds demonstrates that, whilst the Site and its features are visible in several views from the elevated surrounding landscape, these views are often partially obstructed by intervening topography and vegetation and by the landscape associated with the M1 Motorway corridor, the industrial estates at Ilkeston and the built up areas of Kirk Hallam, Ilkeston and Stapleford. Views into the Site from the valley floor are filtered by vegetation within the valley floor and by the Site’s boundary vegetation.

5.141 In the near distance open views are limited to the public rights of way within the Site and along the north facing slopes of the Stanton by Dale ridgeline and from sections of the M1 motorway adjacent to the Site’s eastern boundary. Partial views of the eastern parts of the Site are possible from the Erewash Canal towpath and the Sustrans Cycleway following the route of the dismantled railway line.

5.142 In views from middle distance receptors the Site and its features are one of a number of elements in the view. Urban elements within the views include the M1, the industrial areas and urban edge of Ilkeston and the elevated built up areas of Little Hallam and Stapelford.

5.143 Over longer distance views, the Site becomes more effectively contained beyond the undulating topography and occasional copses and tree belts.

5.144 In summary, the following high sensitivity visual receptors have been considered when informing the masterplan development and establishing mitigation proposals:

- Residential properties, Listed Buildings and public rights of way adjacent to, or included within, the Site’s boundaries;
- Residential properties and Listed Buildings within the Stanton-by-Dale Conservation Area;
- Residential properties and public rights of way along the north facing slopes of the Stanton-by-Dale ridgeline to the south of the Site;
- Residential properties and public rights of way along the south east facing slopes of the Kirk Hallam and Lady Wood ridgeline;
- Residential properties along the south facing slopes of the Ilkeston built up area;
PART TWO
Geology

- Residential properties and public rights of way along the west facing slopes of the Trowell and Stapleford ridgelines; and
- Public rights of way within Stony Clouds Nature Reserve and crossing the Erewash Valley Golf course; and

The Erewash and Nutbrook Canal towpaths.

In addition views out from the Site have been considered in the development of the Masterplan. The following visual landmarks have been identified:
- St Michael and All Angels Church at Stanton-by-Dale;
- St Mary’s Church at Ilkeston;
- The Cat and Fiddle Windmill; and
- The wooded ridgelines at Trowell, Bramcote Hill and Lady Wood.

Visual Receptors

Following the Visual Appraisal exercise, sensitive visual receptors were identified and considered within the Visual Effects Table included in Appendix D, Appendix 5.5. Consultation with Erewash Borough Council was carried out to determine any additional receptors which should be considered. Each visual receptor and their corresponding sensitivity to the Proposed Development has been considered in accordance with the methodology set out in Appendix A, Appendix 5.3.

Likely Significant Effects

The site is proposed to be developed over a period of fifteen years with the phasing of works being broken down into the following:

- Years 1 to 3: Initial cut and fill operations to prepare platforms for the commencement of construction of the first residential phases and to construct a noise attenuation bund;
- Years 3 to 10: Cut and fill operations will continue in order to prepare the remaining platforms for the development of the employment phases and remainder of residential phases. Construction of six phases of residential development and three employment phases working from the centre of the Site towards the south and then towards the north;
- Years 10 to 15: Completion of cut and fill operations and development of three phases of employment working from the centre of the Site towards the east and completion of later residential phases.

The Phasing Strategy states that:

“The proposed strategy separates the greenspace areas from being intrinsically linked to the construction of the residential and business phases. This allows development and shaping of
the greenspace areas to be free of specific development timeframes. This in turn facilitates the best options for ecological enhancement and the timeframes required for establishment and translocation activities.”

5.152 Furthermore this approach ensures that landscape proposals associated with each phase of development can be implemented within the first available planting season immediately after completion of that phase of development, if not sooner depending on the detailed construction program of that phase.

5.153 For the purposes of the Landscape and Visual Impact Assessment the consideration of effects takes account of the worst case scenario, with Year 1 (Completion) considering the effect of the overall completed scheme, not taking in account the maturing of landscape features implemented as part of the mitigation proposals. The residual effects of the overall completed development are then assessed when it is assumed that all landscape mitigation proposals associated with each phase of construction have matured (25 years after completion of the overall development.)

5.154 The assessment of effects considers the effects at Completion (Year 1) and the residual effects (Year 25) of the Proposed Development, assessing the significance of landscape and visual effects both before and after mitigation measures have established. The effects at completion (year 1) present the “worst case” scenario considering, for example, winter views through intervening vegetation. The assessment considers the proposed landscape strategy which will be introduced as an integral part of the Proposed Development as described in the Design and Access Statement and at Section 3 – Proposed Development of this Environmental Statement. This “worst case” scenario will be further reduced in some instances as planting introduced during early phases of the construction process becomes established and begins to mature.

5.155 With regards to the temporary effects during demolition and construction, Section 5.3: Proposed Development of this Environmental Statement contains details of the construction period and phasing. Inevitably there will be some direct landscape and visual effects created during the construction period, mainly arising from the cranes and the buildings under construction. There will also be some indirect effects resulting from increased traffic and movement of machinery and equipment facilitating change within the Site during this period.

5.156 Construction site compounds would be used during the construction period and further compounds are likely to be needed for the storage of materials and to provide welfare
facilities for construction workers. These would include areas for parking. These features often constitute the most significant temporary visual effects of any scheme. The effects of construction must also be considered in the context of the existing built-up character and other urbanising features which contain the Site.

5.157 Permanent effects will occur once construction is complete and the Proposed Development is operational. These effects, which may be either adverse or beneficial in nature, may result from:

- Removal of site features in order to accommodate the new development
- Changes to the character and appearance of the Site;
- Changes to the character of the surrounding areas;
- Changes to views of the Site from the surrounding area; and
- The creation of new views to, and from, the Site.

**Effects on Landscape Features**

5.158 The Site contains features typically associated with construction sites such as security and office cabins, hoardings, car parking, fences, large vehicles and areas of hard standing. During construction the majority of the existing warehouses and industrial elements on the Site will be demolished and an extensive cut and fill exercise will be carried out in order to provide a consistent topography to accommodate the proposed built form.

5.159 During the cut and fill operations there will inevitably be a loss of tree belts, hedgerows and individual trees within the northern, central and eastern parts of the Site. During construction all tree belts and woodland areas within the western parts of the Site and along the Site’s northern boundary adjacent to the Nutbrook Canal, with the exception of scrub and tree belts lost to the creation of the noise attenuation bund, will be retained and protected for their wildlife and screening value. Similarly, tree belts and hedgerows along Littlemore Lane, Low’s Lane, Sowbrook Lane and along the Site’s southern boundary will be retained for their screening value in views from adjacent properties and the Stanton-by-Dale Conservation Area.

5.160 As shown in Barton Willmore Drawing L6 Noise Attenuation Bund Vegetation Removal Plan (Indicative), vegetation within the footprint of the noise attenuation bund on land between Nutbrook Canal and the cooling pond in the northern part of the Site would be removed. Subject to assessment by a suitably qualified archaeologist, the total extent of vegetation to be removed, accounting for a 9m offset from the foot of the proposed bund to allow for construction access, would be approximately 1 hectare. As noted in the baseline Site
Appraisal, this vegetation, which consists of tree belts and shrubs interspersed with small patches of scrubby grassland, is considered to be of moderate landscape sensitivity. The loss of vegetation would be mitigated by proposed planting on the sides of the bund, which would eventually replace the vegetation lost; and offset by planting elsewhere within the Proposed Development.

5.161 The three trees with Tree Preservation Orders are proposed to be retained and protected within the development. The demolition and construction works will have a negligible beneficial effect on these high sensitivity receptors.

5.162 The woodland areas adjacent to the Nutbrook Canal in the north-western areas of the Site will be retained and enhanced in accordance with detailed ecological recommendations so as to ensure long term viability of the woodland and to improve its existing condition. The long term significance of effects on the existing woodlands will be major beneficial.

5.163 Whilst the extent of vegetation loss will be apparent during construction the Proposed Development will see a substantial net gain in trees, hedgerows and woodland areas within the development site and within the open space areas, as indicated on Parameter Plan 5: Green Infrastructure Drawing No. 9505 Rev E. The retention of tree belts and hedgerows along the Site boundaries and within the western and northern parts of the Site will reduce the perceived impact in terms of landscape feature loss. There will be a high positive change to the extent of trees and tree belts within the Site with a long term moderate to major beneficial significance of effect.

5.164 Hedgerows and tree belts along the Site boundaries will be retained and enhanced as part of the Proposals so as to ensure they continue to provide screening and filtering of views from adjacent high sensitivity receptors and to maintain existing field patterns in the landscape. The significance of the effects on hedgerows and trees along the Site boundaries will be minor to moderate beneficial.

5.165 The cut and fill operations across the Site are considered in more detail elsewhere within the ES. The main works will involve the removal of the existing storage heaps to the east of the Site, earthworks associated with the opening up of the Nutbrook Canal and the fill works within the existing St Gobain Site. The western spoil heap will be enhanced in accordance with a consented planning application for landscape restoration of the land and land to the south and west of this will be the receiving Site for translocated Open Mosaic Habitat. The proposed works will result in an overall rationalising of the Site levels to provide a uniform platform to accommodate the proposed development. There will be a high positive change
to the Nutbrook Canal and associated ponds with a corresponding moderate to major beneficial significance of effect. The works to the existing spoil heaps will result in a low positive change and a corresponding minor beneficial significance of effect.

In accordance with the methodology provided at Appendix A, Appendix 5.3, the following table provides a summary of the effects of the Proposed Development on the Site features described above:

**Table 5.2: Significance of Effects on Site Features**

<table>
<thead>
<tr>
<th>Site Feature</th>
<th>Sensitivity</th>
<th>Magnitude of Change</th>
<th>Significance of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Year 1</td>
<td>Year 25</td>
</tr>
<tr>
<td>Trees with Tree Preservation Orders</td>
<td>High</td>
<td>Negligible positive</td>
<td>Negligible positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Year 25</td>
<td>Year 25</td>
</tr>
<tr>
<td>Woodland adjacent to Nutbrook Canal</td>
<td>High</td>
<td>Low positive</td>
<td>High positive</td>
</tr>
<tr>
<td>Condition B and C trees and tree groups within the pre-developed Site</td>
<td>Low</td>
<td>High positive</td>
<td>High positive</td>
</tr>
<tr>
<td>Condition B and C trees and tree belts along the Site boundaries and adjacent to public rights of way</td>
<td>Moderate</td>
<td>Medium positive</td>
<td>High positive</td>
</tr>
<tr>
<td>Hedgerows along the Site boundaries and adjacent to public rights of way</td>
<td>Moderate</td>
<td>Low positive</td>
<td>Medium positive</td>
</tr>
<tr>
<td>Nutbrook Canal and ponds</td>
<td>Moderate</td>
<td>Medium positive</td>
<td>High positive</td>
</tr>
</tbody>
</table>
### Site Feature

<table>
<thead>
<tr>
<th>Site Feature</th>
<th>Sensitivity</th>
<th>Magnitude of Change Year 1</th>
<th>Magnitude of Change Year 25</th>
<th>Significance of Effect Year 1</th>
<th>Significance of Effect Year 25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built form associated with existing and recent employment and industrial operations.</td>
<td>Low</td>
<td>Medium negative</td>
<td>Medium to high positive</td>
<td>Minor adverse</td>
<td>Moderate beneficial</td>
</tr>
<tr>
<td>Non-listed historic buildings or built elements drawing reference to historic works on site.</td>
<td>Moderate</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Minor beneficial</td>
<td>Minor beneficial</td>
</tr>
<tr>
<td>Grove Farm Tip and associated tree belts within the western parts of the Site</td>
<td>Moderate</td>
<td>Medium positive</td>
<td>Medium-High positive</td>
<td>Moderate beneficial</td>
<td>Moderate-Major beneficial</td>
</tr>
<tr>
<td>Soil mounds and scrub associated with the former slag crusher and stock yard</td>
<td>Low</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Minor beneficial</td>
<td>Minor beneficial</td>
</tr>
</tbody>
</table>

5.166 It can be concluded that, by retaining high sensitivity landscape features and reinforcing and enhancing them within the proposals, the Proposed Development will result in an overall moderate to major beneficial effect on sensitive Site features.

**Effects on Landscape Character**

5.167 The effects of demolition and construction on the landscape character will be determined by the loss of landscape features which currently contribute to any sense of enclosure, coherence or patterns in the landscape.
5.168 The majority of the Site is characterised by post or present industrial activities and the associated infrastructure, processing and storage facilities. The demolition and construction activities will be similar in nature to the existing operations within the working parts of the Site. The demolition and construction works on the existing St Gobain and cleared sites will result in a low to medium negative change in character with a corresponding minor adverse significance of effect due to the low landscape character sensitivity of the landscape. These effects will be temporary.

5.169 Any sense of enclosure within the Site is restricted to where existing tree belts and woodland have become established. There will be limited demolition and construction works within the western areas where existing vegetation is proposed to be retained and enhanced for wildlife benefit. Similarly, within the northern parts of the Site the existing tree belts and water features would be retained and protected during the demolition and construction works, with the exception of those extents of tree belts that would be removed to facilitated the construction of the noise attenuation bund. It is noted that the noise attenuation bund will be entirely in keeping with the existing industrial character of the Site, including the various materials heaps. There will inevitably be a change in character due to the adjacent construction works. The demolition and construction works adjacent to the retained and protected landscape areas will result in a low negative change in character with a corresponding minor adverse significance of effect. These effects will be temporary.

5.170 At year 1, the Proposed Development will result in the restoration and improvement of a predominantly brownfield site within the landscape adjacent to the urban edge of Ilkeston. The Proposed Development will respond to opportunities for wildlife enhancement, improved access and recreational opportunities and recognition of the historical significance of the Site. As such the Proposed Development will respond positively to the methods by which the objectives of SEO1 could be achieved, including restoring areas of degraded land, creating new landscape that are sympathetic to the local landscape character and using native tree/shrub planting to integrate built structures into urban fringe areas, as set out in NCA 38: Nottinghamshire, Derbyshire & Yorkshire Coalfield.

5.171 The Proposed Development would also result in benefits to green infrastructure and walking/cycling routes which would accord positively with the other key drivers identified in the Landscape Change section of NCA 38.

5.172 There will be a low positive magnitude of change to the landscape character at a national scale with a corresponding minor beneficial significance of effect.
5.173 The consented proposals for restoration of the spoil heap to the west of the Site will result in a gently rounded and rolling landform which will assimilate with the adjacent agricultural land typical of the Coalfields Village Farmlands. The retention, enhancement and management of existing woodland, tree belts, hedgerows and scrub will maintain and reinforce the physical links between retained woodland and tree belts within the Site. The proposed opening of the Nutbrook Canal and the introduction of additional native riparian trees along its length and adjacent to associated ponds will result in improved visual and ecological continuity. Within the built up area good quality trees and hedgerows will be conserved and managed. As such the Proposed Development will respond to Derbyshire County Council’s planting and management guidelines for the Coalfield Village Farmlands. There will be a medium positive change to the landscape character at a local scale with a corresponding moderate beneficial significance of effect.

Effects on Historic Landscape Character

5.174 Section 10 – Archaeology and Cultural Heritage of this Environmental Statement, alongside the archaeological desk-based assessment provided at Appendix A, Appendix 11.1 provide detail of the history of the Site, including a timeline of its development referring to maps dating back to 1844. The historic mapping indicates the conversion of an agricultural landscape to that associated with, firstly the transportation of coal to a nearby mine at Shipley in 1844, and subsequently the development of the Stanton Ironworks (the ‘Old Works’) from 1846 onwards. The 1885 map illustrates the Stanton Works set within a small to medium sized field pattern. The Nutbrook Canal, Lows Lane and the railway lines are dominant linear features in the landscape which contribute to the overall historic scale and pattern of the landscape.

5.175 The Proposed Development will retain existing road alignments and associated roadside hedgerows and tree belts. The proposed cut and fill operations across the Site will see the eastern spoil heaps removed and the western tip site regenerated back to a rolling landform in keeping with the adjacent Dale Abbey valley landscape.

5.176 The proposals will see the opening up of the Nutbrook Canal as a character driver and green infrastructure corridor within the public realm to the north of the new neighbourhood. The utilisation of land to the north of the canal for a range of complimentary uses other than residential development will create a well located corridor of open space, recreational and sport related facilities set within an enhanced landscape. This will provide a strongly defined,
well balanced multi-use area between the existing edge of settlement and the proposed edge of settlement to the south of the canal.

5.177 By retaining features which draw reference to the industrial significance of the Site whilst re-establishing a landform more akin to the historic pre-industrial arable rolling countryside and retaining public rights of way (and their associated landscape features) along their historic alignments it can be concluded that there will be a medium positive effect on the historic landscape character of the Site. The significance of these effects will be moderate beneficial.

Table 5.3: Summary of Effects on Landscape Character:

<table>
<thead>
<tr>
<th>Landscape Character</th>
<th>Sensitivity</th>
<th>Magnitude of Change Year 1</th>
<th>Magnitude of Change Year 25</th>
<th>Significance of Effect Year 1</th>
<th>Significance of Effect Year 25</th>
</tr>
</thead>
<tbody>
<tr>
<td>National: Nottinghamshire, Derbyshire &amp; Yorkshire Coalfield</td>
<td>Medium</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Minor beneficial</td>
<td>Minor beneficial</td>
</tr>
<tr>
<td>County: Coalfield Village Farmlands</td>
<td>Medium</td>
<td>Medium positive</td>
<td>Medium positive</td>
<td>Moderate beneficial</td>
<td>Moderate beneficial</td>
</tr>
<tr>
<td>Historic</td>
<td>Medium</td>
<td>Medium positive</td>
<td>Medium positive</td>
<td>Moderate beneficial</td>
<td>Moderate beneficial</td>
</tr>
</tbody>
</table>

Visual Effects

5.178 It is considered that for any development of the scale proposed, the effect on views from surrounding locations, including residential properties will be apparent. The Visual Effects Table included in Appendix D, Appendix 5.5 records the changes to the views from identified receptors accordingly, with a high magnitude of change recorded where the Proposed Development records a significant change in the existing view, and a low magnitude of change recorded where the Proposed Development would cause a barely perceptible change in the existing view. When combined with the sensitivity of the receptor, these
changes are classified as having a certain significance of effect. The effect is also classified as being either negative i.e. adverse, positive i.e. beneficial or neutral i.e. no change.

5.179 The likely significant effects have been assessed based on the maximum building heights across the Site as indicated on Parameter Plan 2: Scale Drawing No. 9602 Rev G accompanying the application. The actual building heights will include variations in height and roofline defined as part of their subsequent design contributing further benefits to the visual amenity associated with the Proposed Development.

5.180 The detailed assessment of the effects of the Proposed Development on views for visual receptors is set out in Appendix D, Appendix 5.5.

**Visual Effects on Residential Properties, Listed Buildings and the Stanton by Dale Conservation Area**

5.181 Residential properties likely to experience significant visual effects include the Listed New Stanton Cottages along Lows Lane. The properties have well established hedgerows and tree belts along their rear boundaries with the Site. These boundary features are proposed to be retained and enhanced with additional structural planting thereby filtering views towards the employment site to the south of Sowbrook Lane. Views of the new housing to the north will be possible from the cottages. These views will be filtered through retained vegetation along the Site boundary and through proposed tree planting along the existing roads. During construction there will inevitably be views of operations on site and traffic along the existing road. In the context of the existing site traffic associated with the industrial works on the Site the temporary effects of construction operations are assessed as having a low negative change in the view. At year 1 there will be a low positive magnitude of change of view as a result of the improved road layout and street frontage associated with the new residential development set adjacent to the existing retained vegetation along the Site’s boundaries. The significance of the visual effects on the New Stanton Cottages at Year 1 will be minor beneficial. Proposed tree planting along the existing roads will enhance these views once established and will result in a residual medium positive change in the existing view. The Proposed Development will result in a residual moderate beneficial significance of effect on the New Stanton Cottages.

5.182 Residential properties and Listed Buildings along the Stanton-by-Dale ridgeline (to the south of the Site) are likely to experience open to partial views of most of the Proposed Development depending on the distance of the receptor and the extent of intervening vegetation and topographical variation in the intervening landscape. These views will be
filtered by the existing tree belts retained and enhanced along the Site’s boundaries. Furthermore the provision of allotments, open space and structural planting adjoining the southern boundary of the Site will ensure an appropriate offset between the Stanton by Dale Conservation Area and the proposed residential edge. Built development would not be placed closer to the northern tip of the Conservation Area boundary than existing built development and the appearance and character of the built development would be an improvement to the existing industrial buildings.

5.183 In the majority of views from the north facing slopes of the ridgeline the Stanton Bonna Site would remain an industrial element in the foreground of the view. The Quarry Hill Industrial Site and the developed ridgelines of Kirk Hallam and Ilkeston would remain in the background of the view. Temporary effects during demolition and construction will result in a low change in the context of the existing industrial operations on Site. At year 1 the new residential edge, allotments, open space areas, proposed structural planting and retained vegetation would provide an improvement to the overall view of the Stanton valley. There would be a medium positive change in the views and a moderate beneficial significance of effect. The proposed landscape treatments within the western parts of the Site, along the southern edge of the development and associated with the existing and proposed road network would establish and mature in time. The residual visual effect on the properties along the Stanton-by-Dale ridgeline would be moderate beneficial.

5.184 Residential properties along the Kirk Hallam / Lady Wood ridgelines and within the Dale Abbey Valley (to the west and north west of the Site) are likely to experience partial to glimpsed views of a small amount of the Proposed Development due to the nature of the intervening topography and vegetation, including the existing retained spoil heap and tree belts within the western part of the Site. During construction the retained soil mound will obstruct views towards the works on site. There will be no discernible change in the views as a result and in comparison to the existing industrial works currently on site. At year 1 there will be filtered views towards the Proposed Development and the new rooflines associated with the Proposed Development will be glimpsed within the Stanton valley but will not break the skyline in the views. Ecological enhancement works to the Grove Farm Tip in the west of the Site will improve the views. The significance of these low positive changes in the view will be minor beneficial. At year 25 the planting within the western parts of the Site will have matured to form an improved ridgeline in keeping with the character of the wooded ridgelines at Trowell and Stapleford and will result in a medium positive change in the view.
from the Kirk Hallam / Lady Wood Ridgelines. The significance of the residual visual effects will be moderate beneficial.

5.185 Residential properties along the Ilkeston ridgeline will have partial to glimpsed views of most of the Proposed Development. Views will be filtered and partially obscured by the Quarry Hill Industrial Site in the foreground. The Stanton-by-Dale, Trowell and Stapelford ridgelines will remain as the background to the views. The replacement of the existing industrial features within the Site will result in a significant enhancement in views across the valley. During construction there will be open views of the works on Site. The construction works will be carried out in phases to ensure that the visual effects do not result in a substantial change in the views in comparison to the existing on site activities. There will inevitably be a minor negative change in the views as a result of the construction operations. At Year 1 views across the valley towards the Stanton-by-Dale ridgeline will be improved by the replacement of the existing hardstanding and industrial features with a new residential neighbourhood with varied roof lines and built form responding to the character areas within the Site. The northern parts of the Site will be improved through the removal of derelict features and the introduction of open space features. There will be medium positive change in the views from the Ilkeston ridgeline in Year 1. The significance of the effects will be moderate beneficial. At year 25 the landscape proposals within the north of the Site and associated with the built up areas south of the canal will mature. The enhancement proposals for the western parts of the Site will establish to create an improved landscape feature along the horizon adjacent to the Stanton-by-Dale ridgeline. There will be a medium positive change in the views. The significance of the effects on views from residential properties along the Ilkeston ridgeline will be moderate to major beneficial.

5.186 Residential properties at Trowell and Stapleford will have partial views of most of the Proposed Development where set within the elevated west facing slopes to the east of the Site. Views will be predominantly of the proposed employment site to the east of Seven Oaks Road. The intervening landscape associated with the M1 and railway corridor will filter the views. Building heights will not exceed that of the retained warehouses to the south of the Site (including the William West Distribution Centre) which currently from dominant features in the view. The Ilkeston and Stanton-by-Dale ridgelines will remain as background to the view. During construction there will be partial views of the works on Site. The construction works will be carried out in phases to ensure that the visual effects do not result in a substantial change in the views in comparison to the existing on site activities.
There will neutral change in the views as a result of the construction operations in the context of the adjacent M1 traffic and existing works on Site. At year 1 views of the new employment site will result in a low positive change in the view due to the replacement of derelict features and the provision of an appropriate open space offset to the Erewash Canal. The significance of these effects will be minor beneficial. At year 25 the proposed structure planting between the employment edge and the Canal will establish to soften the views. However, in the context of the landscape associated with the M1 and railway corridor the change in the view will remain low positive and the significance of the residual effects will be minor beneficial.

5.187 Residential properties along the lower slopes of the Sow Brook, Nutbrook and Erewash river valleys will have glimpsed views of the Proposed development through the intervening vegetation associated with the valley floors and the Site’s boundary vegetation. The retained and restored spoil heap and boundary vegetation along the western Site boundary and alongside Nutbrook Canal will obstruct views from the west and north-west. Landscape features associated with the M1 motorway corridor will obstruct / filter views of the Site from the Erewash valley to the east. Construction operations will be controlled so as to reduce any effects on the existing boundary vegetation and the vegetation associated with the watercourses on the Site. There will be limited views of the construction works and a subsequent minor to neutral effect on the residential properties within the valley floors. Similarly at year 1 the retention of the existing landscape features and provision of open space corridors to the north and east of the Site adjacent to the Canals will reduce the extent to which the new development will be visible and there will be low positive change in the views. The significance of these effects will be minor beneficial. At year 25 the landscape proposals within the open space corridors will have matured, however the significance of effects will remain minor beneficial due to the limited change to the view.

Visual Effects on Other Properties and Land Uses

5.188 Other properties likely to experience significant visual effects as a result of the Proposed Development include the Quarry Hill Industrial Estate, the Stanton Bonna Site and the mixed uses fronting onto Low’s Lane and Sevenoaks Road (including various warehouses, depots, employment and Seven Oaks Inn / Restaurant). The degree of visual intrusion would be partial to full. The properties would have open to partial views of the proposed development. Vegetation along the Site’s boundaries and along Low’s Lane, Sowbrook Lane and Littlewell Lane would be retained where possible to filter the views into the new
development. Views from Quarry Hill Industrial Estate would include the new landscaped bund in the northern area of the Site, which would partially screen built development to the south. During construction there would be open views of construction operations and site traffic along the existing roads. In the context of the existing site traffic associated with the industrial works on the Site the temporary effects of construction operations are assessed as having a low negative change in the views. At Year 1 views from the Stanton Bonna Site would be improved by the replacement of the existing brownfield site and overgrown derelict areas with an extension to the existing employment area towards the north and the proposed residential development and associated allotments area, informal open space and structural planting adjoining the southern boundary of land to the east of Littlewell Lane. There will be a low positive change in the views with a minor beneficial significance of effect at Year 1. At year 25 the establishment of new planting within the built up area will increase the change in the view to medium positive, however the significance of the effect will remain minor positive due to the low sensitivity of the receptor.

5.189 In views from the mixed employment use along Low’s Lane there will be a medium negative change at year 1 due to the replacement of the open grassed areas and vegetation associated with the dismantled railway line. The significance of effects at year 1 will be minor to moderate adverse. At year 25 the proposed street planting along Low’s Lane and the enhancement of the street frontage will result in a low positive change in the view with a residual minor beneficial effect on these medium to low sensitivity receptors.

5.190 Along the Stanton-by-Dale ridgeline the users of the Flake Lane Playground, the Erewash Valley Golf Course and the Stony Clouds Nature Reserve are likely to experience partial to glimpsed views of most of the Proposed Development. These views will be occasionally filtered by the vegetation within the intervening landscape and the existing tree belts along the Site’s southern boundaries. The degree of visual intrusion will be partial. During construction there would be glimpsed views of construction operations and site traffic along the existing roads. In the context of the existing site traffic associated with the industrial works on the Site the temporary effects of construction operations are assessed as having a low to medium negative change in the views depending on the proximity to the Site and the extent of existing intervening vegetation. At year 1 there will be a medium positive change in views towards the Site due to the replacement of existing industrial and brownfield elements with the proposed residential areas and new employment facilities. At year 25 the
proposed mitigation within the Site will mature and the change will be medium positive with a resultant moderate beneficial significance of effect.

5.191 Other properties / Land uses along the lower slopes of the Kirk Hallam / Lady Wood ridgelines include the Dallimore Primary School and the Kirk Hallam Youth Club. Users of these facilities are likely to experience glimpsed views of a small amount of the Proposed Development. Views will remain obstructed by the intervening topography and vegetation, including the retained tree belts along the western Site boundaries. The demolition and construction works on the Site will result in a low negative change in the view with a resulting minor adverse significance of effect due to the increase in site traffic and potential views towards taller construction elements. At year 1 there will be a low positive change in the views as a result of the replacement of the brownfield site with the new residential and employment areas. The significance of these effects will be minor beneficial. At year 25 the proposed mitigation planting in the western parts of the Site will have matured resulting in a medium positive change in the views. The significance of the effect will remain minor beneficial due to the low sensitivity of the receptors.

5.192 Other properties / land uses along the Ilkeston ridgeline include the Quarry Hill Industrial Estate, the Derby College of Further Education, the Hallam Fields Allotments and the Ilkeston Rugby / Stanton Tennis Club. These properties will have partial to glimpsed views of most of the Proposed Development. Views will be filtered and partially obscured by the Quarry Hill Industrial Site in the foreground. The Stanton-by-Dale, Trowell and Stapleford ridgelines will remain as the background to most views. During construction there will be open to partial views of the works on Site, depending on the nature of the intervening built up area. The construction works will be carried out in phases to ensure that the visual effects do not result in a substantial change in the views in comparison to the existing on site activities. There will inevitably be a minor negative change in the views as a result of the construction operations. At year 1 views across the Erewash Valley towards the Stanton ridgeline will be improved by the replacement of the existing hardstanding and industrial features with a new residential neighbourhood with appropriate roof lines and built form responding to the character areas within the Site. The northern parts of the Site will be improved through removal of derelict features and the introduction of a corridor of formal and informal open space features incorporating the existing cooling pond to the north of the canal. There will be medium positive change in the views from the Ilkeston ridgeline in year 1. The significance of the effects will be moderate beneficial. At year 25 the landscape proposals
within the north of the Site and associated with the built up areas will mature. The enhancement proposals for the western parts of the Site will establish to create an improved landscape feature along the horizon adjacent to the Stanton ridgeline. There will be a medium positive change in the views. The significance of the effects on views from residential properties along the Ilkeston ridgeline will be moderate to major beneficial.

5.193 Other properties / land uses along the Trowell and Stapleford ridgelines include the Trowell Garden Coffee Shop and employment buildings at Nottingham Road, Stapleford. There are limited views from the Trowell Garden Centre due its orientation and sunken location within the Trowell ridgeline. In views from the elevated areas of Stapleford the Proposed Development will be glimpsed across the rooftops of the Stapleford built up area and the M1 corridor. The William West Distribution Centre is visible in the view with the Quarry Hill Industrial Estate and the Ilkeston ridgeline visible beyond. There will be distant glimpses of the construction operations on the Site, however in the context of the existing industrial uses on Site the change in the view will be low negative. The significance of the temporary effects will be minor adverse. At year 1 the change will be low positive due to the replacement of the brownfield and industrial elements. The significance of the change will be minor beneficial. At year 25 the proposed mitigation within the Site will have matured. The change will remain low positive with a resultant minor beneficial significance of effect.

Visual Effects on Public Rights of Way

5.194 Public Rights of Way (PROW) likely to experience significant visual effects include footpaths and roads within the Site or adjacent to the Site’s boundaries. The degree of visual intrusion would be partial to full depending on the extent of intervening vegetation and built form.

5.195 Footpath St. FP6 in relatively close proximity to the southern boundary of the Site would experience a low positive change in the views at year 1 due to the replacement of the lorry park with allotments and informal open space to the north. The significance of the effects on the view would be minor beneficial. At year 25 structure planting associated with the southern edge of the Site will have matured and the residential edge would have assimilated into the landscape resulting in a medium positive change in the views with a resultant moderate beneficial significance of effect.

5.196 Footpaths within the western parts of the Site (including St. FP 15, 18, 11 and 24) would experience a medium to low negative change in the views during the construction period due to the introduction of the proposed employment site to the north of the Stanton Bonna Site. The significance of the temporary effects during construction would be minor adverse.
5.197 At year 1 the proposed planting and ecological proposals within the western parts of the Site would result in a minor positive change in the views from near distance footpaths to the west of, or within, the Site. The significance of the effects on these views would be minor beneficial. At year 25 the mitigation proposals would have matured and there would be a medium positive change in the views with a resultant moderate beneficial significance of effect.

5.198 Public footpaths Il. FP 103 and 104 associated with the Nutbrook Canal would experience medium to low negative changes in their views depending on the proximity to the proposed construction area and the extent to which the existing vegetation within the Site and along the western site boundary filters the views. The significance of the effect will be minor adverse. At Year 1 the management of the boundary vegetation and the enhancement of the Nutbrook Canal immediately east of Ilkeston Road will generally result in a low positive change in views from footpaths St. FP 24 towards the Proposed Development. The significance of the effect on the views will be minor beneficial. At year 25 the mitigation proposals associated with the western edge of the Site and the proposed enhanced Nutbrook Canal will have matured and there will be a medium positive change in the views with a resultant moderate beneficial significance of effect.

5.199 Construction of the noise attenuation bund on land between the canal and cooling pond would be clearly visible from a stretch of St. FP 24 which passes immediately adjacent to the proposed bund. The significance of the effect will be moderate adverse. At year 1 the bund would remain prominent in views and would still be assimilating into the landscape. Changes would be low negative resulting in a Minor adverse significance of effect. At year 25 planting on the bund would have established and would integrate the bund with the surrounding landscape, maintaining the existing sense of enclosure in the canal corridor. There will be a low positive change in the view with a resultant minor beneficial significance of effect.

5.200 The sustrans cycleway to the north of the Nut Brook would experience medium negative changes in the view during construction of the noise attenuation bund resulting in moderate adverse significance of effects. At year 1 the planted bund would be assimilating into the landscape which would reduce the magnitude of effect to low negative with an associated minor adverse significance of effect. By year 25, the shape of the bund would be discernible in the landscape but mature planting on its slopes would strengthen the landscape structure of the area, integrate the bund with the surrounding vegetation and curtail views of the built
development beyond. Magnitude of change would be low positive, with a corresponding minor beneficial significance of effect.

5.201 The public rights of way associated with the Erewash Canal (including St. FP 21, Il. FP 81 and the sustrans cycle route) would experience medium to low negative changes in the views during construction. The views would be filtered by existing vegetation along the Canal banks. The significance of the temporary effects would be minor to moderate adverse. At Year 1 the landscape buffer between the employment edge and the Site’s eastern boundary and adjacent to the sustrans cycle route would reduce the magnitude of effect to low negative with an associated minor adverse significance of effect. At year 25 the planting within the buffer and open space to the north of the employment area would establish to improve the sense of enclosure currently provided by the existing vegetation adjacent to the Canal. The change in view would be low positive, with a corresponding minor beneficial significance of effect.

5.202 There will be open to partial views of the Proposed Development from the roads abutting the Site boundaries and passing through the Application Site, including Littlewell Lane, Seven Oaks Road, Sowbrook Lane, Ilkeston Road and Low’s Lane.

5.203 PROWs along the Stanton-by-Dale ridgeline are likely to experience open to partial views of most of the Proposed Development. These views will be occasionally filtered by the intervening vegetation and the existing tree belts along the Site’s boundaries. The degree of visual intrusion would be partial. The Stanton Bonna Site would remain an industrial element in the foreground of the view. The Quarry Hill Industrial Site and the developed ridgelines of Kirk Hallam and Ilkeston would remain in the background of the view. In the context of the wider landscape the views of the demolition and construction works on the Site would result in a medium to low negative change in the view with a resulting moderate to slight adverse significance of effect. At year 1 the new residential edge and adjacent open space areas and retained vegetation would provide an improvement to the overall view of the valley. There would be a medium positive change in the views and a moderate beneficial significance of effect. The proposed landscape treatments within the western parts of the Site, along the southern edge of the development and associated with the existing and proposed road network would mature in time and the residual visual effect after 25 years on the PROWs along the Stanton-by-Dale ridgeline would be moderate beneficial.

5.204 PROWs along the Kirk Hallam / Lady Wood ridgelines are likely to experience partial to glimpsed views of a small amount of the Proposed Development due to the nature of the
intervening topography and vegetation, including the existing retained and enhanced Grove Farm Tip and tree belts within the western part of the Site. During construction Grove Farm Tip will obstruct views towards the works on site. There will be no discernible change in the views as a result and in comparison to the existing industrial works currently on site. At Year 1 there will be filtered views towards the Proposed Development and the new rooflines associated with the Proposed Development will be glimpsed within the valley but will not break the skyline in the views. Ecological enhancement works to the Grove Farm Tip will improve the views. The significance of these low positive changes in the view will be minor beneficial. At year 25 the planting works within the western parts of the Site will have matured to form an improved ridgeline in keeping with the character of the wooded ridgelines at Trowell and Stapleford and will result in a medium positive change in the view from the Kirk Hallam / Lady Wood Ridgelines. The significance of the residual visual effects will be moderate beneficial.

5.205 PROWs along the Ilkeston ridgeline will have partial to glimpsed views of most of the Proposed Development from occasional south facing exposed sections of public rights of way. Views will be filtered and partially obscured by the intervening built form and the Quarry Hill Industrial Site in the foreground. The Stanton-by-Dale, Trowell and Stapelford ridgelines will remain as the background to the views. The replacement of the existing industrial features within the Site will result in a significant enhancement in views across the valley. During construction there will be open views of the works on Site. The construction works will be carried out in phases to ensure that the visual effects do not result in a substantial change in the views in comparison to the existing on site activities. There will inevitably be a minor negative change in the views as a result of the construction operations. At Year 1 views across the valley towards the Stanton-by-Dale ridgeline will be improved by the replacement of the existing hardstanding and industrial features with a new residential neighbourhood with varied roof lines and built form responding to the character areas within the Site. The northern parts of the Site will be improved through the removal of derelict features and the introduction of a corridor of formal and informal open space features incorporating the existing water body, to the north of the canal. There will be medium positive change in the views from the Ilkeston ridgeline in Year 1. The significance of the effects will be moderate beneficial. At year 25 the landscape proposals within the north of the Site and associated with the built up areas will mature. The enhancement proposals for the western parts of the Site will establish to create an improved landscape
feature along the horizon adjacent to the Stanton-by-Dale ridgeline. There will be a medium positive change in the views. The significance of the effects on views from PROWs along the Ilkeston ridgeline will be moderate to major beneficial.

5.206 PROWs at elevated areas within and adjacent to Trowell and Stapleford will have partial views of most of the Proposed Development. Views will be predominantly of the proposed employment site to the east of Seven Oaks Road. The intervening landscape associated with the M1 and railway corridor will filter the views. Building heights will not exceed that of the retained warehouses to the south of the Site (including the William West Distribution Centre) which currently form dominant features in the view. The Ilkeston and Stanton-by-Dale ridgelines will remain as background to the view. During construction there will be partial views of the works on Site. The construction works will be carried out in phases to ensure that the visual effects do not result in a substantial change in the views in comparison to the existing on site activities. There will be a neutral change in the views as a result of the construction operations in the context of the adjacent M1 traffic and existing works on Site. At Year 1 views of the new employment site will result in a low positive change in the view due to the replacement of derelict features and the provision of an appropriate open space offset to the Erewash Canal. The significance of these effects will be minor beneficial. At year 25 the proposed structure planting between the employment edge and the Canal will establish to soften the views. However, in the context of the landscape associated with the M1 and railway corridor the change in the view will remain low positive and the significance of the residual effects will be minor beneficial.

Night-time Effects

5.207 It has been shown that the vicinity of the Site is subject to a range of light sources, with no areas of truly ‘dark skies’. Owing to the character of the existing urban edge of Ilkeston and the wider landscape, the area surrounding the Site is generally considered to have low-medium sensitivity to the introduction of lighting.

5.208 It is considered that the lighting introduced as part of the Proposed Development would result in a moderate to low magnitude of change in the character of the night sky in the surrounding area.

5.209 The landscape strategy for the Proposed Development will complement the existing vegetation structure in screening and softening lighting introduced as part of the Proposed Development. In addition, with appropriate detailed design of lux levels and luminaire cut-
off and orientation to ensure minimal light spillage, the magnitude of change resulting from the introduction of lighting within the Proposed Development would be moderate to low.

5.210 It is therefore considered that the potential light pollution would be minimised through design; and that there would be moderate to low effects on the character of the night sky.

**Effects on Landscape Planning Policy Context**

5.211 There will be no new built forms introduced within the Green Belt land to the west of the Site. Planting and remediation works to the western areas will have no effect on the open undeveloped nature of the land but will instead enhance the perception of a gap between the settlements within the Dale Abbey Valley and Ilkeston. The demolition and construction works will have a positive effect on Green Belt planning policy.

5.212 The Proposed Development will retain and enhance high sensitivity landscape features and will introduce new planting which will see a moderate to major beneficial effect on vegetation in the site and an indirect positive effect on the biodiversity value of the Site. Furthermore the Proposed Development will identify opportunities to draw attention to the historic significance of the Site. As such the Proposed Development will respond to the objectives of the National Planning Policy Framework and will have a positive effect on National planning policy.

5.213 The Stanton-by-Dale Conservation Area abuts the Site’s southern boundary. Demolition and construction operations within the southern corner of the Site will have a neutral effect on the setting of the Conservation Area due to the proposals to retain and protect the vegetation along the Site’s southern boundary.

5.214 The Proposed Development will respond positively to a number of policies contained within the Erewash Core Strategy 2011 – 2028. In relation to policy 3: Green Belt, the western area of the Site, which lies within the Green Belt, will remain open and will consolidate the existing settlement pattern. It will maintain separation between New Stanton, Stanton by Dale and Kirk Hallam to the north-east, which will also contribute to preserving the setting and special character of Erewash towns and rural settlements.

5.215 The Proposed Development would positively accord with Policy 7: Regeneration. The redevelopment of the Stanton Regeneration Site with built development which would acknowledge the historical significance of the area and a design layout incorporating well defined formal/informal open space areas and green infrastructure enhancements would result in beneficial effects on landscape features and the landscape character of the Site.
These changes would also positively accord with policy 10: Design and Enhancing Local Identity and policy 16 Green Infrastructure, Parks and Open Spaces.

5.216 Policy 20: Stanton Regeneration Site presents an opportunity to substantially enhance the appearance and character of the Site and this has been comprehensively addressed by the Proposed Development. Included within the Proposed Development would be residential development, land for new employment uses, a strategic area of green infrastructure (including a green/blue corridor along existing and new sections of canal, formal/informal open space and structural planting) and provision of/improvements to pedestrian/cycle infrastructure. In addition, nature conservation benefits will arise from the provision of the open space and planting proposals.

5.217 The Proposed Development would also positively address a number of saved policies from the Erewash Borough Local Plan 2005, in particular policy H12: Quality and Design, policy EV14: Protection of Trees and Hedgerows, policy EV16: Landscape Character and policies GB1 – GB3 relating to the Green Belt.

5.218 In relation to policy EV6: Listed Buildings, the Proposed Development would result in residential development located approximately 360m to the north-east of the nearest Listed Building (Middlemores Almshouses, Grade II, part of a group of six Listed Buildings in relative close proximity) at the northern end of Stanton by Dale, in the vicinity of Stanhope Street. Existing vegetation along the central part of the southern edge of the Site, in the vicinity of Littlewell Lane, filters views from the Listed Building and its setting to the north. Partial glimpsed views of new residential development will be an improvement to existing partial – glimpsed views of industrial related buildings located at the central part of the southern edge of the Site. In addition, an area of allotments and adjacent informal open space will provide further separation between the Listed Building and the built development. It is considered that the Proposed Development would therefore not result in harm to the Listed Building or its setting.

5.219 The Proposed Development would not result in harm to the Stanton by Dale Conservation Area. Separation between the northern tip of the Conservation Area and built development would be increased by the establishment of an area of allotments to the immediate north which would be approximately 70m wide and would replace an existing lorry parking area. In addition, an area of informal open space would be established to the immediate north of the allotments, which would range between a width of approximately 110m along the western boundary of the Site to a width of approximately 15m at the point at which it abuts the
north-eastern corner of the allotment area. This informal open space area would provide additional separation between the Conservation Area and the built development.

5.220 The existing southern boundary vegetation in the vicinity of Littlewell Lane, which filters views to the north would be retained and extended along the wider southern boundary of the Site in the form of structural planting. The replacement of industrial related buildings with residential development would improve the influence of the Site on the character of the setting of the Conservation Area. The Proposed Development would be seen in the context of existing industrial buildings to the north-west located within the Stanton Bonna area and existing residential development within Hallam Fields, at the southern edge of Ilkeston, on rising land to the north.

5.221 The Proposed Development will respond to Erewash Borough Council’s Supplementary Planning Guidance in terms of quality of the new built form and provision of open space. The landscape strategy will introduce a network of new green spaces with public realm, biodiversity and cultural significance. The Proposed Development will have a positive effect on local landscape planning policy.

Mitigation Measures

Construction Mitigation

5.222 Means employed to reduce the temporary effects of construction are proposed as follows:

- the use of hoarding around the construction site to screen construction activity from the ground level;
- controlling the lighting of construction compounds and machinery to minimise upward and outward light pollution by lantern design, direction and baffling. In addition, ensure that the minimum area only is lit, for the minimum period of time;
- agreeing appropriate working hours with Erewash Borough Council to ensure that adverse visual effects of construction are not experienced by residential and PROW receptors at times when they could reasonably expect a cessation of construction activity, for example evenings, weekends and bank holidays;
- locating compounds and stockpiles in the least visible locations within the Application Site; and
- limiting movements of material between stockpiles so that these do not shift over time, thereby adding to the sense of fragmentation and instability of the landscape.

5.223 Notably, all retained vegetation on the Application Site would be protected during construction by fencing to be installed before the commencement of any phase of
development. This would be in compliance with BS 5837 (2012) - Trees in Relation to Construction.

The Proposed Development

5.224 As noted above, the design of the Proposed Development already accounts for the mitigation of landscape and visual effects in terms of layout, scale, configuration of open space and structural landscape elements. In association with this, an iterative design process includes a holistic landscape strategy associated with the layout and scale of development areas. The landscape encompassed within the Proposed Development will comprise a network of structural landscape features and open space that seeks to integrate built development within the landscape and assimilate new residential and employment development within an urban edge setting extending to the south of Ilkeston. This reinforces the existing corridors that link into and through the Site and creates a sympathetic transition with adjoining areas of countryside. The key components of this landscape are described in the Design and Access Statement accompanying the Planning Application.

5.225 The following landscape and visual constraints and opportunities have informed the evolution of the masterplan:

- Identify opportunities within the Proposed Development to accentuate views out towards the historic landmarks in the vicinity of Site, in particular towards the Church of St Michael’s & All Angels at Stanton-by-Dale and St Mary’s Church at Ilkeston;
- Provide an appropriate open space offset to the Stanton-by-Dale Conservation Area to the south of the Site,
- Retain and enhance existing tree belts and hedgerows along the Site’s southern boundary so as to filter views towards the Proposed Development edge from the Stanton-by-Dale Conservation Area;
- Identify opportunities for small scale woodland planting;
- Recognise opportunities to restore old hedgerow patterns and improve access and conservation features;
- Re-establish and enhance physical links between existing isolated woodland and hedgerows;
- Identify opportunities for views out from within the Site towards the prominent wooded ridgelines in the vicinity of the Site at Lady Wood, Trowell Ridgeline and Bramcote Hill;
- Recognise the opportunity to retain and enhance the Grove Farm Tip site in the west of the Site as a landscape feature thereby filtering views towards the Proposed Development from the Green Belt landscape to the west;
- Enhance the Grove Farm Tip with native woodland planting to reflect the landscape character of the wooded ridgelines at Lady Wood, Trowell Ridgeline and Bramcote Hill;
- Reduce the extent of development to the west of Littlewell Lane so as to recognise the potential for wildlife enhancement and to reduce the effects on existing public rights of way within the Site;
- Wherever possible, retain existing tree belts and hedgerows associated with the Nutbrook Canal and Erewash Canal and identify the opportunity to enhance the setting to the canals through the provision of appropriate open space offsets and structure planting;
- Provide structure planting along the eastern edge of the Site adjacent to the Erewash Canal so as to soften the views towards the new development edge from the Erewash Canal towpath and properties and public rights of way within the Erewash River valley and along the lower slopes of the Trowell and Stapelford ridgelines;
- Where possible, maintain the existing vegetation associated with the Nutbrook Canal to the west of the Site which currently provides visual enclosure to the public rights of way and filters views across the Nutbrook valley floor towards the urban edge of Ilkeston and the Proposed Development;
- Ensure successful establishment of tree and shrub planting on the noise attenuation bund so that this feature is integrated into the landscape and contributes positively to landscape character;
- Where possible retain existing trees (including the TPOs) and hedgerows associated with the existing road and public right of way network within and adjacent to the Site so as to provide a sense of landscape maturity and to maintain the existing landscape character of the Site.

5.226 The landscape components of the Proposed Development would be established in accordance with the phasing strategy and plan described in this ES and therefore would be implemented incrementally. Proposed landscape features would be established within each phase so as not to be affected by or impede works in later phases. It is anticipated that, as tree planting matures, it will further enhance the screening of the Proposed Development.
from available views and assimilate new built forms into the landscape. In addition, retained existing and proposed vegetation will be subject to a landscape and biodiversity management plan that will enhance retained existing vegetation and ensure the comprehensive establishment of proposed vegetation.

**Residual Effects**

5.227 The residual effects (25 years after completion of the Development) have been discussed above and are summarised below.

5.228 There will be an overall residual beneficial effect on Site features due to the extent to which high sensitivity features will be retained, protected or replaced in the Proposed Development. The long term maintenance and management of existing and proposed landscape features will ensure longevity and maximise biodiversity and public realm value.

5.229 There will be an overall residual beneficial effect on the landscape character of the Site and its surrounds by the replacement of a predominantly brownfield site with a development incorporating an improved landscape structure, enhanced sense of enclosure and pattern of landscape elements. Recognition of the historic significance of the Site will ensure its long term value for future generations and will result in a residual beneficial effect on historic landscape character.

5.230 There will be no residual adverse effects on views from residential properties, Listed Buildings, PROW or other land uses which currently view the Site and its features. The Proposed Development will take account of recommendations provided above to ensure that all receptors will experience a residual beneficial effect on their views.

5.231 The Proposed Development will result in a moderate effect on night sky due to the nature of the Proposed Development in contrast with the existing uses on Site. However this change will be in keeping with the adjacent land uses and will have low effect on the night sky associated with Dale Abbey Valley and the countryside to the south of the Site.

**Summary**

5.232 It can be concluded that the Proposed Development will result in an overall improvement in the landscape character of the landscape associated with the Stanton Ironworks site and will provide an improved setting to the existing urban area of Ilkeston and the Stanton-by-Dale Conservation Area. The enhanced green infrastructure provision which will encourage public access and increase awareness of the historic significance of the Site whilst encouraging new wildlife areas and a positive long term environment for future generations.
6.0 GEOLOGY

Introduction

6.1 The findings relating to Geology set out at Chapter 6 of the original Environmental Statement (dated, November 2012) presented at Appendix A of this ES Addendum have been assessed against the proposed amendments described at Chapter 3 of the ES Addendum.

FINDINGS OF ES ADDENDUM REVIEW

6.2 The proposed amendments comprise the relocation of residential units from the north of the site (formerly Phase R6) to the southwest corner of the site (formerly Phase G1), while the area of sports pitches in the southwest corner of the site (formerly Phase G1) will be relocated to the north of the site (formerly Phase R6). In addition, a noise attenuation bund will be provided in the northwest corner of the site.

6.3 In reviewing the proposed amendments within the context of the original ES, the following are identified as the matters of key considerations:

   - Parameter Plan 1:- Land Use Plan the key items considered have been the reconfiguration of the proposed land uses, that being the provision of formal open space including sports pitches to the north of the Nutt Brook, the inclusion of the noise bund and the relocation of the proposed residential dwellings to the south of the Lowes Lane.

   - The re-location of the proposed secondary route junction to the North South Link Road has been considered.

   - The transfer of an area of public open space from the south of the site to the north of the Nutt Brook and the provision of additional formal open space have been considered.

6.4 It is concluded that the proposed amendments will result in no change to the overall findings/conclusions set out within the original ES Geology chapter.

6.5 Appendix 6.5 presented in Appendix E of this Addendum contains a written statement from the Technical Consultants confirming the above.
7.0 WATER

Introduction

7.1 The findings relating to Water set out at Chapter 3 of the original Environmental Statement (dated, November 2012) presented at Appendix A of this ES Addendum have been assessed against the proposed amendments described at Chapter 3 of the ES Addendum.

7.2 The proposed amendments to the planning application comprise the relocation of residential units from the north of the site (formerly Phase R6) to the southwest corner of the site (formerly Phase G1), while the area of sports pitches in the southwest corner of the site (formerly Phase G1) will be relocated to the north of the site (formerly Phase R6). In addition, a noise attenuation bund will be provided in the northwest corner of the site.

7.3 These amendments are shown on the following parameter plans:

- Parameter Plan 1 – Land Use Option 2 (Drawing No: 9312 Revision F);
- Parameter Plan 2 – Scale (Drawing No: 9602 Revision G);
- Parameter Plan 3 – Residential Density (Drawing No: 9601 Revision H);
- Parameter Plan 4 – Access and Movement (Drawing No: 9600 Revision H);
- Parameter Plan 5 – Green Infrastructure (Drawing No: 9305 Revision E); and
- Parameter Plan 6 – Phasing (Drawing No: 9601 Revision C).

7.4 In reference to the Water ES Chapter and the review of Parameter Plan 1 - Land Use Plan the key items considered have been the reconfiguration of the proposed land uses, that being the provision of formal open space including sports pitches to the north of the Nut Brook, the inclusion of the noise bund and the relocation of the proposed residential dwellings (formerly Phase R6) to south of the Lowes Lane (formerly Phase R5).

7.5 Parameter Plan 2: Scale and Parameter Plan 3: Residential Density - amendments to the building scale and density plans are not considered relevant to the Water ES Chapter.

7.6 Parameter Plan 4: Access and movement - the re-location of the proposed secondary route junction to the North South Link Road have been considered.

7.7 Parameter Plan 5: Green Infrastructure – the transfer of an area of public open space from the south of the site to the north of the Nut Brook and the provision of additional formal open space have been considered.
Noise Bund

7.8 A noise bund is proposed to the north and west of Chadwick Pond in the northwest of the site. The maximum height of the bund will not exceed 11m and it will extend for approximately 325m roughly parallel with the line of the Nut Brook.

Impact of Noise Bund on the Floodplain

7.9 As the Nut Brook has been re-modelled since 2012, the latest Product 4 information has been obtained from the Environment Agency (EA) to inform the design and positioning of the bund. This information is included as Appendix D, Appendix 7.3.

7.10 A review of this information has resulted in the bund being located entirely within an area classified as Flood Zone 2. A thin area of Flood Zone 3 extends parallel to the northern edge of the Nutbrook Canal. At the detailed design stage, the bund will be specifically designed to avoid this area, were possible. In accordance with standard EA guidance, floodplain compensation is not required for areas in Flood Zone 2 that equate to the 1 in 1000 year floodplain.

7.11 In addition to being situated in Flood Zone 2, the majority of the bund will be in an area that is outside the extent of the 1 in 100 year climate change flood extent (relevant maps included in Appendix D, Appendix 7.3).

7.12 A detailed review of the site level information suggests that in the areas where the bund does encroach into the 1 in 100 year climate change flood extent, flood depths are relatively shallow, in the order of a few centimetres; therefore any displaced floodwater will have a negligible effect on the overall floodplain. Additionally, the upstream land uses in the vicinity of the site are dominated by open undeveloped land, meaning that any slight increase in upstream flood levels would not impact on any more vulnerable land uses.

7.13 The existing overflow channel from the Nutbrook Canal running into Chadwick Pond will require diverting to the south side of the noise bund.

7.14 The area of dry lower ground to the western end of Chadwick Pond will need to be infilled to facilitate the construction of the noise bund. In order to maintain the capacity of Chadwick Pond, an area equal to the volume of fill will be cut from the southern side of the pond to ensure no capacity is lost.
Surface Water Drainage

7.15 The principles outlined in the indicative surface water drainage strategy remain relevant; it is not considered necessary to revise the calculations in the previous FRA due to the indicative nature of the masterplan. The revised masterplan removes any residential development from the area between the reinstated Nutbrook Canal and the Nut Brook, replacing it with sports pitches and areas of open space. The area in the southwester corner of the site previously showing 3 football pitches has been removed and will now comprise mainly residential properties.

7.16 This overall potentially positively drained area has therefore reduced significantly. The revised masterplan represents a significant betterment with respect to overall surface water runoff rates.

7.17 The proposed SuDS features outlined in the FRA are designed to provide approximately 23,800m$^3$ of storage (excluding the existing provision within the Chadwick Pond). This is in excess of the 23,413m$^3$ required storage volume to retain the 1 in 100 plus 30% climate change event. The SuDS measures are outlined on Figure 14 of the FRA with the proposed catchment areas highlighted in Figure 15 set out at Appendix A, Appendix 6.1.

7.18 Permeable paving and soakaways provide underground storage and have been sized to fully accommodate the 1 in 30 year storm event for the appropriate area. This equates to a provision of 16,880m$^3$. It should be noted that the provision is also sufficient to accommodate the 1 in 100 year event without significant surface flooding.

7.19 The surface water drainage strategy is indicative and should be revised at the detailed planning stage.
8.0 ECOLOGY

INTRODUCTION

8.1 The findings relating to ecology set out at Chapter 8 of the original Environmental Statement (dated, November 2012) have been assessed against the proposed amendments described at Chapter 3 of the ES Addendum, and for completeness includes the updated results of the Invertebrate Survey undertaken in 2013 which has been submitted to the Council on 7th June 2013, and also updated Great Crested Newts undertaken in 2014.

8.2 This chapter replaces the original Chapter 8: Ecology contained within the November 2012 Environmental Statement. The updated Invertebrate Survey and support letter from RSK and also Great Crested Newts Survey (2014) are contained at Appendix 8.8 and 8.6 respectively, presented at Appendix D of this ES Addendum.

FINDINGS OF ES ADDENDUM: UPDATED ECOLOGY CHAPTER

8.3 This Section of the assessment considers the likely ecological impacts of the proposed development. This will include presentation of the baseline ecological survey information and an assessment of the proposed development on the habitats and species identified within the Site and protected species and designated sites, if relevant, identified within close proximity to the Site. Baseline Phase 1 habitat and associated protected species surveys are presented at Appendix A, Appendices 8.1-8.8.

8.4 This section is divided into the following broad sub-sections:

- planning policy and other legislative context;
- methodology and significance criteria;
- baseline information;
- assessment of effects including potential and predicted impacts;
- appropriate mitigation, compensation and enhancement;
- monitoring;
- residual impacts; and
- conclusions.
Planning Policy and Other Legislative Context

8.5 This section reviews the legislation that is relevant for the protection of flora, fauna and habitats. In addition, the existing national, regional and local ecological planning policy requirements within a range of policy documents are addressed. Sites, habitats and species of conservation value are material considerations in any planning decision and have policies at all geographic levels designed to safeguard their conservation status. In addition, the legal protection they are afforded requires developments to be planned appropriately so that legal offences are avoided.

National Legislation

8.6 The main pieces of legislation relevant for the protection of wildlife in the UK are:

- The Wildlife and Countryside Act (WCA) 1981 (as amended);
- The Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006; and
- The Conservation of Habitats and Species Regulations 2010 (as amended) – often referred to as the Habitats Regulations.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

8.7 The WCA is the major domestic legal instrument for wildlife protection in the UK. The WCA protects the most important habitats as Sites of Special Scientific Interest (SSSI), provides a level of protection to all nesting wild birds and affords protection to various other species listed in Schedules under the Act.

The Countryside and Rights of Way (CRoW) Act 2000

8.8 Part III of this Act deals specifically with wildlife protection and nature conservation. The CRoW Act strengthens the protection of designated SSSI’s and also makes it an offence to “recklessly disturb” the sheltering places of wild animals designated under Schedule 5 of the Act.

Natural Environment and Rural Communities (NERC) Act 2006

8.9 Section 41 of the NERC Act requires the listing of habitats and species that are considered to be of Principal Importance for the Conservation of Biodiversity in
England. The resulting list includes habitats and species in England, the majority of which have also been identified as priorities within the UK Biodiversity Action Plan.

8.10 The NERC Act requires that the Section 41 list be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the Act "to have regard" to the conservation of biodiversity in England, when carrying out their normal functions.

The Conservation of Habitats and Species Regulations 2010 (as amended)

8.11 These regulations transpose the EU Directive on Natural Habitats, and Wild Fauna and Flora (92/43/EEC) into domestic legislation. They afford a high level of protection to a variety of species that are considered important at a European scale. The Regulations identify European Protected Species and various habitats of importance within the European Union, with key sites being designated as Special Areas of Conservation (SAC). Any proposed development that may have a significant effect on a SAC or Special Protection Area (SPA) should be assessed in relation to the site’s ‘conservation objectives’, i.e. the reasons for which the site is designated. The amendments to the 2010 Regulations primarily apply to the creation and enforcement of marine nature reserves.

National Planning Policy Framework (NPPF)

8.12 The publication of the NPPF in March 2012 supersedes the majority of the previous national Planning Policy Statement and Planning Policy Guidance. Thus, it now forms the principal national planning policy for development. It sets out the Government’s key economic, social and environmental objectives and the planning policies needed to deliver them. There are a number of references and sections pertinent to ecology and biodiversity.

8.13 Core Planning Policy 17 states that “Within the overarching roles that the planning system ought to play, a set of core land-use planning principles should underpin both plan making and decision making” and bullet points 7, 8 and 9 state respectively:

- “Contribute to conserving and enhancing the natural environment and reducing pollution. Allocations for development should prefer land of lesser environmental value, where consistent with other policies in this Framework.
- Encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value.

- Promote mixed use developments and encourage multiple benefits from the use of land in urban and rural areas, recognising that some open land can perform many functions (such as wildlife, recreation, flood risk mitigation, carbon storage or food production).”

8.14 Section 11 of the NPPF relates specifically to “Conserving and Enhancing the Natural Environment”.

8.15 Paragraph 109 states that “The planning system should contribute and enhance the natural and local environment by:

- Protecting and enhancing valued landscapes, geological conservation interests and soils;

- Recognising the wider benefits of ecosystem services;

- Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

- Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and

- Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate”.

8.16 Paragraph 113 states that “local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks”. Referenced here is ODPM Circular 06/2005, which provides further guidance re the
hierarchical approach; but the Circular remains extant in its entirety within the NPPF.

### 8.17 Paragraph 118 states that “When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.

- proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site’s notified special interest is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;

- development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;

- opportunities to incorporate biodiversity in and around developments should be encouraged;

- planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and

- the following wildlife sites should be given the same protection as European sites:
- potential Special Protection Areas and possible Special Areas of Conservation;
- listed or proposed Ramsar sites;26 and
- sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

8.18 Paragraph 19 states “The presumption in favour of sustainable development (paragraph 14) does not apply where development requiring appropriate assessment under the Birds or Habitats Directive is being considered, planned or determined”.

8.19 Paragraph 125 states “By encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation”.

Local Planning Policy

Erewash Borough Council Local Plan, Saved Policies July 2008

8.20 The saved policies of the 2005 Local Plan include five key policies relating to ecology and nature conservation. These are detailed below.

8.21 EV10: Sites of Special Scientific Interest, regionally important geological sites and geo-morphological sites, local nature reserves and sites of importance for nature conservation:

- Development in or likely to affect Sites of Special Scientific Interest (SSSI) will be subject to special scrutiny. Where such development may have an adverse effect, directly or indirectly on the special interest of the site it will not be permitted unless the reasons for the development clearly outweigh the nature conservation value of the site itself and the national policy to safeguard such sites.

- Development likely to have a significant adverse effect on a local nature reserve, a site of importance for nature conservation or a regionally important geological/ geomorphological site, will not be permitted unless it can be
demonstrated that there are reasons for the proposal which outweigh the need to safeguard the nature conservation value of the site.

- In all cases where development is permitted which would damage the nature conservation value of the site or feature, such damage will be kept to a minimum. Conditions and/or Section 106 planning obligations will be used to secure necessary mitigation or compensatory measures.

8.22 EV11: Protected Species and Threatened Species:

- Development that would cause either indirect or adverse impacts on species that are protected by law or identified as nationally rare will only be permitted where:

  1) A full and detailed survey has been carried out by a qualified ecological consultant to determine the status of the population, the likely impact of all phases of the development and any mitigation that may be necessary.

  2) Proposals are submitted and supported by a Section 106 obligation that clearly demonstrates how the necessary mitigation will be achieved so that favourable conservation status of the species can be maintained on the site.

  3) It is not a European Protected Species as defined in the 1994 Conservation (Natural Habitats, &c.) Regulations (now the Conservation of Habitats and Species Regulations (as amended) 2010). Mitigation measures may be proposed in order to avoid or reduce disturbance to an acceptable level. However, permission will be granted only where impacts have been clearly identified in an ecological and/or geological statement, and acceptable measures to minimise or remove the impact can be implemented, managed or monitored in accordance with an agreed scheme. Priority will be given to retaining or replacing as many of the important features on the site. The borough council will require evidence to demonstrate that the retention or replacement is unviable prior to considering off site replacements, which will be allowed only as a last resort. Where such measures cannot be secured by appropriate planning conditions they will be secured via legal agreements and Section 106 obligations.
8.23 EV12: Nature Conservation – Planning Obligations and Conditions:

- In considering development proposals the use of planning conditions and planning obligations will be considered where necessary to offset harm and secure the beneficial management of features of major importance for wildlife.

8.24 EV13: Creative Conservation:

- Creative conservation will be carried out wherever opportunities arise. In particular, the Borough Council will improve the wildlife value of land in its ownership especially public open space. In its consideration of planning applications the Borough Council will seek to negotiate Section 106 planning obligations to create new or improved habitats where this is necessary to make the proposals acceptable in planning terms and where it cannot be achieved by imposing conditions on a planning permission.

8.25 EV14: Protection of Trees and Hedgerows:

- Planning permission will not be given for development which would destroy hedgerows, areas of woodland, ancient woodland, trees protected by a tree preservation order, or trees in a conservation area unless their removal would:
  - be in the interests of good arboricultural practice; or unless
  - the proposed development outweighs the amenity and conservation value of the protected trees, woodlands or hedgerows.

- If the removal of a hedgerow or one or more trees is permitted as part of a development, a condition may require that a replacement hedgerow or an equivalent number or more new trees be planted either on or near the site.

- Where trees are to be retained, planning permission will not be granted for development, including buildings, roads, pavements and underground services which will adversely affect the health of the trees.
Biodiversity Action Plans

8.26 Biodiversity Action Plans (BAPs) have been produced at central Government and Local Authority level. These contain measures for the conservation of a range of habitats and species. In the case of the UK BAP this has now been replaced by reference to the Section 41 species and habitats identified in the NERC Act 2006. Many but not all the habitats and species are the same but the responsibility has been devolved to the separate constituent countries of the UK and hence why in England it is now related to Section 41. However, a number of the plans produced for the UK BAP are still relevant. In the part of Derbyshire within which the proposed development is located, the relevant BAP is the Lowland Derbyshire Biodiversity Action Plan (Ref. 7-1.). The document ‘A Greenprint for Biodiversity in Erewash Borough’ (Ref. 7-2) has been produced by Erewash Borough Council and Derbyshire Wildlife Trust to translate the UK and Lowland Derbyshire Biodiversity Plans to a local level, which is relevant to the Stanton Regeneration Area.

8.27 The development will seek to facilitate relevant aims and objectives of the priority habitats and species on the NERC Act 2006, the Lowland Derbyshire BAP and the Greenprint for Biodiversity in Erewash Borough where possible, aiding the conservation of habitats and species listed within the three documents.

Methodology & Significance Criteria

8.28 The methodology used to assess the significance of impacts on ecological receptors is based on the Guidelines for Ecological Impact Assessment (EcIA), published by the Institute of Ecology and Environmental Management (IEEM) in 2006 (Ref. 7-3).

8.29 Areas and/or species of ecological value within the site are identified and the main factors contributing to their value are described. An ecological resource or feature is considered to be valuable (or have potential value) at the following scales:

- International;
- UK;
- National (i.e., England/Northern Ireland/Scotland/Wales);
- Regional;
PART TWO
Air Quality and Noise

- County;
- Borough (or Unitary Authority or City/district);
- Local (or Parish); or
- within immediate zone of influence* only.

*The zone of influence for a development is difficult to define, but for the purposes of this study, the zone of influence within which potential direct effects on flora and fauna may be reasonably anticipated is the planning application boundary and a radius not exceeding 2km around the proposed development. Whilst most of the potential impacts will be confined to the footprint of the development, the buffer is included to provide confidence in any assessment of impacts in the wider area.

8.30 The impact on a feature has a number of characteristics that need to be fully described before significance can be assessed. A number of factors need to be considered when describing and assessing impacts, which include:

- Direction (positive, negative or neutral impact);
- Magnitude (the amount or level of impact);
- Extent (area in hectares, linear metres, etc);
- Duration (in time or related to species life-cycles);
- Reversibility (i.e. is the impact permanent or temporary);
- Timing and frequency (e.g. related to breeding seasons); and
- Cumulative effects (between impacts from a number of sources).

8.31 Guidance from IEEM states that impacts should be determined as being significant when they have an adverse or positive effect “on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographical area”. Such impacts may be significant at the level of importance defined in the Evaluation section or, for habitats and species, at a lesser geographical scale. For example, limited impacts on woodland of County importance might be assessed as being significant at a Borough level of importance. This methodology supersedes previous matrix-based assessment methodologies.
8.32 Using this information and judgement, it is determined whether the effects will be significant or not on the integrity (sites/ecosystems) or favourable conservation status (habitats/species) of each ecological feature and the impact significance is determined at the appropriate geographical scale.

8.33 Where possible, levels of certainty are given to indicate the likelihood that both the predicted activity/impact and the associated ecological effect will occur. The IEEM guidance suggests using the following four-point scale to identify the levels of confidence arrived at by professional judgement:

- Certain
- Probable
- Unlikely
- Extremely unlikely

8.34 To provide consistency of impact assessment terminology throughout this ES whilst each impact identified has been assigned using the IEEM criteria this has been translated to a significance level on a scale of negligible, minor, moderate and major, as outlined in Table 8.1.
Table 8.1: Effect Significance Criteria

<table>
<thead>
<tr>
<th>IEA (1995) Effect Significance</th>
<th>Equivalent IEEM Assessment</th>
</tr>
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<tbody>
<tr>
<td>Significant</td>
<td>Significant Positive Impact on ecological integrity or conservation status at Regional, National or International level.</td>
</tr>
<tr>
<td></td>
<td>Moderate Beneficial</td>
</tr>
<tr>
<td>Non-significant</td>
<td>Minor Beneficial</td>
</tr>
<tr>
<td>Neutral</td>
<td>Negligible</td>
</tr>
<tr>
<td>Non-significant</td>
<td>Minor Adverse</td>
</tr>
<tr>
<td>Significant</td>
<td>Moderate Adverse</td>
</tr>
<tr>
<td></td>
<td>Major Adverse</td>
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Baseline Information

Baseline Data Collection

8.35 Baseline data was collected from desk studies and field surveys undertaken between 2007 and 2014, and comprises information on designated sites, habitats and species from the area within and around the Site. These baseline reports are provided as Appendices 8.1 - 8.8 (contained at Appendices A and D of this ES Addendum). A summary is provided below.

Desk Study

8.36 Information on nearby statutory designated sites assessed using the Multi-Agency Geographic Information from the Countryside website (www.magic.gov.uk).

8.37 A data search was undertaken by the Derbyshire Wildlife Trust in 2007 for records of protected/notable species and non-statutory designated sites within a 2.5km radius of the Site. This was updated in October 2009 and again in September 2011, with
another search for information on non-statutory designated sites within a 2km radius of the centre of the Site (SK466390).

8.38 In November 2009, Long Eaton Natural History Society provided records for fauna and flora in the western part of the Site; updated records were requested in October 2011. The complete desk-based study is presented in Appendix 8.1(Appendix A of this Addendum).

Field Survey

8.39 Details of methodologies for specific surveys can be found in the Technical Appendices on (i) habitats and vegetation, and (ii) notable and protected fauna. The Technical Appendices for notable and protected fauna contains survey reports for bats, water vole, badger, birds, great crested newt, reptiles, crayfish, aquatic invertebrates and terrestrial invertebrates.

8.40 Below is presented a brief outline of the survey methods used.

Phase 1 Habitat Survey

8.41 An initial Extended Phase 1 habitat survey was undertaken on the Site by Marishal Thompson between 3rd and 7th December 2007 (inclusive). The fieldwork comprised a walkover survey of the site identifying the different habitats and classifying them according to the habitats given in the ‘Handbook for Phase 1 Habitat Survey’ (Ref. 7.4). Subsequent to the Phase 1 survey, Marishal Thompson carried out more detailed surveys on four areas identified as being of interest for their ephemeral plant species.

8.42 A repeat Extended Phase 1 survey was undertaken by ecologists from URS on 28th & 29th July 2009, 20th & 21st of August 2009, on 6th & 7th July 2010 and 11th May 2010 to update and confirm the data relating to vegetation and habitats present within the Site. Habitats outside the Site were noted but not surveyed in detail.

8.43 An area of brownfield, located north of Lowes Lane, was identified as of higher ecological value (later class as ‘Open Mosaic on Previously Developed Land’, a UK BAP habitat), was resurveyed in May 2012. The survey sought to ascertain deviations in botanical assemblage since the initial survey and also to identify the rate at which natural succession was occurring.
8.44 The habitats within the Site were appraised for their suitability to support other notable species or assemblages that could be sensitive to the development proposals, in accordance with the ‘Guidelines for Baseline Ecological Assessment’ (Ref. 7.5). The results of the Phase 1 Survey are presented at Appendix A, Appendix 8.2.

Protected Species

8.45 A range of protected species surveys were carried out following the identification of suitable habitat features during the Extended Phase 1 survey. Protected species surveys were carried out for bats (including daytime inspections, emergence/re-entry and activity surveys), water voles, badgers, birds, great crested newts, reptiles, crayfish and aquatic and terrestrial invertebrates. Survey methodologies are described in more detail below.

Bats

8.46 The Site’s bat interest was assessed using a combination of:

- assessment of potential roosting locations (2008, 2009 & 2011);
- emergence and re-entry surveys on suitable structures (2009, 2010, 2011 and 2014); and
- activity surveys throughout the site (2010 and 2014).

8.47 Initial roost assessments of both buildings and trees were undertaken in 2008 by Marishal Thompson. Structures were appraised for suitable features, in particular access points, suitable roosting locations, environmental stability and surrounding habitat quality (including the connectivity of the site to surrounding areas). Based on the presence of these features, structures were assigned a risk category, or Bat Roost Potential (BRP), according to their likelihood of supporting bats (negligible, low, medium or high). In 2009, the interior of buildings were inspected for evidence of roosting bats (droppings, fur oil staining, an absence of cobwebs, urine spots and the animals themselves (dead or alive)). An updated structural BRP assessment was carried out in 2011 which, due to either a change in condition and/or use, or a change on the guidelines, resulted in a small number of buildings being reassigned.
The rationale for this reassignment is presented on a case by case basis in Appendix A, Appendix 8.3.

8.48 Three underground structures were identified, namely a tunnel, a coal bunker and an air raid shelter. These structures were inspected (as far as possible) for evidence indicating the presence of roosting bats in 2009 and again in 2011. The 2011 inspections were supplemented using remote detector emergence surveys.

8.49 In accordance with published guidelines (Ref. 7.6), emergence and re-entry surveys were undertaken on suitable buildings in 2008 and 2009. This involved surveyors with bat detectors (Batbox Duet) connected to recording devices, standing next to buildings observing features of interest (potential access points). Emergence surveys started approximately half an hour before and finished two hours after sunset; re-entry surveys begun two hours before and terminated at sunrise. Data recorded was analysed using appropriate software. Following the 2011 BRP assessments, buildings categorised as ‘moderate’ or ‘high’ received a full suite of surveys (two emergence and one re-entry). A sample of low / negligible buildings was also surveyed, though less intensively (typically one emergence and/or one re-entry). These surveys have been repeated in 2014 to update the information given the results from the 2011 surveys are now three years old and bats are often transient in their use of roosts. A detailed description of the bat surveys undertaken up to 2012 can be found in appendix 8.3 (presented at Appendix A of this Addendum). The results from 2014 will form an addendum to the ES once they have been completed.

8.50 In order to gain a site-wide understanding of the bat interest, activity surveys were undertaken in 2009 and 2010. Surveyors walked predetermined routes, noting and mapping any bats encountered. Remote detectors were deployed at set locations and left in situ for the night. Activity levels were recorded and mapped in order to highlight areas of significant importance. The results of the surveys undertaken in 2014 will form an addendum to the ES once they have been completed.

Riparian Mammals

8.51 The banks of suitable water bodies were inspected for evidence indicating the activity of water voles, otters and mink. The water vole survey methodology and
signs of presence noted followed those described by Strachan and Moorhouse (Ref 7.7). In addition, evidence indicating the presence of otter and mink (including spraints / faeces, feeding remains and footprints) was recorded and mapped. Surveys were initially carried out in 2008 by Marishal Thompson, with repeated survey visits undertaken in 2009 and 2011 by URS.

Badgers

8.52 A site walkover for signs of badger activity was carried out by Marishal Thompson in 2007. Update surveys were undertaken by URS in 2010 and by URS in 2011. All areas of suitable habitat were inspected for badger evidence including setts, latrines, footprints, hairs and snuffle holes. Where setts were found, they were categorised according to type (main, subsidiary, annexe or outlier) and current activity levels (well used, partly used, disused) in accordance with published methodology (Ref. 7.8). The results of the badger survey and assessment are presented as a confidential report in Appendix A, Appendix 8.4.

Birds

8.53 A Breeding Bird Survey (BBS) was undertaken between May and June 2008 by Marishal Thompson. In order to facilitate data collection and analysis, the Site was divided into four discrete areas, namely the Tip, South Works, North Works and Canal and Northeast Works (see Figure 7.5). The surveyor recorded the total number of adult birds along with behaviour indicative of breeding (calling, feeding and nest construction). Bird records were indicated on maps using standard British Trust for Ornithology (BTO) codes and assigned a conservation category in accordance with Eaton et al. (Ref. 7.9). An updated survey was undertaken between April and May 2010 and again between April and July 2012 by URS. The updated survey methodology was consistent with the initial appraisal. Complete bird records are presented in Appendix 8.5.

Great Crested Newts

8.54 The initial Phase 1 Habitat Survey identified the presence of twelve ponds within the Site and a further one adjacent to the Site (<10m away). During this initial survey, a Habitat Suitability Index (HSI) score was calculated for each pond. The HSI is a
standardised method of assessing the suitability of water bodies for supporting
great crested newts using environmental variables (Ref. 7.10).

8.55 In accordance with published guidance, four survey visits were made to the
identified ponds, with three of the following being used where practical: bottle
trapping, egg searching, netting and torch surveys. Where great crested newts were
detected, ponds received an additional two survey visits. Great crested newt
surveys were undertaken in 2007, 2008, 2010 and 2011 although not all ponds were
surveyed each year. However, all ponds were surveyed in 2011. Surveys were
carried out between the April and June, with two visits undertaken between mid-
April and mid-May. Surveys were undertaken during periods of suitable weather (i.e.
temperature above 5°C with no rain) and bottle traps were set at a density of
approximately 1 trap per 2m of shoreline where accessible. This methodology
follows that given in published guidelines (Ref. 7.11) for confirming the presence or
absence of great crested newts (four visits) and population size class estimation (six
visits).

8.56 In response to the finding of a GCN eft in Pond 6 in 2011 and in addition to a full
resurvey of Pond 6 (and the other ponds in the central and eastern part of the site),
a water sample was taken from Pond 6 during early June 2014 and sent to eb
analysed for GCN eDNA. This is a relatively new technique and has been shown to
be over 99% reliable in determining present/absence of GCN ponds during the
breeding season (Ref. 7.11a). As eDNA quickly degrades in 2014 Natural England
were accepting results of this technique from samples taken between 15th April and
30th June.

8.57 Additionally, refuge searching of the site was undertaken in conjunction with the
reptile survey during late July 2008. Complete survey results are presented in
Appendix D, Appendix 8.6.

Reptiles

8.58 Initial reptile surveys were undertaken in 2008 by Marishal Thompson, which
involved the placement of 60 artificial refuges (a mixture of roofing felt and tins
measuring approximately 0.5m²) (Ref. 7.12). The refuges were checked six times
between June and July. Further reptile surveys were undertaken by URS in 2009;
seventy artificial refuges (comprising roofing felt only, measuring approximately 0.5m\(^2\)) were distributed within areas of suitable habitat. The 2009 survey comprised seven visits undertaken during July and August. An updated reptile survey, focusing on suitable habitat to the north of Lowes Lane, was undertaken during September 2012. The latest survey utilised 150 artificial refuges (comprising roofing felt only, measuring approximately 0.5m\(^2\)), which were checked seven times during the month. The reptile survey results are presented in Appendix A, Appendix 8.7.

**Crayfish**

8.59 Water bodies were assessed as to their suitability for supporting white-clawed crayfish in July 2008 by Marishal Thompson and repeated by URS in 2011 using the published methodology (Ref. 7.13). The survey involved searching the banks of suitable water bodies for holes created / or used by crayfish and, where possible, manual searches under rocks and stones. Suitable water bodies searched at night using high-powered torches. The 2011 survey also included the use of live trapping under Natural England licence number 20114070.

**Other Invertebrates**

8.60 Marishal Thompson undertook an aquatic invertebrate survey between May and July 2008. The survey comprised two survey visits and reported on water beetles and bugs only. URS commissioned Colin Plant Associates to undertake a habitat appraisal in September 2009, during which the entire site was assessed as to its potential for supporting notable invertebrate assemblages. A targeted terrestrial invertebrate survey was undertaken in 2010 by URS associate Andy Godfrey; the survey concentrated on areas of bare or nearly bare ground, ruderal vegetation and scrub, utilising methods such as sweep netting and direct searching. URS carried out an updated invertebrate survey in 2012, again concentrating on the brownfield section located to the north of Lowes Lanes. In conjunction with the latest invertebrate survey update, a targeted butterfly survey was undertaken, which comprised four walked transects along the brownfield area (which was identified as an important area for butterflies through consultation with Butterfly Conservation). The transects were undertaken in April and May under suitable environmental conditions (Ref. 8.15). Additional survey records were provided by Butterfly
Conservation, who independently carried out butterfly transects of the brownfield area in 2012. An aquatic invertebrate survey was undertaken in November 2012 by URS. The surveys utilised the sweep sampling techniques, where each water body was subject to 20 sweeps of a hand held (2mm mesh) net. A qualitative assessment of plant structure and diversity was undertaken along with estimates of cover. The invertebrate samples were collected for identification in the URS laboratory.

8.61 The invertebrate survey results are presented in Appendix 8.8 and a single survey report (describing both aquatic and terrestrial surveys) was submitted to Erewash Borough Council as part of an addendum in 2013. The completed invertebrate surveys did not identify assemblages of greater value than those described within the Ecological Chapter and, as such, the conclusion of the impact assessment remains valid.

**Baseline Conditions**

**Statutory Designated Sites**

8.62 No Special Protection Areas (SPA) or Special Areas of Conservation (SAC), as designated under the Habitats Directive, are located within 2.5km of the Site boundary.

8.63 Sites of Special Scientific Interest (SSSIs) are statutory sites designated at a national level for their nature conservation interest. There are no SSSI’s within 2.5km of the Site boundary. The nearest site is Robinetts SSSI located 2.75km northeast from the Site boundary, followed by Attenborough Gravel Pits SSSI, which is situated 5.5km southeast. Robinetts SSSI is located at SK 492 421 and covers an area of 6.2ha. It is designated for containing one of the finest examples of acidic grassland in Nottinghamshire. The grassland comprises a variety of types, determined by areas of varying wetness and acidity within the site.

8.64 Attenborough Gravel Pits SSSI is located at SK 522 341 and covers an area of 221.2ha within both Nottinghamshire and Derbyshire. It is a nationally important site for its lowland eutrophic open waters with emergent vegetation, wet floodplain woodland, unimproved floodplain grassland, a rich assemblage of breeding birds associated with lowland open waters and their margins, and wintering birds, including shoveler *Anas clypeata* and bittern *Botaurus stellaris*.
Local Nature Reserves

8.65 Local Nature Reserves (LNR’s) are statutory sites designated at a county level for their nature conservation interest and recreational value. There are five LNRs present within 2km of the Site. These are listed in Table 8.2 below, with further details in Appendix 8.1.

Table 8.2: Local Nature Reserves

<table>
<thead>
<tr>
<th>Name</th>
<th>Area (Ha)</th>
<th>Ecological Feature</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trowell Marsh ER168</td>
<td>0.86</td>
<td>The range of habitats includes scrub, grassland, swamp and a species-rich marshy meadow. Within these habitats are a number of notable species including midland hawthorn, soapwort and purple loosestrife. The rich marshy meadow has clumps of soft rush and sedge with tussocks of tufted hair grass and a variety of herbs.</td>
<td>SK 479 397. 0.3km northeast of Site boundary.</td>
</tr>
<tr>
<td>Nottingham Canal</td>
<td>8.27</td>
<td>Canal</td>
<td>SK 483 414. 1.5km northeast of the Site boundary.</td>
</tr>
<tr>
<td>Stanton Gate</td>
<td>0.73</td>
<td>Habitat mosaic</td>
<td>SK 482 382. 0.1km to southeast of Site boundary, on south side of M1.</td>
</tr>
<tr>
<td>Stony Clouds</td>
<td>9.1</td>
<td>Contains a variety of habitats within a small area, including grassland, woodland and hedgerow. The majority of the site is grassland containing flowers such as harebell and yarrow. On the damper meadowland a variety of species including yellow rattle and lesser celandine are found. Both habitats are attractive to butterflies and other insects.</td>
<td>SK 477 376. 0.5km to south of Site boundary, on south side of M1.</td>
</tr>
</tbody>
</table>
### Pioneer Meadows

- **Area**: 6.79 Ha
- **Ecological Feature**: Habitats include neutral grassland, mixed broad-leaved woodland and plantations, ancient hedgerows and ponds with associated vegetation. Grassland plants include common toadflax, devil's-bit scabious and cuckoo flower. The site is also known for its hoverflies, butterflies and dragonflies including small copper and common blue butterflies.
- **Location**: SK 455 396. 0.5km to west of Site boundary.

### Non-statutory Designated Sites

#### Local Wildlife Sites (Sites of Importance for Nature Conservation (SINC))

- **8.66** Local Wildlife Sites (LWSs) are non-statutory sites designated at a County level for their nature conservation interest. There are a number of LWSs and candidate Local Wildlife Sites (cLWSs) within and around the Site, listed separately in Tables 8.3 and 8.4 below (and shown in Appendix 8.1). Candidate Local Wildlife Sites are sites that have been identified as having nature conservation interest, but where that interest has not been fully assessed against the Wildlife Site Selection Guidelines.

- **8.67** There are 20 LWSs’ within 2km of the Site boundary; four of which lie within the Site; namely Ilkeston Road Pond and Nutbrook Canal, Nutbrook Canal & Fields, Quarry Hill Lagoons and Sowbrook Pond, New Stanton.

#### Table 8.3: Local Wildlife Sites

<table>
<thead>
<tr>
<th>Name</th>
<th>Area (Ha)</th>
<th>Ecological Feature</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baguley's Wood, Grassland and Carr</td>
<td>ER031</td>
<td>Secondary broad-leaved woodland</td>
<td>SK453383. 0.2km to south of Site boundary at Grove Farm Tip.</td>
</tr>
<tr>
<td>Name</td>
<td>Ref</td>
<td>Area (Ha)</td>
<td>Ecological Feature</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------</td>
<td>-----------</td>
<td>-----------------------------------------</td>
</tr>
<tr>
<td>Bassett Farm Meadow</td>
<td>ER197</td>
<td>0.4</td>
<td>Semi-improved neutral grassland</td>
</tr>
<tr>
<td>Erewash Canal, Hallam</td>
<td>ER055</td>
<td>7.3</td>
<td>Standing open water</td>
</tr>
<tr>
<td>Furnace Pond, Dale Moor</td>
<td>ER090</td>
<td>0.4</td>
<td>Standing open water</td>
</tr>
<tr>
<td>Ilkeston Road Pond and Nutbrook Canal</td>
<td>ER188</td>
<td>2.7</td>
<td>Standing open water</td>
</tr>
<tr>
<td>Kirk Hallam Fishing Pond</td>
<td>ER047</td>
<td>1.5</td>
<td>Standing open water</td>
</tr>
<tr>
<td>Kirk Hallam Wood</td>
<td>ER043</td>
<td>1.0</td>
<td>Secondary broad-leaved woodland</td>
</tr>
<tr>
<td>Lindridge House Pond, Dale Moor</td>
<td>ER089</td>
<td>0.04</td>
<td>Standing open water</td>
</tr>
<tr>
<td>Nutbrook Canal &amp; Fields</td>
<td>ER046</td>
<td>13.5</td>
<td>Standing open water</td>
</tr>
<tr>
<td>Name</td>
<td>Ref</td>
<td>Area (Ha)</td>
<td>Ecological Feature</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------</td>
<td>-----------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Nutbrook Canal, Brook and Wet Woodland</td>
<td>ER184</td>
<td>3.6</td>
<td>Secondary broad-leaved wet woodland</td>
</tr>
<tr>
<td>Oakwell Brickworks &amp; the Beauty Spot</td>
<td>ER144</td>
<td>15.6</td>
<td>Unimproved neutral grassland</td>
</tr>
<tr>
<td>Quarry Hill Lagoons</td>
<td>ER201</td>
<td>3.0</td>
<td>Lowland swamp</td>
</tr>
<tr>
<td>Quarry Hill Quarry, Stanton</td>
<td>ER053</td>
<td>0.9</td>
<td>Secondary broad-leaved woodland</td>
</tr>
<tr>
<td>Rifle Range Pond</td>
<td>ER033</td>
<td>0.9</td>
<td>Standing open water</td>
</tr>
<tr>
<td>Sowbrook Pond, New Stanton</td>
<td>ER045</td>
<td>1.4</td>
<td>Standing open water</td>
</tr>
<tr>
<td>Stanton Hall Parkland</td>
<td>ER206</td>
<td>4.4</td>
<td>Wood-pasture and parks</td>
</tr>
</tbody>
</table>

8.68 There are seven candidate LWS within 1km of the Site boundary, five of which lie within the Site.

**Table 8.4: Candidate Local Wildlife Sites**

<table>
<thead>
<tr>
<th>Reference</th>
<th>Name</th>
<th>Area (Ha)</th>
<th>Ecological feature</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER R6424</td>
<td>Nutbrook Trail</td>
<td>7.32</td>
<td>Unimproved</td>
<td>SK472392. Within</td>
</tr>
</tbody>
</table>
In addition to the Local Wildlife Sites, there are also a number of semi-natural grassland sites identified by the Derbyshire Wildlife Trust (DWT). These are regarded by DWT to be similar in status to candidate LWSs. The sites are listed in Table 8.5 below.

Table 8.5: Semi-natural Grassland Sites

<table>
<thead>
<tr>
<th>Reference</th>
<th>Name</th>
<th>Area (Ha)</th>
<th>Ecological feature</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Shipley-Stanton Gate)</td>
<td>grassland and calcareous grassland</td>
<td>2.89</td>
<td>Site at northern boundary.</td>
<td></td>
</tr>
<tr>
<td>ER036</td>
<td>New Station Scrub</td>
<td>2.89</td>
<td>Marshy grassland and scrub</td>
<td>SK459391. Within Site at western boundary.</td>
</tr>
<tr>
<td>ER195</td>
<td>Thacker Wood</td>
<td>1.89</td>
<td>Ancient Woodland</td>
<td>SK457385. 0.2km to south of Site boundary at Grove Farm Tip.</td>
</tr>
<tr>
<td>ER R6602</td>
<td>Ironworks Pond and Swamp</td>
<td>3.71</td>
<td>Standing open water</td>
<td>SK469393. Within Site near northern boundary.</td>
</tr>
<tr>
<td>ER cLWS</td>
<td>Stanton Ironworks (North)</td>
<td>53.69</td>
<td>Habitat mosaic (UK BAP Habitat - Open mosaic on previously developed land)</td>
<td>SK477388. Within Site.</td>
</tr>
<tr>
<td>ER cLWS</td>
<td>Stanton Ironworks (South)</td>
<td>57.74</td>
<td>Habitat mosaic (UK BAP Habitat - Open mosaic on previously developed land)</td>
<td>SK460389. Within Site</td>
</tr>
<tr>
<td>ER143</td>
<td>Gallows Inn Bridge</td>
<td>0.36</td>
<td>Wet woodland</td>
<td>SK477404. 1.2km northeast of Site boundary,</td>
</tr>
</tbody>
</table>
Table 8.6: Other Recorded Sites of Interest

<table>
<thead>
<tr>
<th>Reference</th>
<th>Name</th>
<th>Area (Ha)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER052/3</td>
<td>Quarry Hill Quarry #2</td>
<td>0.34</td>
<td>SK470379. 0.3km to south of Site boundary.</td>
</tr>
<tr>
<td>ER041/3</td>
<td>School Lane Pond</td>
<td>0.08</td>
<td>SK466377. 0.6km to south of Site boundary.</td>
</tr>
<tr>
<td>ER032/3</td>
<td>Dale Road Pond</td>
<td>0.52</td>
<td>SK456381. 0.5km to south of Site boundary at Grove Farm Tip.</td>
</tr>
</tbody>
</table>
8.71 Surveys in December 2007 and July/August 2009 mapped the Phase 1 habitat types across the whole Site (see Appendix A, Appendix 8.2: Vegetation and Habitats, Figure 8.2), with complete species lists being prepared for each discrete habitat area (Appendix A, Appendix 8.2: Vegetation and Habitats). Further surveys were undertaken on the 6th & 7th July 2010 and again on the 11th May 2012 to update any changes to habitats.

8.72 Given the size of the Site, it has been subdivided into five distinct components reflecting ecological characters for the benefit of the reader as follows:

- Area 1 – Grove Farm Tip and area north of Stanton Bonna
- Area 2 – Stanton Ironworks south of Lows Lane (Stanhope Plant)
- Area 3 – Stanton Ironworks north of Lows Lane (CMP Plant)
- Area 4 – Rapid Flange site and Erewash Canal
- Area 5 – Nutbrook Canal and Corus Field

8.73 Additionally, tables are provided in Appendix A, Appendix 8.2 that summarise the waterbodies and hedgerows on and bordering the Site.

8.74 The main land-use within the Site is built development and hard standing but habitat types present include ephemeral/short perennial vegetation, semi-improved grassland, mixed plantation woodland, scattered scrub, hedgerows, open water, running water, swamp, and spoil heaps with smaller areas of semi-natural broadleaved woodland, amenity and improved grasslands. Habitat types and species compositions found in each area listed above are described in more detail in the Appendix 8.2: Vegetation and Habitats. Two notable species have been recorded...
present; is pepper-saxifrage (Silcaum silaus), a Derbyshire red data book plant, which
occurs along the verges of the Nutbrook canal and narrow leaved bird’s foot trefoil
(Lotus glaber) also a Derbyshire red data book plant.

8.75 The habitats present considered to be important on a local level because of the
relative abundance of such habitats in the local area, the species assemblages they
support and similarity to existing local wildlife sites, are grassland, ephemeral/short
perennial, open/running water and woodland. The ephemeral/short perennial
vegetation on the Site qualifies as a UKBAP habitat. In the review of BAP habitats in
2007, a new priority habitat type; Open Mosaic Habitats on Previously Developed
Land was included. By definition the habitats develop on disturbed ground and are
often transient but can persist in quarries, along railway lines etc that are not re-
developed. The habitats present provide a locus for a number of specialist
invertebrate species including a rage of butterflies and moths. Here are Stanton this
includes dingy skipper.

Protected Species

Bats

8.76 Derbyshire Wildlife Trust (DWT) provided records of pipistrelle (Pipistrellus
pipistrellus) and Daubentons bats (Myotis daubentoni) for the area.

8.77 Marishal Thompson undertook initial building inspections in 2008. At the time, 101
buildings were assessed according to their likelihood of supporting a bat roost
(negligible, low, medium or high). Of these, 72% were considered to have low to
negligible potential. Between 2008 and 2011, some 26 buildings (principally located
in the north of the Site) were demolished. Building 51, categorised as Medium BRP
in 2008, was largely destroyed by fire. Of the remaining buildings, a small number
had their BRP (as originally assigned by Marishal Thompson) modified according to
current conditions and guidelines. This modification in BRP was based on the
following factors: the presence of suitable roosting locations and access points,
environmental stability, level of disturbance and the quality of surrounding habitat
(including connectivity to the wider landscape). One building (21) was upgraded
from Low to High, and was subsequently confirmed as a bat roost. In contrast,
Buildings 7, 27, 51 (due to fire damage) and 27 were downgraded from Medium to
Low BRP. As an example, Building 24 (downgraded from Medium to Low BRP) was constructed from prefabricated steel (lack roosting locations and environmental stability), surrounded by hard standing (poor quality habitat) and supported heavy industry (i.e. was subject to frequent and extensive disturbance). The bat survey data is located in Appendix A, Appendix 8.3. These results will be confirmed and updated in an addendum, once the 2014 surveys are complete.

8.78 Activity surveys (2010) found a generally low level of bat activity within open terrestrial areas, comprising mainly of foraging and commuting pipistrelles and occasional commuting noctules (*Nyctalus noctula*). An increased level of bat activity was observed over open water, consisting mainly of Daubenton’s bats. Brown long-eared (*Plecotus auritus*) and Natterer’s bats (*Myotis nattereri*) were occasionally recorded in areas of more dense cover, close to scrub, hedgerows and woodlands. These results will be confirmed and updated in an addendum, once the 2014 surveys are complete.

8.79 Emergence and re-entry surveys, undertaken between 2009 and 2011, identified three confirmed (2, 10 & 21) and four probable bat roosts (15, 17, 30 and 61), all within buildings. The roosts supported brown long-eared bats, common pipistrelle or a mixture of both. Each roost only supported a low number of bats (equal to or less than 3 individuals) and likely represented bachelor roosts comprising males and/or non-breeding females. Given the extent of roosting habitat (including suitable buildings) in the local area, the Site is considered to be of Local importance to bats.

8.80 The level of activity and species present are typical of the local area, therefore the value is considered to be Local.

**Water Vole**

8.81 DWT supplied records of water vole (*Arvicola amphibius*) presence situated on or close to the Site over the last ten years; these included the Nutbrook Canal, the Erewash Canal, ‘Ilkeston Road Pond’ and the ‘Ironworks Pond’. Sites with water vole presence recorded in the last three years include the River Erewash, the River Nutbrook and the Nutbrook Canal.
8.82 Water vole evidence was found on the Nutbrook Canal and the adjacent fishing ponds either side of Ilkeston Road in 2009. Some possible (but dated) evidence was also found in the 'Ironworks Pond'; however, no signs were located during the 2011 surveys.

8.83 It is worth noting that smashed mussels were frequently found along the banks. Although not definite, it is likely that these could be mink or otter feeding remains. Mink have been seen more commonly in the area since 2006 and are often known to exert an unsustainable predator pressure on water vole populations. In the past there has been a relatively strong population of water voles in this area, but these survey results indicate this is now a small and possibly fragile population. Due to the general pattern of decline of water vole populations still occurring as a result of mink predation in lowland Derbyshire, if still extant this population would be considered important at Borough level.

Badger

8.84 All information relating to badger can be found in Appendix A, confidential Appendix 8.4.

Birds

8.85 When taken together, the desk-based study (involving the Derbyshire Ornithological Society) and field surveys resulted in a total of 65 bird species (including 46 notable species) being recorded on and around the Site in recent years (Appendix 8.5). Of particular note is the presence of three Schedule 1 species (Wildlife and Countryside Act, 1981) including little ringed plover (Charadrius dubius), peregrine (Falco peregrinus) and kingfisher (Alcedo atthis), recorded and observed during field surveys and black redstarts (Phoenicurus phoenicurus), recorded in recent years. Due to the presence of regionally and nationally scarce birds, the avian population is considered to be of County importance.

Great Crested Newt

8.86 The DWT data search revealed two records of great crested newt (Triturus cristatus) dated 1995 and 2002, within 500m of the Site boundary. In 2011 DWT provided two
further records of great crested newt within the Site, at surveyed pond locations 9 and 10 (Appendix D, Appendix 8.6, Figure 8.6).

8.87 During the 2009 surveys, pond surveys and terrestrial refuge searches identified a population of great crested newts, all situated at the west side of the Site. The peak count of great crested newts seen in any one pond survey was 7, and the maximum number seen during terrestrial refuge searching was 10. In 2011, the peak count of adult great crested newts seen in any one pond was 13. A large number of smooth newts (Lissotriton vulgaris) were caught and seen. There were also several sightings of common frogs (Rana temporaria) and common toads (Bufo bufo).

8.88 This places the population at the lower end of a ‘medium’ population (Ref. 7-11), which was recorded only at the western end of the Site. As surveys are unlikely to record all newts present and that the ponds are surrounded by extensive, good quality habitat, it is considered that the actual population using the Site is at least ‘medium’ sized. Populations of great crested newts are widespread throughout this part of Derbyshire and as such the great crested newt population at the Site is considered to be important at Borough level.

8.89 Further details of great crested newt surveys and results can be found in Appendix 8.6.

8.90 An immature great crested newt (eft) was recorded in Pond 6 during an aquatic invertebrate survey, undertaken by URS in November 2012. This was the first record of great crested newt from the main area of the Site, and may represent a recent colonisation of the waterbody following a particularly wet year. No great crested newts were previously recorded from Ponds 6, 7 or 8.

8.91 Surveys of the ponds in the central and eastern part of the proposed development have been repeated in 2014 and the results were all negative. The eDNA sample taken from Pond 6 in 2014 was negative and it is assumed that GCN are not present.

**Reptiles**

8.92 DWT initially provided records for slow worm (Anguis fragilis) and grass snake (Natrix natrix) at SK 475 409 - a distance of 1.5km north from the Site boundary. In 2011 three further records of grass snakes were provided for the following locations:
SK 4763 3738 (Sandiacre), SK 4842 3840 (Stanton Gate LNR) and SK 4767 3744 (Stoney Clouds LNR).

8.93 Positive survey findings have included a grass snake sighting on the north bank of the reservoir within Stanton Works and both slow worm and common lizard (*Zootoca vivipara*) under artificial refugia and amongst rubble near the northern boundary of the Site. Although these species have been found in small numbers, it is likely that larger populations exist than have been identified through surveys, due to the extent of existing refuge opportunities throughout the main Site. The Site provides a wide range and abundance of refuge and basking opportunities, hibernacula, feeding opportunities and movement corridors for reptiles and is therefore considered to be important at Borough level.

**Crayfish**

8.94 The DWT data search did not produce any records of either white-clawed or signal crayfish within 2km of the Site. A habitat appraisal found two water bodies to have low/medium potential for white-clawed crayfish – The Nutbrook and the Ironworks pond. The remainder of the water bodies were assessed to have negligible potential for white-clawed crayfish. The 2008 surveys found no firm evidence of crayfish presence.

8.95 The Nutbrook canal and Ironworks pond were resurveyed in October 2011. The survey comprised a habitat assessment along with the use of live traps. Although both water bodies appeared suitable for supporting white-clawed crayfish, the surveys did not return any positive records.

**Invertebrates**

8.96 DWT provided records for a range of invertebrates that have been recorded at the Site. This included site visits in 2008 and 2009 by Long Eaton Natural History Society who recorded beetles, dragonflies, slugs and snails, butterflies and moths, Hemipterans (true bugs), centipedes, grasshoppers and crickets, Dipterans, arachnids (spiders and harvestmen) etc all within an area known as the ‘former Dale Plant’ towards the western end of the Site.
8.97 A total of 27 species of water beetle were recorded during the aquatic invertebrate survey in 2007. The only species of conservation concern is *Rhantus suturalis*, a water beetle which is scarce. This species is typically found in disturbed or newly cleared water-bodies and has a scattered distribution in England, primarily in southern areas.

8.98 Thirteen species of aquatic bug (Hemiptera) were recorded, with the majority being widely distributed and without specific habitat requirements.

8.99 Thirteen species of aquatic mollusc were identified, with a number of bivalves remaining unidentified. All of the species are widely distributed in aquatic habitats although a number are associated with clean situations of low conductivity.

8.100 The majority of the remaining aquatic species are widely distributed with moderately generalist habitat requirements, or at least widely distributed among aquatic habitats. Only the two species of water beetle *Haliplus flavicollis* and *Haliplus fluviatilis* are indicative of specific habitat conditions, namely large open water bodies.

8.101 The overall aquatic invertebrate fauna is typical of the type of water bodies present within the Site; the presence of a small number of scarce species is always expected. As such the assemblage is considered to be important at a Local level.

8.102 The terrestrial invertebrate surveys concentrated on areas of bare or partially bare ground, various grasslands, as well as scrub, perennial and ruderal vegetation and a single small marsh.

8.103 A total of 225 species were identified including four UK Biodiversity Action Plan (BAP) Lepidoptera, one former extinct but re-colonised bug, a Red Data Book fly, another four Nationally Scarce Diptera and a Nationally Scarce solitary bee. The three UK BAP species of Lepidoptera are all common and widespread. The rhopalid bug *Stictopleurus punctatonervosus* was considered to be extinct in Britain for most of the last century but in the mid to late 1990s it appears to have re-colonised southern England; it is now recorded relatively frequently in southern England and appears to be spreading northwards. The presence of four unidentified cone-head nymphs in the marsh at Site 6 is also an important record since cone-heads only
appear to have reached Derbyshire recently. Further details are provided in the full invertebrate report, attached as Appendix D, Appendix 8.8.

8.104 Butterfly surveys, undertaken during 2012, identified twelve species including the UKBAP listed dingy skipper (*Erynnis tages*) and small heath (*Coenonympha pamphilus*). A peak count of 25 dingy skippers was recorded, all originating from the brownfield area to the north of Lowes Lane.

8.105 The overall terrestrial invertebrate assemblage is considered to be of Borough level of importance.

Further Habitats

8.106 Habitats outside of any non-statutory designated wildlife sites are considered to be important on a Local level for the species assemblages they support and similarity to existing local wildlife sites.

Evaluation Summary

8.107 Table 8.7 below provides a summary of the conservation value assessed for each ecological feature identified:

**Table 8.7: Evaluation Summary**

<table>
<thead>
<tr>
<th>Receptor</th>
<th>Attributed Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Statutory Designated Sites</strong></td>
<td></td>
</tr>
<tr>
<td>Robbinetts SSSI</td>
<td>National</td>
</tr>
<tr>
<td>Attenborough Gravel Pits SSSI</td>
<td>National</td>
</tr>
<tr>
<td>Trowell Marsh LNR</td>
<td>County</td>
</tr>
<tr>
<td>Nottingham Canal LNR</td>
<td>County</td>
</tr>
<tr>
<td>Stanton Gate LNR</td>
<td>County</td>
</tr>
<tr>
<td>Stony Clouds LNR</td>
<td>County</td>
</tr>
<tr>
<td>Pioneer Meadows LNR</td>
<td>County</td>
</tr>
<tr>
<td><strong>Non-statutory Designated Sites</strong></td>
<td></td>
</tr>
<tr>
<td>Receptor</td>
<td>Attributed Value</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Baguley's Wood, Grassland and Carr</td>
<td>County</td>
</tr>
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<td>Oakwell Brickworks &amp; the Beauty Spot</td>
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<tr>
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<td>Stanton Hall Parkland</td>
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<td>Stony Clouds LNR and adjacent grassland</td>
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<td>Receptor</td>
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<tr>
<td>Ironworks Pond and Swamp</td>
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<td>Stanton Ironworks (South)</td>
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<td>Nutbrook Canal &amp; fields complex</td>
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**Miscellaneous Wildlife Sites**

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<td>Dalemoor Farm Pond</td>
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**Protected / Notable Species**
### Receptor Attributed Value

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<td>Reptiles</td>
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<td>Habitat assemblage outside designated/candidate sites</td>
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### Assessment of the Effects Including Potential and Predicted Impacts

8.108 This section reviews the proposals for development of the Site and assesses the potential impacts and effects on the identified potential ecological receptors (sites, habitats and species) from the baseline surveys.

### Masterplan

8.109 Broadly the development will be as described below:

- The eastern part of the Site is to be developed for employment uses with open space fringing the north
- The central core of the Site is to be predominantly residential;
- Sports and recreational spaces are to be located north of the canal;
- An earth bund will be erected in the northwest of the central section, to alleviate noise from the existing factories;
- The western parts of the Site save for existing development and agriculture is to be set-aside for nature conservation. However, the waste tip within the western section is required to be restored before it can be utilised for nature
The earthworks required for this are subject to a separate planning application but once restored will be available within the Masterplan for nature conservation use.

**Construction Phase Effects**

8.110 The following assessment applies specifically to the construction phases of the development and includes effects arising from the demolition of existing areas and structures, earthworks and the subsequent construction of residential dwellings and industrial buildings and associated infrastructure.

**Statutory Designated Sites**

8.111 The two closest SSSIs are over 2.5km from the Site and both are designated for habitat features. Because of the distances involved, no direct impacts on both SSSIs are anticipated and, as there is no significant air quality impacts predicted on the SSSIs (see Chapter 9; Table 9.6).

8.112 There are five Local Nature Reserves in the surrounding area. Three of these (Nottingham Canal, Stony Clouds and Pioneer Meadows) are over 5km from the Site; as such, no direct or indirect impacts are anticipated.

8.113 Two Local Nature Reserves (Trowell Marsh and Stanton Gate) are within 1km of the Site. No impacts are anticipated on Stanton Gate LNR, as it is situated on the other side of the M1 from the proposed development. Trowell Marsh LNR (also ER168) is situated to the north of the eastern part of the Site and there is existing development between it and the Site and as such no impacts are anticipated.

**Non-statutory Designated Sites**

8.114 There are 30 non-statutory designated sites (16 LWS and 14 cLWS) within 2km of the Site boundary. Of these, four LWS and five cLWS lie either partially or entirely within the Site boundary. There are also seven other sites of interest provided by DWT; one within and six surrounding the Site.
All of the non-statutory sites outside of the Site boundary are designated for notable habitat features and so, based on the conclusions in the air quality Chapter 9; Table 9.6, it is assessed that there will be no significant direct or indirect impacts on these sites.

Sites with Potential for Impacts

The development proposals have the potential to adversely impact on one or more of the ten non-statutory sites (four LWS, five cLWS and one site of interest) that lie either partially or entirely within the area available for development and are listed below:

Local Wildlife Sites

Ilkeston Road Pond and Nutbrook Canal (ER188, Figure 8.1): although this site lies within the Site boundary it is retained along with fringing woodland to the south east within the proposed development and no significant impacts are anticipated.

Nutbrook Canal & Fields (ER046, Figure 8.1): The canal lies within the Site boundary but the fields are outside the Site. There are no proposed earthworks or construction activities in the vicinity of this site and so no significant impacts are anticipated.

Quarry Hill Lagoons (ER201, Figure 8.1): most of this site lies outside of the Site boundary and the part within the Site remains undisturbed by the development being situated in an area of open space. There is the potential for indirect impacts on the site from dust generated by earthworks in proximity but the risk of any significant adverse impact is assessed to be low, as standard dust suppression measures will be implemented as part of good working practices (see Chapter 9). There is also the potential for indirect impact from changes in surface hydrology but based on the findings presented in Chapter 7, no significant impacts are anticipated provided that the mitigation measures outlined in Chapter 7 are being undertaken.

Sowbrook Pond, New Stanton (ER045, Figure 8.1): this site is located within the Site boundary but is to be retained within the proposed development. There is no risk of indirect impacts, as the site is distant from any proposed earthworks or development.
Candidate Local Wildlife Sites:

8.121 Nutbrook Trail (Shipley-Stanton Gate ERR6424) forms part of the northern boundary but in the south east passes into the Site. It is a dismantled railway line and has been described by Derbyshire Wildlife Trust (DWT) as ‘unimproved grassland and calcareous grassland’. The vegetation surveys undertaken for this application recorded the grassland as semi-improved; this conclusion was based on its disturbed nature and limited species composition. However, the cLWS does meet the minimum requirement of eight points for grassland ‘Gr4’ (semi-natural grassland on post-development sites), as stipulated by the Derbyshire Wildlife Sites Handbook (Ref 7-14) for inclusion as an LWS. Also, the mosaic qualifies as a UKBAP habitat type; Open mosaic on previously developed land. Whilst most of the length of this site is retained along the northern boundary and will not be significantly impacted by the development; approximately 300m in the south east passes through an area that may be required to be re-graded, although it is to be used as informal open space and then the remaining 400m that runs to the south eastern boundary is within an area designated for employment use in the Masterplan. This amounts to approximately 26% of the site by length and without mitigation this is assessed to be a Moderate Adverse impact.

8.122 New Station Scrub (ER036) is located west of Ilkeston Road and whilst most lies within the Site boundary it is expected to be retained within the development as part of a wildlife area. It is anticipated that the area will be enhanced through habitat management of the wider area. The New Station Scrub site is not considered currently to meet the minimum requirements for ‘scrub community Sc2’ (Ref. 7-14), as the area does not support rare or grazing sensitive plant species. There are no predicted impacts on this site from the development.

8.123 Ironworks Pond and Swamp (ERR6602) is situated in the north of the Site. The pond along with the surrounding secondary woodland and open water is to be retained as part of the wide swathe of informal open space along the north of the development. The Ironworks Pond does not meet the requirements of Stw1 - 4 for inclusion as an LWS (Ref 7-14). No swamp was recorded from near the Ironworks Pond. There are no predicted impacts on this site from the development.
8.124 Stanton Ironworks South cLWS occupies most of the western part of the Site including, at its eastern end, land earmarked for residential development. A large proportion of the cLWS however occupies the western part of the development, which has an area of existing employment land but the majority is earmarked for nature conservation, recreation and continued agricultural use. Under the criteria described by DWT (Ref 7-14), the whole of the area outlined as a cLWS does not achieve a sufficient score to be considered as ‘Mh2’, nor does it contain sufficient structural heterogeneity to be classed as ‘Mh3’. However, parts of the area are likely to qualify as LWS based on species criteria INV 3 for invertebrates and potentially AM3 for great crested newts. Part of the site will be lost to development and further areas, whilst designated for wildlife and informal recreation towards the western end, are subject to a separate planning application to restore Grove Farm Tip. Thus there will be direct loss of parts of the site and other areas may be subject to indirect impacts as a result or restoration work. As such it is assessed that without mitigation there is the potential for a **Moderate Adverse** impact.

8.125 Stanton Ironworks North cLWS includes most of the north eastern part of the Site, with a small area in the southeast outside of the Site, adjacent to the M1 motorway. Parts of the cLWS are unlikely to qualify (Ref 7-14)) as they comprise concrete hard standing and buildings but other more vegetated areas are likely to satisfy the criteria for mixed habitat and structural mosaics (UKBAP Open mosaic on previously developed land) and the canal freshwater habitats. The majority of this site is shown on the Masterplan as earmarked for recreational development (sports grounds) with the remainder inside the Site towards the boundary highlighted as informal open space. In addition, the construction of a noise attenuation bund in the northwest section will result in the temporary loss of secondary birch woodland and bramble scrub. As such it is assessed that without mitigation there is the potential for a **Moderate Adverse** impact on this site.

**Other Sites of Interest:**

8.126 Grove Farm Tip is situated in the west of the Site and is included within Stanton Ironworks South cLWS and is being retained.

**Vegetation and Habitats:**
There are only relatively small areas of habitat within the proposed Site that are not included within either an LWS or cLWS and thus potential for impacts on these have been assessed above.

Poor Semi-Improved Grassland: There is a narrow strip of grassland along the south-western boundary of the Site to the south of the tip area that lies outside of the Stanton Ironworks South cLWS. These fields are being retained as part of the development and as such will not be impacted by the development.

Hedgerows: With the exception of H8, the other hedgerows identified as meeting the criteria for designation as ‘Important Hedgerows’ are on the western boundary of the Site and, as such, are to be retained as part of the nature conservation area. Unless there is a requirement to remove H8, as part of any essential earthworks, this too will be retained. Other hedgerows identified within the Site are located generally on the Site boundary or along roadsides and as such are likely to be retained.

Amenity Grassland: There are areas of well managed amenity grassland scattered throughout the Site and these areas are in locations for residential development. The nature conservation value of these areas is low and is easily re-creatable and so loss to the development is not considered to be significant.

Open Water: There is a large reservoir in the central southeast area of the Site. Under current proposals, this water body will be lost to residential development. The reservoir is large (approximately 80 x 80m) with steep vertical banks. The depth is over 2m and the shore and sides are a combination of concrete and earth banks. The east bank is vertical concrete with an adjacent area of short grass. The south bank has dense continuous scrub and semi-mature broadleaved trees. There is a small range of marginal species around the waterbody but its overall value is low and so the loss of this highly artificial waterbody to the development is not considered to be significant.

Protected Species

Bats
8.132 As European protected species, all bats and their roosts receive strict legal protection under the Conservation of Habitats and Species Regulations 2010 (as amended) and also under the UK Wildlife and Countryside Act 1891 (as amended). Whilst bat commuting routes and foraging areas are not specifically protected, their removal is likely to result in a detrimental effect on the local population.

8.133 Brown long-eared bat and noctule, both of which were recorded during surveys, are listed on the UK BAP and Section 41 of the NERC Act 2006 as Priority Species for Conservation in England.

8.134 Roosting Bats: The Construction Phase, in absence of mitigation, will result (currently, based on surveys from 2011), in the direct destruction of three confirmed and four probable bat roosts. Collectively, these roosts have been assessed to be of Local importance for bats, given the extent of roosting habitat (including suitable buildings) in the immediate local area. Only small numbers were recorded and they are not considered to be major or significant roosts for the species recorded; brown long-eared bat, common pipistrelle, which are two species that are still widespread and common. The loss of these small roosts is assessed not to be significant for the maintenance of either species in the locality and as such their loss will not result in a significant impact on the status of either species in the area. However, all bat species and their roosts receive strict protection under domestic and European legislation and so without mitigation any bats present in roosts during the demolition works could be killed, injured or trapped, resulting in an offence. It is not expected that the results in 2014 will be significantly different from those obtained previously but any amendments to the above will be provided in the addendum, once the 2014 surveys have been completed.

8.135 Foraging and/or flight lines may also be lost through the removal of buildings, hedgerows and tree lines. Bat activity surveys identified a low level of activity throughout the Site and no significant flight lines. The disruption of flight lines is unlikely to result in habitat fragmentation / population isolation to such an extent that it adversely affects the local conservation status of bats. Given the low levels of activity recorded and extensive habitat available in the local area, any disruption of flight lines will not result in a significant impact on the conservation status of the local bat population. It is not expected that the results in 2014 will be significantly
different from those obtained previously but any amendments to the above will be provided in the addendum, once the 2014 surveys have been completed.

8.136 The Site is currently used for heavy industry; therefore, demolition/construction operations are unlikely to result in further disturbance. There is the potential for an increase in dust, arising from demolition and construction activities, which could result in a reduction in the quality of foraging habitat and roosting locations but the risk of this happening is considered to be low provided best practice dust suppression measures are implemented and will not result in a significant impact on the conservation status of the local bat population.

8.137 The overall impact on bats, arising from the demolition/construction phase is likely to result in a **Negligible** impact on the conservation status of the local bat population.

**Water Vole**

8.138 Water voles and their places of breeding and resting receive protection under the UK Wildlife and Countryside Act 1891 (as amended). The species is also listed as a priority species under Section 41 of the NERC Act 2006, and on both the UKBAP and LBAP.

8.139 All of the water bodies shown to support water voles (i.e. fishing pond west, fishing pond east and Nutbrook canal) will be retained within the development. Vegetation immediately surrounding these water bodies is also to be retained and, where possible, enhanced. Thus no significant direct effects on water vole arising from the construction phase are anticipated.

8.140 Indirect effects on water vole could result during the construction phase from an increased human presence (disturbance) and an increased risk of pollution events. However, the canal and ponds are situated away from the major construction areas and it is not expected that there will be a significant impact on water voles. There is the potential for accidental spillages or surface run-off reducing the water quality and hence indirectly affecting water voles. However, it is assessed that the risk of this happening is low and by following standard good practice and prevention and measures this risk is reduced even further and should it occur be limited in both extent and duration.
8.141 Together, it is assessed that there will not be any significant impact on the local water vole population from direct and indirect effects arising from the construction phase.

**Badger**

8.142 All information relating to badger can be found in appendix A, confidential Appendix 8.4.

**Birds**

8.143 The development of the Site will result in a loss of a number of habitat types including semi-improved grassland, mixed plantation woodland, scattered scrub, hedgerows, open water and previously developed land. This loss will include both nesting and foraging habitat for a range of bird species including little ringed plover and black redstart, species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and species listed on the RSPB red and amber lists of species of conservation concern, including skylark (*Alauda arvensis*), yellowhammer (*Emberiza citronella*), lapwing (*Vanellus vanellus*) and starling (*Sturnus vulgaris*).

8.144 The demolition of structures and earthworks will result in the short-term increase in habitat, particularly for species favouring brownfield sites but this gain will be temporary and, overall, there will be a loss of habitats to the development. This loss however is not wide scale, as large parts of the site do not currently provide high value nesting and foraging habitat. Much of the higher value areas are retained as part of the development, particularly the land to the west and along the northern boundary. Here also short mosaic habitat suitable for a number of brownfield specialists will be maintained and much of the habitat for the farmland bird species recorded is also being retained. The residential development and soft landscaping associated will, even in the short term, start to provide new habitat suitable for a range of the common passerine species found in the area. Overall it is assessed that there will be short-term Moderate Adverse impacts on a number of species but at the same time short-term Minor Beneficial impacts for a small range of brownfield specialists.

8.145 An increase in human presence and construction / demolition activities will result in an increased level of disturbance. There is also the potential for an increase in
airborne dust particles, resulting in a reduction in the quality of foraging and nesting habitat but the risk of this happening is considered to be low provided best practice dust suppression measures are implemented.

8.146 However, noise levels are anticipated to increase beyond the current baseline and may interfere with calling and singing and this is considered likely to result in a **Minor Adverse** impact.

8.147 Overall the impact during the construction phase is likely to be **Negligible** for most species but **Minor Adverse** for a number of species.

**Great Crested Newts**

8.148 Great crested newts and their places of breeding and resting receive protection under the Conservation of Habitats and Species Regulations 2010 and also under the UK Wildlife and Countryside Act 1981 (as amended). The species is also listed as a priority species under Section 41 of the NERC Act 2006, the UKBAP and LBAP.

8.149 Targeted surveys undertaken 2007 - 2011 indicated that great crested newts were restricted to the western part of the Site; however, an incidental record of an eft from Pond 6 (a shallow length of ditch alongside the large reservoir; Pond 8) during an aquatic invertebrate survey in autumn 2012 has highlighted their presence within the south central section of the development. Ponds 6, 7 and 8 were all previously negative when surveyed for great crested newt; the finding of the eft here in 2012 indicates either a recent colonisation or a very small population. Based on this, it is not expected that there will be an impact on the favourable conservation status of the great crested newt population.

8.150 A resurvey of Ponds 1-9 in 2014 did not identify great crested newts, including in Pond 6. The ‘eDNA’ sample from Pond 6 also returned negative for the presence of great crested newts. Great crested newt surveys undertaken during the past ten years have never detected the species. This, couple with the use of contemporary techniques such as DNA testing, indicates that the species is likely to be absent from Pond 6. The occurrence of an eft is somewhat of an anomaly and the great crested newts are not thought to be permanent residents of the waterbody.
8.151 The areas on the west side of the Site, where great crested newt ponds are known within 250m of the Site boundary are not disturbed by the development; however, separate to the development, earth works are required to restore and stabilise the Grove Farm Tip area in the west. This is subject to a separate planning application and so any impacts on great crested newts will be required to be dealt with under this separate application.

8.152 Provided there is an agreed licensed scheme in place for the population based in Pond 6, it is assessed that there would not be any significant effects from the construction phase of this development.

Reptiles

8.153 The widespread species of reptile are protected under the Wildlife and Countryside Act 1981 (as amended) but only in so far as “deliberate” killing or injury. All the common species are listed as priority species under Section 41 of the NERC Act 2006, the UKBAP and LBAP.

8.154 Common lizard and slow worm have been shown to be present in suitable areas of habitat along the northern section of the Site and although not specifically surveyed, they are also likely to be present in suitable habitat elsewhere throughout the Site. The clearance/loss of suitable habitat to the development particular the grassland and previously developed land has the potential to squeeze the reptiles into significantly smaller parcels of land, which is likely to result in overloading of the carrying capacity. The effect will be higher levels of competition, which will reduce the population fitness and increase the potential for large scale mortality as numbers readjust to the available habitat. An increase in human presence is likely to result in the disturbance of reptiles. Without mitigation, it is assessed that this would result in a Moderate Adverse impact on the populations present. There is also the risk of killing and injury of animals, which could constitute an offence under the W&C Act 1981 (as amended).
Grass snake has been recorded from the Site; unsurprisingly, it has been closely associated with aquatic habitat. Animals in the northern section are likely to occur principally in areas that will not be subject to loss or disturbance i.e. adjacent to the Nutbrook canal and fishing ponds. As such, it is assessed that there is unlikely to be any significant impacts associated with the construction phase. Grass snakes occurring in the south of the Site, particularly around Ponds 6, 7 & 8, are likely to be subject to a loss of foraging habitat.

The loss of habitat coupled with anticipated increases in levels of disturbance is likely to result in a **Moderate adverse** effect on widespread reptiles.

**White-clawed Crayfish**

Two water bodies with the potential to support white-clawed crayfish were identified, namely the Nutbrook canal and Ironworks fishing pond; no evidence indicating the presence of white-clawed crayfish was recorded. Both of the aforementioned waterbodies are retained within the development and as such, even if the species is present, it is not anticipated that there will be any significant impacts during the construction phase.

**Other Invertebrates**

Over 225 invertebrate species have been recorded from the Site from a range of targeted taxa. Surveys have tended to concentrate on the extensive brownfield habitat in the north and north east; the northwest and waterbodies.

Four UK BAP listed Lepidoptera (*Erynnis tages, Chiasmia clathrata, Coenonympha pamphilus* and *Tyria jacobaeae*), which are all considered to be both common and widespread (Appendix 8.8) have been recorded.

A Red Data Book lauxaniid fly (*Minettia flaviventris*) is poorly recorded and its ecology is unclear; however, it has been recorded from a variety of habitats such as herb-rich unimproved meadows, woodland edges and marshes. At the Site it was recorded in the northeast from open mosaic habitat.
8.161 Five Nationally Scarce species have been recorded from the Site; all but one were recorded from the northeast and are typically associated with waste ground, damp broadleaved woodland, hedgerows, scrub and dry grassland, all of which are available in the surrounding habitat.

8.162 The construction phase will result in the loss, or partial loss, of areas of suitable habitat in the northeast, in particular to development and earthworks necessary to alter ground levels. Similar habitat in the west and northwest is being retained along with habitat associated with wetland features and, whilst brownfield habitat is being lost in the north and north east, approximately 4.2ha of the more important areas identified is being retained within the wider landscaping along the northern fringe. This will allow the potential for re-colonisation into these landscape areas following earth works from the retained islands. The more semi-natural habitat being lost is abundant in the wider landscape and, as such, the impact on the general invertebrate assemblages associated with these habitat types is unlikely to be significant. Thus the remaining potential is the reduction in brownfield habitat to the development and this is assessed to be a Moderate Adverse impact to the species and assemblages associated with this habitat type.

Post Development

8.163 The following assessment applies solely to the effects arising post-construction.

Statutory Designated Sites

8.164 No direct or indirect effects arising from the completed development are anticipated.

Non-statutory Designated Sites

8.165 No direct or indirect effects arising from the completed development are anticipated. A number of the non-statutorily designated sites are being incorporated into the informal open space provision and as such it would be expected that given the increase in the local population that the use in and around these sites will also increase. There is likely to be an increase in dog walkers and an increase in the cat population. These could lead to an increase in pressure or impact
on particular species rather than the integrity of the sites themselves and are discussed below.

**Vegetation and Habitats**

8.166 No further effects are expected to arise from the completed development on these habitats.

**Protected Species**

**Bats**

8.167 The creation of new residential dwellings, soft landscaping and green spaces along with the enhancement of existing wildlife areas will increase the availability of roosting, foraging and commuting habitat for bats. The planting of green corridors, linking habitat in the north with that in the south, will facilitate the movement of bats in the wider landscape that is limited currently. An increase in street lighting associated with the residential development may deter photophobic bat species (i.e. brown long-eared bat) from the area but sensitive design is capable of offsetting many of the potential the effects arising from lighting. The wildlife areas around the north and in the west will not receive artificial illumination. Overall, as the development matures, the increase in habitat and connectivity could result in a **Minor Beneficial** effect for the local bat population.

8.168 There is the potential for an indirect effect on bats from the development through an increased risk of interference and higher predation pressures from domestic cats. This is difficult to quantify, as it is not certain what increase there will be in the local bat population as a result of more potential for roosting sites. However, overall, the operational phase is likely to result in a **Minor Beneficial** effect on the conservation status of bats.

**Water Vole**

8.169 The creation of new and the retention of existing wildlife areas surrounding the water bodies will provide for the maintenance of the water vole populations present currently. However, post development there will likely be an increase in disturbance from greater recreational use and predation from domestic cats. Although recreational use will be limited to daytime largely, cats will be present both day and
night. Any increase in the predation pressure from cats coupled with the suspected presence of mink, could result in a decline in water vole numbers. The operational phase is therefore likely to result in a Moderate Adverse effect of the conservation status of water voles.

Badger

8.170 All information relating to badger can be found in Confidential Appendix 8.4.

Birds

8.171 The creation of residential areas with gardens and associated soft landscaping and green spaces will quickly provide habitat for a range of birds including species of conservation concern (house sparrow (*Passer domesticus*), starling, swift (*Apus apus*), hedge accentor (*Prunella modularis*) etc). The provision of berry producing bushes and trees within the soft landscaping will also provide food for birds including over wintering birds such as redwings (*Turdus iliacus*) and waxwings (*Bombycilla garrulus*). The noise bund will be allowed to re-vegetate naturally providing a range of shrub and herb species for passerine birds. This will have a Minor Beneficial impact for the local bird populations.

8.172 However, there will be an increase in disturbance, where areas are frequented by the public and particularly in areas where dogs are allowed to wander freely. There is also likely to be an increase in predation rates from a rise in the numbers of domestic cats. This will have a Minor Adverse impact on the local bird population.

8.173 Taken together, it is anticipated that there will be an overall Negligible impact on the local breeding and wintering bird population.

Great Crested Newts

8.174 No further effects beyond those described in the construction phase assessment are anticipated on the populations of great crested newts.

Reptiles
Reptiles are likely to be subject to an increased level of disturbance resulting from humans and domestic animals and the presence of cats and dogs may also increase the predation risks facing reptiles. This is assessed to be a **Minor Adverse** impact.

**White-clawed Crayfish**

No effects on white-clawed crayfish arising from the operational phase are expected.

**Other Invertebrates**

Most of the impacts on invertebrate are anticipated during the construction phases of the development. There will be opportunities for some invertebrate groups to utilise the soft landscaping and gardens associated with the residential areas. This is assessed to be a **Minor Beneficial** impact.

**Ecological Impacts Summary**

Table 8.8 below presents a summary of the impacts arising from both the construction and operational phases without mitigation and/or compensation measures.

**Table 8.8: Summary of Effects**

<table>
<thead>
<tr>
<th>Ecological Receptor</th>
<th>Nature Conservation Value</th>
<th>Level of Impact</th>
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<tbody>
<tr>
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<td>Construction Phase Effects</td>
<td>Post Construction Effects</td>
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<td>Ecological Receptor</td>
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<td>Level of Impact</td>
<td>Construction Phase Effects</td>
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<td><strong>Non-statutory Designated Sites</strong></td>
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<td>Furnace Pond</td>
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<tr>
<td>Oakwell Brickworks &amp; the Beauty Spot</td>
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<tr>
<td>Ecological Receptor</td>
<td>Nature Conservation Value</td>
<td>Level of Impact</td>
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<td>Construction Phase Effects</td>
<td>Post Construction Effects</td>
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<tr>
<td>Ilkeston Road Pond &amp; Nutbrook Canal</td>
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<td>Bassett Farm Meadows</td>
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<tr>
<td>Gallows Inn Bridge</td>
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<td>Ironworks Pond and Swamp</td>
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<tr>
<td>Stanton Ironworks (south)</td>
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<td>Little Hallam Pasture</td>
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<tr>
<td><strong>Protected / Notable Species</strong></td>
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<tr>
<td>Bats</td>
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<td>Borough</td>
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</tr>
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<td>Minor Adverse</td>
</tr>
<tr>
<td>White-clawed Crayfish</td>
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<td>Negligible</td>
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<td>Other Invertebrates</td>
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<tr>
<td><strong>Further Habitats</strong></td>
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PART TWO
Air Quality and Noise

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<th>Post Construction Effects</th>
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<td>Habitat assemblage outside designated/candidate sites</td>
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<td>Negligible</td>
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</tr>
</tbody>
</table>

**Appropriate Mitigation, Compensation and Enhancement**

**Statutory Sites**

8.179 No mitigation or compensation measures are proposed, as it has been assessed that there will not be any significant adverse impacts on any of the identified sites from the proposed development.

**Non-Statutory Sites & Habitats:**

8.180 Parts of a number of non-statutory designated or candidate Sites are to be lost to the development. Provision has been made within the retained and restored areas including parts of non-statutory sites along the north of the development to manage such areas for wildlife and enhance their current value wherever possible to mitigate for the loss. The large part of the west of the Site has been specifically set aside to create new mosaic/disturbed habitat (UK BAP Habitat type) and enhance existing areas around the fringes including habitat for populations of great crested newts to compensate for the loss of parts of non-statutory sites. There will be short-term disturbance and loss during the restoration of the tip in the west of the Site but in the longer term, the measures to be taken to mitigate and compensate are assessed to result in an overall **Negligible** impact with the potential in the longer-term for a **Minor Beneficial** impact for biodiversity, particularly if the areas are actively managed with the involvement of a local wildlife group to maintain particularly the areas of mosaic habitat that together comprises the UK BAP habitat type; open mosaic on previously developed land.
Bats

8.181 Roosts – Twelve months prior to demolition the buildings, identified as roosts or probable roosts, will be subject to further survey to confirm the current status. This information will be used to inform an appropriate mitigation strategy in consultation with Natural England and, where necessary, a mitigation licence will be obtained to exclude bats from the roost prior to demolition. Irrespective of the compensation measures required for the demolition of known roosts, alternative roosting sites will be provided using a mixture of wooden and ‘woodcrete’ boxes that will be erected within and around the Site. As development proceeds, more permanent roosting locations will be created within the residential dwellings using bat tiles/bat bricks and/or three purpose built bat houses at suitable locations on the periphery of the Site e.g. within the nature area associated with the lake in the north west next to the Nutbrook canal.

8.182 Foraging - No specific measures are proposed other than the soft landscaping will seek to connect the green spaces to allow bats to move within and around the development. The opening up of sections of the Nutbrook Canal will also provide a foraging and commuting corridor along the north of the development.

8.183 It is assessed that together these measures could have a Minor Beneficial impact on the local bat populations.

Water Vole

8.184 Areas of dense vegetation are to be planted around the sections of the Nutbrook canal that are considered to be most likely to support water voles. Also, wherever practical along stretches of the Nutbrook canal that are culverted currently but which are to be opened up, bank profiles and construction will follow the designs shown in Strachan & Moorhouse (Ref 7-7). This has the potential to provide further habitat for water voles that could resulting an increase in the water vole population. However, the risk of predation by mink and cats will remain and as such it is assessed that it is uncertain what the long-term impact will be on the populations present.

Badger
8.185 For information relating to badger please see Appendix A, confidential Appendix 8.4.

**Birds**

8.186 Fences will be erected around habitat suitable for ground nesting birds and notices placed to dissuade people entering during the breeding season. As far as is practical all tree felling and vegetation clearance will be undertaken outside of the breeding bird season and earthworks will, as far as is practicable commence outside the breeding bird season. Where this is not possible, areas will be checked prior to works and if nesting birds are found at this time an exclusion zone will be set-up and monitored until the young have fledged.

8.187 It is assessed that in the longer-term as the development matures including the western and northern parts of the Site set-aside for nature conservation, there is the potential for an overall **Minor Beneficial** impact on the local bird population.

**Great Crested Newts**

8.188 The great crested newts will not receive any specific mitigation or compensation measures over and above those incorporated into the separate planning application for the restoration of the tip. However, it is likely that habitat enhancement measures proposed for the west of the Site will also benefit the newt population and this is assessed to have the potential for a **Minor Beneficial** impact.

**Reptiles**

8.189 The wildlife area, situated to the west of Ilkeston Road, will be enhanced to create an open mosaic, which will include grassland, scrub (<20%) and bare ground. This area will be used along with other suitable habitat around the periphery of the development to receive animals to be removed from areas lost to the development. Clearance will require rendering habitat to be lost unsuitable so that any reptiles move into adjacent suitable habitat and/or periods of trapping with any required fencing to prevent ingress into working areas once cleared. All the work will be undertaken in accordance to guidelines to ensure that ‘reasonable’ effort is made to avoid harm and as such comply with the Wildlife & Countryside Act 1981 (as amended). These measures should lead to a reduction in the potential impact on reptile populations and the residual impact is assessed to be Minor Adverse in the
short-term with the potential to be Negligible in the longer-term as new habitat matures and develops.

**Invertebrates**

8.190 The open mosaic habitat proposed for the west of the Site will form compensation for the loss of this habitat to the development. This area, which is the subject of a separate planning application to restore the tip area, will be restored to provide a range of habitats to complement the ones to remain undisturbed around the tip area. Parts of the restored tip will be ‘seeded’ with surface substrate (taken from the open mosaic habitat present currently along the northern part of the development) to encourage the development of open mosaic habitat. In the long-term, as habitats develop and mature, there is the potential for a reduction in the scale of the impact on terrestrial invertebrates from Minor Adverse during the construction phase to Negligible post development.

**General Biodiversity**

8.191 Residents of the new development will be encouraged to adopt the green spaces around the development. Contained within each home owner pack will be a series of leaflets providing a general guide to the greenscape and nature areas; behaviours to encourage and dissuade e.g. litter, dog fouling; ways in which householders can provide for the local fauna in their gardens and encouragement to adopt the wildlife areas as places for school projects and visits.

**Cumulative Impacts**

8.192 The two sites identified by Erewash Borough Council for future residential development and requested by them to be considered for cumulative impacts with this proposed development are; Quarry Hill, Ilkeston and Oakwell Brickworks, Ilkeston.

**Quarry Hill, Ilkeston**

8.193 This allocated site is located immediately to the north west of the current proposed development and is approximately 18.3ha of grassland and associated hedgerows and scrub located between the disused railway to the west and residential and industrial development to the east. The area is identified as a semi-natural
grassland site by Derbyshire Wildlife Trust (DWT). Such sites are regarded by DWT to be similar in status to candidate LWSs.

<table>
<thead>
<tr>
<th>ER CWS</th>
<th>Little Hallam Pasture</th>
<th>Semi-improved neutral grassland</th>
<th>SK 464 400. 0.1km to north of Application Area</th>
</tr>
</thead>
</table>

8.194 Development of this location for housing appears to result in the loss of approximately two thirds of the area. The loss of habitat type is different from those found within the current proposed development; semi-natural grassland as opposed to previously disturbed land. Importantly however, a wide fringe is being retained along the western side of the Quarry Hill site as green infrastructure. This is contiguous with land to the west of the railway, which is designated as an LWS; Nutbrook Canal and Fields and also maintains the corridor that is being retained as part of the current proposed development. Thus there is no loss of connectivity along the corridor comprising the Nutbrook Canal and disused railway.

8.195 There is no cumulative loss of semi-natural grassland habitat as, as noted above, the current proposed development leads to little loss of this habitat type.

**Oakwell Brickworks**

8.196 This site is located approximately 300m to the north of the Quarry Hill allocation and separated from this site by woodland/scrub and a large pond. It is stated that approximately 8ha of this allocation will be developed but no stand off or retained areas are indicated. At least part of the allocated area forms an LWS; Oakwell Brickworks & the Beauty Spot (Site ER144).

| Oakwell Brickworks & the Beauty Spot | ER144 | 15.6ha | Unimproved neutral grassland | SK461407 |

8.197 The site is described as unimproved neutral grassland and similar to the Quarry Hill allocation is a habitat type not found within the current proposed development at Stanton.

8.198 At face value part of the LWS will be lost to any development of Oakwell Brickwork but it is not known where development is likely to take place and how the habitats are to be affected, particularly whether there is provision to maintain the corridor.
along the disused railway as both the proposed development at Stanton and the Quarry Hill allocation propose.

8.199 Should this be the case, whilst there will be loss of grassland habitat, the critical corridor along the disused railway and Nutbrook Canal will be maintained.

8.200 It is difficult to quantify any cumulative impacts without details of the proposed development of the other two sites but together all three proposals will lead to the loss of habitat of at least District value and in some cases, County value. However the nature of the habitats to be lost are different at each site and particularly those found within the Application Area but many species will be found throughout and so there is likely to be a cumulative impact on such species, which could include birds, invertebrates, bats, reptiles and amphibians.

Residual Impacts

8.201 Table 8.9 below provides a summary of the residual impacts on receptors that were identified above as having the potential to be adversely affected by the proposals, once mitigation and compensation measures are taken into account.

Table 8.9: Residual Impact on Receptors Identified as Requiring Mitigation / Compensation

<table>
<thead>
<tr>
<th>Ecological Receptor</th>
<th>Nature Conservation Value</th>
<th>Residual Level of Impact</th>
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<tbody>
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<td></td>
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<td>Construction Phase</td>
<td>Completed Development</td>
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<td>Non-statutory Designated Sites</td>
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<tr>
<td>Nutbrook Canal &amp; Fields</td>
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## Air Quality and Noise

### Ecological Receptor

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<th>Ecological Receptor</th>
<th>Nature Conservation Value</th>
<th>Residual Level of Impact</th>
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<td>Construction Phase</td>
<td>Completed Development</td>
</tr>
<tr>
<td>Stanton Ironworks (north)</td>
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<td>Minor Beneficial</td>
</tr>
<tr>
<td>Stanton Ironworks (south)</td>
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### Protected / Notable Species

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<tr>
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<td>Minor Beneficial</td>
</tr>
<tr>
<td>Water Vole</td>
<td>Borough</td>
<td>Minor Adverse</td>
<td>Minor Adverse</td>
</tr>
<tr>
<td>Bird assemblage</td>
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<td>Negligible</td>
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<td>Great Crested Newt</td>
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<td>Reptiles</td>
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<tr>
<td>White-clawed Crayfish</td>
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<tr>
<td>Other Invertebrates</td>
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### Habitats

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<th>Residual Level of Impact</th>
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<tbody>
<tr>
<td></td>
<td>Local</td>
<td>Minor Beneficial</td>
<td>Minor Beneficial</td>
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</table>
8.202 Overall, provided that the recommended mitigation and compensation measure are implemented and the long-term protection and management of the northern buffer and western areas can be guaranteed as reasonably expected, then the identified impacts can be reduced to minor adverse at worst with the potential in the longer-term for beneficial impacts.
## REFERENCES

<table>
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<tr>
<td>Ref. 8.4</td>
<td>JNCC (1993) <em>Handbook for Phase 1 Habitat Survey</em>, JNCC, Peterborough</td>
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<td>Ref. 8.5</td>
<td>Institute for Environmental Assessment (1995) <em>Guidelines for Baseline Ecological Assessment</em>, IEA, Lincoln</td>
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Great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.


Ref. 8.15 United Kingdom Butterfly Monitoring Scheme. Available at www.ukbms.org/Methods.aspx
AIR QUALITY AND NOISE

INTRODUCTION

9.1 The findings relating to Air Quality and Noise set out at Chapter 9 of the original Environmental Statement (dated, November 2012) have been assessed against the proposed amendments described at Chapter 3 of the ES Addendum, to consider the potential and predicted impacts arising from the proposed development activities at the Site on local air quality. Both construction and operational (post-construction) phase impacts are assessed.

9.2 This section has been updated to consider changes to the masterplan as detailed in Chapter 3 of this ES Addendum. Where amendments to the assessment are not considered necessary as a result of masterplan changes, this is noted. As such, this chapter replaces the original Chapter 9 of the November 2012 Environmental Statement, presented at Appendix A of this ES Addendum.

FINDINGS OF ES ADDENDUM: UPDATED AIR QUALITY AND NOISE CHAPTER

9.3 The assessment remains based on assessment practice at the time of the original planning submission.

9.4 It should be noted that a full and detailed air quality assessment report is presented in Appendix A, Appendix 9.1, which forms the basis of this chapter and should be consulted for detailed information regarding the assessment methodology and outcomes.

9.5 This section is divided into the following broad sub-sections:

- planning and other legislative context;
- methodology and significance criteria;
- baseline information;
- assessment of effects including potential and predicted impacts;
- appropriate mitigation, compensation and enhancement;
- residual impacts;
- conclusions.
Planning and Legislative Context

Key Legislation

9.6 The EU Air Quality Framework Directive (1996) established a framework under which the EU could set, limit or target values for specified pollutants. The directive identified several pollutants for which limit or target values have been, or will be set in subsequent ‘daughter directives’. The framework and daughter directives were consolidated by Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe, which retains the existing air quality standards and introduces new objectives for fine particulates (PM\(_{2.5}\)).


9.8 These objectives are to be used in the review and assessment of air quality by local authorities under Section 82 of the Environment Act (1995). If exceedances are measured or predicted through the review and assessment process, the local authority must declare an air quality management area (AQMA) under Section 83 of the act, and produce an air quality action plan to outline how air quality is to be improved to meet the objectives under Section 84 of the act.

Planning Policy

9.9 The land use planning process is a key means of improving air quality, particularly in the long term, through the strategic location and design of new developments. Any air quality concern that relates to land use and its development can, depending on the details of the proposed development, be a material consideration in the determination of planning applications.

\(^1\) Relevance, in this case, was agreed to be limited to the pollutants NO\(_2\) and PM\(_{10}\).
9.10 In March 2012 The National Planning Policy Framework (NPPF) was published, superseding the majority of previous Planning Policy Statements (PPS), including PPS 23 (Planning and Pollution Control) with immediate effect. The National Planning Policy Framework is intended to simplify the planning system and includes a presumption in favour of sustainable development.

9.11 Section 11 of the NPPF deals with Conserving and Enhancing the Natural Environment, and states that the intention is that the planning system should prevent ‘development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability’ and goes on to state that ‘new development [should be] appropriate for its location’ and ‘the effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account.’

9.12 With specific regard to air quality, the NPPF states that:

‘Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan’.

Erewash Borough Council Planning Policies

9.13 Consultation with Erewash Borough Council (EBC) has indicated that EBC currently have no planning policies that relate specifically to air quality.

Environmental Protection UK Guidance – Development Control: Planning for Air Quality

9.14 Environmental Protection UK’s guidance note ‘Development Control: Planning for Air Quality (Update 2010)’ responds to the need for closer integration between air quality and development control. It provides a framework for air quality
considerations within local development control processes, promoting a consistent approach to the treatment of air quality issues within development control decisions.

9.15 The guidance includes a method for assessing the significance of impacts of development proposals in terms of air quality and how to make recommendations relevant to the development control process. The guidance also provides some clarification as to when air quality constitutes a material consideration.

**Methodology and Significance Criteria**

**Overall Assessment Approach**

9.16 The approach taken for assessing the potential air quality impacts of the proposed development may be summarised as follows:

- Baseline characterisation of local air quality;
- Qualitative assessment of air quality impacts from demolition and construction activities;
- Advanced dispersion modelling assessment of air quality impacts of the proposed development under three scenarios:
  1. ‘Base case’ scenario representing the ‘existing’ air quality situation in 2011;
  2. ‘Do nothing’ scenario (2026 without the proposed development in place and with other committed developments in the local area); and,
  3. ‘Do Something’ scenario (2026 with the proposed development in place and with other committed developments in the local area); and,
- Recommendations on mitigation measures, where appropriate, to ensure any adverse effects on air quality are minimised.

9.17 Detailed information regarding the dispersion modelling assessment of road traffic emissions, including model sensitivity analysis, model verification and model input/output parameters and is presented in Appendix 9.1 (presented at Appendix A of this ES Addendum).
Significance Criteria – Demolition and Construction

9.18 The Institute of Air Quality Management (IAQM) published a guidance document on the assessment of construction phase impacts. The project is assigned a risk category, and the level of mitigation required is specified on the basis of the risk category.

9.19 The assessment presented in this document is based on the 2012 version of the IAQM guidance.

9.20 In order to assess potential impacts on local air quality, construction activities are divided into four types, as follows:

- Demolition;
- Earthworks;
- Construction; and,
- Trackout of material onto local roads.

9.21 For each activity, the risk of dust annoyance and/or health or ecological impacts is determined using three risk categories: low, medium and high risk. The risk category is different for each of the four activities described above. For further information on the IAQM significance criteria employed in the air quality assessment, reference should be made to Appendix 9.1 (presented at Appendix A of this ES Addendum).

Significance Criteria – Road Traffic Emissions

9.22 The updated 2010 Environmental Protection UK (EP UK) guidance provides an approach for assessing the significance of air quality impacts associated with a development. This approach uses textual descriptors of significance, which are contained within a flowchart, as shown in Figure 9.1 below. These criteria have been applied to the quantified (modelled) traffic impacts in this assessment.

9.23 The approach assumes that air quality impacts associated with a proposed development have been assessed and quantified. The significance of the impacts is

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then assessed through a series of questions with closed (yes and no) answers. Each question is addressed in descending order until the arrow points to one of the outcomes in the right hand column. This gives the relative priority with which air quality considerations should be afforded with respect to the development proposal.

9.24 The EP UK guidance also provides further direction on how to describe the magnitude and significance of impacts predicted from air quality modelling for the pollutants NO₂ and PM₁₀. This is discussed in detail in Appendix 9.1 (presented at Appendix A of this ES Addendum).

Figure 9.1: Assessment of Significance of Air Quality Impacts
Baseline Information
Existing or baseline air quality refers to concentrations of relevant substances that are already present in ambient air. These substances are emitted by various sources, including road traffic, industrial, domestic, agricultural and natural sources.

Baseline air quality data employed in this study have been obtained from diffusion tube monitoring sites operated by EBC and the UK-AIR (Air Information Resource) website operated by the Department for Environment, Food and Rural Affairs (DEFRA).

The masterplan revision will not affect the baseline air quality experienced by the site. The ‘background’ air quality data used in the 2012 assessment have been supplemented with more recent data and no significant changes likely to affect the outcome of the assessment have been identified.

Emissions Sources and Key Air Pollutants

Transport-related emissions are one of the main sources of air pollution in urban areas. The principal pollutants relevant to this assessment are considered to be NO$_2$ and PM$_{10}$, generally regarded as the two most significant air pollutants released by vehicular combustion processes or subsequently generated by vehicle emissions in the atmosphere through chemical reactions, and which are generally considered to have the greatest potential to result in human health impacts. These are also the substances of most concern in terms of existing levels in the area, as discussed below.

Local Authority Review and Assessment of Air Quality

As directed by the Environment Act 1995, local authorities are required to review and assess air quality with respect to the standards and objectives for the pollutants specified in the Government’s National Air Quality Strategy (NAQS, 2007).

Local authorities are required to undertake an Updating and Screening Assessment (USA) of their area every three years. If the USA identifies potential ‘hotspot’ areas where air quality objectives are likely to be exceeded, then a detailed assessment of those areas is required.

Where objectives are not predicted to be met, local authorities must declare an Air Quality Management Area (AQMA). In addition, local authorities are required to
produce an Air Quality Action Plan (AQAP), which outlines measures aimed at improving air quality within the designated AQMA.

9.32 EBC currently has two declared AQMAs, both of which incorporate residential properties close to the M1 motorway at Sandiacre (EBC AQMA 1) and Long Eaton (EBC AQMA 2). Both of these AQMAs have been declared for the pollutant NO₂ and are located approximately 4 km and 5 km from the proposed development site respectively.

9.33 Broxtowe Borough Council (BBC) has also declared an AQMA for NO₂ covering a selection of properties close to the M1 at Trowel (BBC AQMA 1). This AQMA is located less than 1 km from the proposed development site. BBC AQMAs 2 and 3, which were also located in the Trowel area, have now been revoked.

Baseline Monitoring Data

9.34 There are no permanent background automatic air quality monitoring stations operated within the administrative area of EBC, although period of automatic monitoring for NO₂ was carried out at Borrowdale Drive, Long Eaton between February 2011 and February 2012. The measured mean concentration at this site was 31.5 μg/m³ for this period, and the hourly mean standard was not exceeded. The monitoring location is approximately 6 km south of the proposed development site.

9.35 NO₂ concentrations are measured at a number of other locations using passive diffusion tubes. PM₁₀ concentrations are not measured at any locations within the EBC area.

9.36 Annual average NO₂ concentrations as measured in 2009, 2010, 2011 and 2012 at the diffusion tube monitoring sites are presented in Table 9.1 below.

9.37 Measured NO₂ concentrations were above the relevant air quality objective at most of the kerbside and M1 motorway monitoring locations, but no exceedance of the annual average air quality objective was measured at urban background/background locations.

9.38 The nearest urban background diffusion tube measurement site to the proposed development is EBC/1/10, which is located on Bostocks Lane, approximately 3.2 km from the proposed development site.
<table>
<thead>
<tr>
<th>Site Name</th>
<th>Type/Classification</th>
<th>Approx. Distance from Proposed Development (km)</th>
<th>Annual Average NO\textsubscript{2} (µg/m\textsuperscript{3})</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBC/1/1</td>
<td>Kerbside</td>
<td>3.0</td>
<td>53 63 60 57</td>
</tr>
<tr>
<td>EBC/1/2</td>
<td>M1</td>
<td>4.9</td>
<td>38 44 42 35</td>
</tr>
<tr>
<td>EBC/1/3</td>
<td>M1</td>
<td>5.0</td>
<td>39 40 No Data No Data</td>
</tr>
<tr>
<td>EBC/1/4</td>
<td>M1</td>
<td>5.5</td>
<td>38 43 43 36</td>
</tr>
<tr>
<td>EBC/1/5</td>
<td>M1</td>
<td>4.5</td>
<td>38 46 43 33</td>
</tr>
<tr>
<td>EBC/1/6</td>
<td>M1</td>
<td>5.6</td>
<td>35 38 35 28</td>
</tr>
<tr>
<td>EBC/1/7</td>
<td>Urban Background</td>
<td>5.3</td>
<td>23 27 25 24</td>
</tr>
<tr>
<td>EBC/1/8</td>
<td>Kerbside</td>
<td>4</td>
<td>33</td>
</tr>
<tr>
<td>-------------</td>
<td>----------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>EBC/1/9</td>
<td>M1</td>
<td>3</td>
<td>33</td>
</tr>
<tr>
<td>EBC/1/10</td>
<td>Urban Background</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>EBC/1/11</td>
<td>M1</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>EBC/1/12</td>
<td>Kerbside</td>
<td>5</td>
<td>37</td>
</tr>
<tr>
<td>EBC/1/13</td>
<td>Kerbside</td>
<td>5</td>
<td>37</td>
</tr>
<tr>
<td>EBC/1/14</td>
<td>Kerbside</td>
<td>1</td>
<td>35</td>
</tr>
<tr>
<td>EBC/1/15</td>
<td>Kerbside</td>
<td>2</td>
<td>41</td>
</tr>
<tr>
<td>EBC/1/16</td>
<td>Kerbside</td>
<td>2</td>
<td>27</td>
</tr>
<tr>
<td>EBC/1/17</td>
<td>Kerbside</td>
<td>1</td>
<td>29</td>
</tr>
<tr>
<td>EBC/1/18</td>
<td>M1</td>
<td>3</td>
<td>33</td>
</tr>
<tr>
<td>EBC/1/19</td>
<td>Kerbside</td>
<td>6</td>
<td>No Data</td>
</tr>
<tr>
<td>EBC/1/20</td>
<td>Kerbside</td>
<td>2</td>
<td>No Data</td>
</tr>
<tr>
<td>EBC/1/21</td>
<td>Roadside</td>
<td>5</td>
<td>No Data</td>
</tr>
</tbody>
</table>
UK-AIR (Air Information Resource) Data

9.39 In addition to local monitoring data, estimated background air quality data from the UK-AIR (Air Information Resource) website are also available to establish likely background air quality conditions at the proposed development site.

9.40 The UK-AIR website provides estimated annual average background concentrations of nitrogen oxides (NOx), NO₂ and PM₁₀ on a 1 km² grid basis. Revised (2010) pollutant background maps were released by the Department for Environment, Food and Rural Affairs (DEFRA) in April 2012. Table 9.2 below identifies estimated annual background NOx, NO₂ and PM₁₀ concentrations at the proposed development site for the year 2010. No exceedance of NO₂ and PM₁₀ air quality objectives was estimated.

Table 9.2: Estimated Annual Average NOx, NO₂ and PM₁₀ Concentrations at Proposed Development Site (2010) From the UK-AIR Website

<table>
<thead>
<tr>
<th>Assessment Year</th>
<th>Annual Average NOx (µg/m³)</th>
<th>Annual Average NO₂ (µg/m³)</th>
<th>Annual Average PM₁₀ (µg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Air Quality Objective</td>
<td>30^</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

Note: Presented concentrations for 1 km² grid centred on 446500, 339500; approximate centre of development site is 446950, 339050; ^AQ objective designated for the protection of vegetation and ecosystems only.
9.41 Revised (2011 based) pollutant background maps were released by the Department for Environment, Food and Rural Affairs (DEFRA) in June 2014. The 2011 based maps do not include data for 2010, but for 2011, the estimated concentrations of NO\textsubscript{x}, NO\textsubscript{2} and PM\textsubscript{10} are 28µg/m\textsuperscript{3}, 19 µg/m\textsuperscript{3} and 18 µg/m\textsuperscript{3} respectively, therefore the baseline used in the assessment is considered conservative.

Background Air Quality Data Used in the Modelling Assessment

9.42 A background NO\textsubscript{2} concentration of 27 µg/m\textsuperscript{3} was employed in the dispersion modelling assessment. This value was the 2011 annual average NO\textsubscript{2} concentration measured at the nearest background diffusion tube site to the proposed development, EBC/1/10 (Table 9.1). A background NO\textsubscript{x} concentration of 43 µg/m\textsuperscript{3} was employed in the dispersion model. This was derived by multiplying the background NO\textsubscript{2} concentration of 27 µg/m\textsuperscript{3} by the NO\textsubscript{x} to NO\textsubscript{2} ratio from the UK-AIR data presented in Table 9.2.

9.43 In the absence of local PM\textsubscript{10} monitoring data, the annual average background PM\textsubscript{10} concentration presented in Table 9.2 was employed in the modelling assessment (i.e. 17 µg/m\textsuperscript{3}). No reduction in background concentrations was assumed over time.

9.44 In light of measurements made since 2011, the data used are considered conservative.

Assessment of Effects

Demolition and Construction

9.45 Atmospheric emissions from construction activities will depend on a combination of the potential for emissions (the type of activity and prevailing conditions) and the effectiveness of control measures. In general terms, there are two sources of emissions that will need to be controlled to minimise the potential for adverse environmental effects:

- Exhaust emissions from site plant, equipment and vehicles; and,
- Fugitive dust emissions from site activities.

Exhaust Emissions from Plant and Vehicles
9.46 The operation of vehicles and equipment powered by internal combustion engines results in the emission of exhaust gases containing the pollutants NOx, PM$_{10}$, volatile organic compounds (VOCs), and carbon monoxide (CO).

9.47 The quantities emitted depend on factors such as engine type, service history, pattern of usage and fuel composition. The operation of site equipment, vehicles and machinery will result in emissions to atmosphere of exhaust gases, but such emissions are unlikely to be significant, particularly in comparison to levels of similar emission components from vehicle movements on the road network surrounding the development site.

9.48 Construction traffic will comprise haulage/construction vehicles and vehicles used for workers’ trips to and from the site.

**Fugitive Dust Emissions**

9.49 Fugitive dust emissions arising from construction and demolition activities are likely to be variable in nature and will depend upon the type and extent of the activity, soil type and moisture content, road surface conditions and weather conditions. Periods of dry weather combined with higher than average wind speeds have the potential to generate more dust.

9.50 Demolition and construction and activities that are considered to be the most significant potential sources of fugitive dust emissions are:

- Demolition of existing buildings and the size reduction and handling of materials;
- Earth moving, due to the handling, storage and disposal of soil and subsoil materials;
- Construction aggregate usage, due to the transport, unloading, storage and use of dry and dusty materials (such as cement and sand);
- Movement of heavy site vehicles on dry or untreated haul routes; and,
- Movement of vehicles over surfaces where muddy materials have been transferred off site (for example, on to public highways).
9.51 Fugitive dust arising from construction and demolition activities is in the main of a particle size greater than the PM$_{10}$ fraction (that which can potentially impact upon human health). However, it is noted that demolition and construction activities may contribute to local PM$_{10}$ concentrations. Appropriate dust control measures can be highly effective for controlling emissions from the potential dust generating activities identified above, and adverse effects can be greatly reduced or eliminated.

**Significance of Demolition and Construction Activities**

9.52 With reference to the IAQM guidance criteria discussed above an outlined in detail in Appendix 9.1, the dust emission classes for demolition, earthworks, construction and trackout activities (before mitigation) are assessed to be as follows:

- **Demolition** – large ($>50,000$ m$^3$ building volume to be demolished);
- **Earthworks** – large (total site area $>10,000$ m$^2$);
- **Construction** – large (total building volume to be constructed $>100,000$ m$^3$);
- **Trackout** – medium (number of HDV trips per day between 25 and 100).

9.53 There are a number of existing human and ecological receptors within 20 m of the site boundary and therefore the risk categorisation for each of the construction activities, before the application of mitigation measures, is summarised in Table 9.3 below.

9.54 Mitigation measures that will help reduce the impacts of the demolition and construction activities at the development site are discussed in more detail in subsequent sections.

**Table 9.3:** Summary of Risk Categories of the Site (Before mitigation)

<table>
<thead>
<tr>
<th>Construction Activities</th>
<th>Dust Emissions Class</th>
<th>Nearest Receptor</th>
<th>Evaluation of the Risk Category (Dust Soiling and PM$_{10}$)</th>
<th>Evaluation of the Risk Category (Ecology)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demolition</td>
<td>Large</td>
<td>&lt;20m</td>
<td>High Risk Site</td>
<td>High Risk Site</td>
</tr>
<tr>
<td>Earthworks</td>
<td>Large</td>
<td>&lt;20m</td>
<td>High Risk Site</td>
<td>Medium Risk Site</td>
</tr>
<tr>
<td>Construction</td>
<td>Large</td>
<td>&lt;20m</td>
<td>High Risk Site</td>
<td>Medium Risk Site</td>
</tr>
<tr>
<td>Trackout</td>
<td>Medium</td>
<td>&lt;20m</td>
<td>Medium Risk Site</td>
<td>Medium Risk Site</td>
</tr>
</tbody>
</table>
9.55 The revisions to the Masterplan are not considered likely to significantly alter the outcome of the construction phase fugitive emissions assessment, since the number of residential units proposed and construction methods are similar and the assessment was made with regard to activities carried out within the site boundary as a whole.

**Operational Phase (Post-Construction)**

9.56 The main potential impact of the proposed development is considered to be emissions from increased road traffic associated with the proposed development. The following subsections provide key information regarding the dispersion modelling assessment of road traffic emissions. However, detailed information on modelling input and output data is available in Appendix 9.1 (presented at Appendix A of this ES Addendum).

9.57 The transport consultants for the development scheme, Vectos, provided base and predicted traffic data for the proposed development. The traffic data used in the modelling study are presented in Appendix 9.1. The data for the 2026 assessment scenarios included additional committed developments in the area. Figures 9.2 and 9.3 show all roads and sensitive receptors included in the dispersion modelling assessment.

9.58 The transport consultants were consulted in July 2014 and stated that the predicted traffic generation and off-site distribution has not changed as a result of the masterplan revision, therefore the existing assessment is considered to remain valid.

**Dispersion Model**

9.59 ADMS-Roads is a ‘new generation’ advanced dispersion model developed by the UK consultancy CERC (Cambridge Environmental Research Consultants). ADMS-Roads is widely used and validated within the UK and Europe. The model allows for the skewed nature of turbulence within the atmospheric boundary layer. An equivalent model, ADMS-Urban, is often used by local councils for air quality review and assessment work.

9.60 ADMS-Roads is capable of processing hourly sequential meteorological data, whilst taking the turbulence caused by vehicles into account in calculating the dispersion
profiles of emitted pollutants. ADMS-Roads enables the user to model line (e.g. road), point, area and volume emission sources simultaneously, and facilitates the prediction of ground level concentrations of pollutants of concern at multiple receptor locations.

9.61 ADMS-Roads (Version 3.1) has been used for assessing potential air quality impacts resulting from the operational phase of the proposed development.

9.62 Vehicular emission factors were calculated using the Emission Factors Toolkit (Version 4.2.2), which is provided with the ADMS-Roads (Version 3.1) dispersion model.

9.63 It is acknowledged that as at July 2014, the Emissions Factor Toolkit has been updated to Version 6.1, however any minor change to emissions factors would affect both the ‘do nothing’ and ‘do something’ scenarios equally and revision of the modelling is considered disproportionate, since the existing scheme is consented and the proposed variation does not affect predicted traffic generation.

Figure 9.2: Road Links and Receptors Included in the Dispersion Model (Off Site)
Figure 9.3: Road Links and Receptors Included in the Dispersion Model (On Site – proposed road layout under revised scheme is unchanged)
Meteorological Data

9.64 Three years of hourly sequential meteorological data recorded between 2007 and 2009 at the Met Office Nottingham Watnall meteorological monitoring station were employed in the dispersion model. The meteorological station is located approximately 7.5 km from the development site and is considered likely to be representative of local conditions.

9.65 The model was not re-run with updated meteorological data because this was considered disproportionate to a minor revision to the Masterplan which does not affect the predicted traffic generation or distribution.

9.66 Figure 9.4 shows a windrose derived from the 2007 dataset measured at the station. The predominant wind direction was westerly/south-westerly. Windroses plotted with data for 2008 and 2009 are presented in Appendix 9.1 (presented at Appendix A of this Addendum).

Figure 9.4: Windrose Plotted from Data Obtained from the Nottingham Watnall Meteorological Station in 2007
Pollutant concentrations were predicted at a number of receptors in and around the modelled road network and the proposed development site. Details of all specific receptors included in the modelling study (and hence the air quality impacts assessed) are summarised in Table 9.4. The locations of all assessed receptors are shown in Figures 9.2 and 9.3 above.

The receptors were selected to represent the closest residential and/or public properties to the proposed development site and surrounding road network and are therefore considered to represent ‘worst-case’ exposure locations. Receptors R1 to R6 represent existing residential properties within the currently designated AQMAs.

The selection of modelled receptor locations is not affected by the revisions to the masterplan.

### Table 9.4: Receptors Included in the Modelling Assessment

<table>
<thead>
<tr>
<th>Receptor ID</th>
<th>Receptor Location</th>
<th>Grid Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBC/1/1</td>
<td>Erewash BC NO₂ Diffusion Tube Site</td>
<td>447177 336113</td>
</tr>
<tr>
<td>EBC/1/5</td>
<td>Erewash BC NO₂ Diffusion Tube Site</td>
<td>447211 334543</td>
</tr>
<tr>
<td>R1</td>
<td>Erewash BC AQMA 1 (Derby Road)</td>
<td>447211 336111</td>
</tr>
<tr>
<td>R2</td>
<td>Erewash BC AQMA 1 (Derby Road)</td>
<td>447209 336176</td>
</tr>
<tr>
<td>R3</td>
<td>Erewash BC AQMA 2 (Long Eaton)</td>
<td>447208 334485</td>
</tr>
<tr>
<td>R4</td>
<td>Erewash BC AQMA 2 (Long Eaton)</td>
<td>447225 334381</td>
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<tr>
<td>R5</td>
<td>Broxtowe BC AQMA 1 (Trowell)</td>
<td>448607 339090</td>
</tr>
<tr>
<td>R6</td>
<td>Erewash AQMA 1 (Trowell)</td>
<td>448582 339021</td>
</tr>
<tr>
<td>R7</td>
<td>The Manor House, Stanton-by-Dale</td>
<td>446578 338075</td>
</tr>
<tr>
<td>R8</td>
<td>Existing property, Stanton-by-Dale</td>
<td>446715 337897</td>
</tr>
<tr>
<td>R9</td>
<td>Sowbrook Farm</td>
<td>446010 339446</td>
</tr>
<tr>
<td>R10</td>
<td>Existing property, junction of St.Norbet Drive &amp; Sowbrook Brook/Dallimore Road</td>
<td>445754 339991</td>
</tr>
<tr>
<td>Receptor ID</td>
<td>Receptor Location</td>
<td>Grid Reference</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>R11</td>
<td>Existing property on Quarry Hill Road</td>
<td>446648, 339878</td>
</tr>
<tr>
<td>R12</td>
<td>Existing property at junction of Corporation Road and Longfield Lane</td>
<td>447327, 339970</td>
</tr>
<tr>
<td>R13</td>
<td>Existing property on Nottingham Road, Trowell</td>
<td>448520, 339994</td>
</tr>
<tr>
<td>R14</td>
<td>Existing property on Nottingham Road, Trowell</td>
<td>448798, 340084</td>
</tr>
<tr>
<td>R15</td>
<td>Existing property on Moorbridge Lane</td>
<td>448438, 338309</td>
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<tr>
<td>R16</td>
<td>Existing property on Stanton Gate</td>
<td>448136, 338187</td>
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<td>R17</td>
<td>Existing property on Stanton Gate</td>
<td>448166, 338119</td>
</tr>
<tr>
<td>R18</td>
<td>Existing property on Stanton Road</td>
<td>447201, 337006</td>
</tr>
<tr>
<td>R19</td>
<td>Existing property at junction of Derby Road and Rushy Lane</td>
<td>446875, 336013</td>
</tr>
<tr>
<td>R20</td>
<td>School/College at junction of Toton Lane and A52 Brian Clough Way</td>
<td>449438, 336156</td>
</tr>
<tr>
<td>R21</td>
<td>Existing property on Ryecroft Street</td>
<td>449446, 338014</td>
</tr>
<tr>
<td>R22</td>
<td>Sandiacre Lodge Farm, No Man’s Lane</td>
<td>444607, 337906</td>
</tr>
<tr>
<td>R23</td>
<td>Existing property on Park Road/Green Lane, Ilkeston</td>
<td>447125, 341411</td>
</tr>
<tr>
<td>R24</td>
<td>Existing property on Flamstead Road, Ilkeston</td>
<td>446961, 342051</td>
</tr>
<tr>
<td>R25</td>
<td>Existing property on Bristol Road, Ilkeston</td>
<td>446238, 342069</td>
</tr>
<tr>
<td>R26</td>
<td>Cat and Fiddle Farm, Cat and Fiddle Lane</td>
<td>443436, 340024</td>
</tr>
<tr>
<td>R27</td>
<td>Existing property on Cockington Road</td>
<td>451131, 340300</td>
</tr>
<tr>
<td>R28</td>
<td>Proposed Care Village</td>
<td>447259, 338845</td>
</tr>
<tr>
<td>R29</td>
<td>Proposed mixed-use residential/employment core</td>
<td>447142, 338984</td>
</tr>
<tr>
<td>R30</td>
<td>Proposed primary school</td>
<td>447098, 338929</td>
</tr>
<tr>
<td>R31</td>
<td>Proposed mixed-use residential/employment core</td>
<td>447118, 338959</td>
</tr>
<tr>
<td>R32</td>
<td>Proposed mixed-use residential/employment core</td>
<td>447130, 339001</td>
</tr>
<tr>
<td>R33</td>
<td>Proposed mixed-use residential/employment core</td>
<td>447241, 338810</td>
</tr>
</tbody>
</table>
Predicted Pollutant Concentrations

9.70 Long- and short-term concentrations of NO₂ and PM₁₀ were, taking into account background air quality, predicted at each receptor for each modelled scenario. The results of the dispersion modelling assessment are presented in full in Appendix 9.1 (presented at Appendix A of this Addendum). The dispersion model has been verified and details are presented in Appendix 9.1.

9.71 Isopleths, or pollution concentration contour plots, for short- and long-term NO₂ and PM₁₀ predicted concentrations for the 2026 ‘do something’ scenario are presented in Appendix 9.1. The contour plots illustrate that road traffic emissions disperse rapidly with distance, reaching background concentrations within a short distance from the assessed roads.

Modelling Results

9.72 Predicted long- and short-term NO₂ and PM₁₀ concentrations at all assessed receptor locations under the future (2026) assessment scenarios would not exceed the relevant air quality objectives.

9.73 Some exceedances of the long-term (annual average) air quality objective for NO₂ were predicted under the 2011 base case scenario at locations within existing AQMAs adjacent to the M1 motorway and at three locations on Stanton Gate/Stanton Road (R16, R17 and R18), all of which are in close proximity to the M1.

9.74 It was not considered necessary to revise the modelling to assess the 2014 revised Masterplan, as discussed in paragraph 9.58, therefore the results are unchanged.
Significance of Demolition and Construction Impacts

9.75 The significance of the impacts of construction activities (before mitigation) has been evaluated based on the dust emission class and the location of receptors, as previously discussed and as presented in full in Appendix 9.1 (presented at Appendix A of this Addendum).

9.76 From the risk categories identified and the sensitivity of the receptors (it has been assumed that the area surrounding the development site is of ‘medium’ sensitivity), the overall significance of construction impacts before mitigation has been assessed as ‘moderate adverse’, as identified below in Table 9.5. Mitigation measures to reduce construction phase impacts are discussed below.

9.77 The 2014 revised Masterplan, is not considered to affect the fugitive emissions assessment, therefore the results are unchanged.

Table 9.5: Significance of Impacts of Construction Activities (Before Mitigation)

<table>
<thead>
<tr>
<th>Source</th>
<th>Significance of Impacts (Dust Soiling and PM$_{10}$)</th>
<th>Significance of Impacts (Ecology)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demolition</td>
<td>Moderate adverse</td>
<td>Moderate adverse</td>
</tr>
<tr>
<td>Earthworks</td>
<td>Moderate adverse</td>
<td>Slight adverse</td>
</tr>
<tr>
<td>Construction</td>
<td>Moderate adverse</td>
<td>Slight adverse</td>
</tr>
<tr>
<td>Trackout</td>
<td>Slight adverse</td>
<td>Slight adverse</td>
</tr>
<tr>
<td>Overall Significance</td>
<td>Moderate adverse</td>
<td></td>
</tr>
</tbody>
</table>

Significance of Operational Phase Impacts

Long-term Impacts

9.78 The maximum change in annual average NO$_2$ and PM$_{10}$ concentrations between ‘do nothing’ and ‘do something’ scenarios has been predicted to be 4.13 µg/m$^3$ and 0.50 µg/m$^3$ respectively at the assessed receptors R6 and R35.
As per the Environmental Protection UK guidance criteria outlined in Appendix 9.1, the magnitude of change in terms of long-term NO\textsubscript{2} and PM\textsubscript{10} concentrations is classified as ‘imperceptible’ to ‘large’ for NO\textsubscript{2} and ‘imperceptible’ to ‘small’ for PM\textsubscript{10}.

As per the Environmental Protection UK significance criteria outlined in Appendix 9.1 (presented at Appendix A of this Addendum), the impact of the proposed development in terms of long-term NO\textsubscript{2} and PM\textsubscript{10} concentrations is considered to be ‘negligible’ to ‘moderate adverse’ at the receptor locations assessed.

**Short-term Impacts**

In terms of the PM\textsubscript{10} 24-hour objective, the magnitude of change is considered to be ‘imperceptible’ at all assessed receptors as the predicted difference between the number of days exceeding under the ‘do nothing’ and ‘do something’ scenarios is less than 1 day.

As per the Environmental Protection UK significance criteria outlined in Appendix 9.1, the impact of the proposed development in terms of short-term PM\textsubscript{10} concentrations is considered to be ‘negligible’.

Interpreting the assessment results with Figure 9.1, the proposed development:

- Will not lead to a breach or significant worsening of a breach of an EU limit value or air quality objective;
- Will not lead to an extension of an existing AQMA and will not cause the declaration of a new AQMA;
- Will not interfere significantly with, and will not prevent the implementation of, an air quality action plan;
- Will not interfere significantly with the implementation of a local air quality strategy; and,
- Will not lead to a significant increase in emissions, degradation in air quality or increase in exposure, below the level of a breach of an air quality objective.

In view of the above, air quality is considered to be a ‘low priority concern’ for the proposed development.
9.85 The 2014 revised Masterplan, is not considered to alter the air quality significance assessment.

Mitigation Measures

Demolition and Construction

9.86 The dust emitting activities previously discussed can be effectively controlled by appropriate dust control measures and any adverse effects can be greatly reduced or eliminated. Effective dust control measures prevent dust becoming airborne or contain dust within enclosures to prevent dispersion beyond the site boundary.

9.87 Prior to commencement of demolition/construction activities, agreement on the scope of an Air Quality Management Plan (AQMP) for the demolition and construction project should be reached with EBC to ensure that the potential for adverse environmental effects on local receptors is minimised.

9.88 The AQMP should include *inter alia*, measures for controlling dust and general pollution from site construction operations, and include details of any monitoring scheme, if appropriate. Controls should be applied throughout the construction period to ensure that emissions are mitigated.

9.89 The level of risk for dust nuisance differs depending on the stage of construction as previously outlined. Appropriate mitigation measures are anticipated to include:

Site Planning
- Effective barriers will be erected around dusty activities or the site boundary;
- No bonfires will be allowed on site; and,
- Machinery and dust-generating activities will be located away from sensitive receptors.

Construction Traffic
- No vehicles will be allowed to idle on site;
- Vehicles leaving site will be washed if necessary;
- All loads entering and leaving site will be covered;
- Runoff of mud and water will be prevented; and,
PART TWO
Air Quality and Noise

- All non-road mobile machinery will use ultra low sulphur diesel where available.

Site Activities
- Water will be used as a dust suppressant as appropriate;
- Temporary cover or re-vegetate earthworks if possible;
- Skips will be covered and drop heights minimised;
- Cutting equipment will have water suppression or suitable local exhaust ventilation systems;
- Dust-generating activities will be minimised; and,
- Stockpiles will be kept in place for the shortest possible time.

9.90 The traffic effects of the proposed development during the construction phase will be temporary and will be along traffic routes employed by haulage/construction vehicles and workers. The Haulage Strategy for the construction phase states that HDV traffic will be routed as far as practicable via highways and trunk roads, and away from residential areas. Six haulage indicative routes are proposed, as follows:
- Route 1 - M1 South-bound to Junction 26, A610, A6096;
- Route 2 - M1 North-bound to Junction 25, Bostock’s Lane, B5010 Derby Road, Town St/ Lenton St/ Ilkeston Road, Low’s Lane
- Route 3 – A610 or A6007;
- Route 4 - A610 West bound;
- Route 5 – A52 or A6096; and
- Route 5 – A52 or A6096 West bound.

9.91 The routes will be confirmed in the Construction Management Plan. Although no traffic data have been provided for predicted construction traffic on these routes, it is considered that the temporary construction traffic is unlikely to represent a significant increase in traffic and traffic emissions, compared with existing traffic on these major routes.
9.92 Best practice guidance on the control of fugitive emissions from construction activities may change from time to time, however the indicative measures outlined will be formalised in the AQMP, based on current best practice, prior to commencement of construction activities.

**Operational Mitigation**

9.93 As identified above, air quality is considered to be a ‘low priority concern’ for the development. It is not anticipated, therefore, that specific mitigation measures will be required once the development is operational.

9.94 The revised Masterplan is not considered to require any alteration to the proposed mitigation.

**Residual Impacts**

9.95 With the proposed construction mitigation measures/AQMP described in above in place, the residual effects for the construction phase are considered to be negligible, as summarised in Table 9.6 below.

**Table 9.6: Significance of Impacts of Construction Activities (With Mitigation)**

<table>
<thead>
<tr>
<th>Source</th>
<th>Significance of Impacts (Dust Soiling and PM$_{10}$)</th>
<th>Significance of Impacts (Ecology)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demolition</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Earthworks</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Construction</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Trackout</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td><strong>Overall Significance</strong></td>
<td></td>
<td><strong>Negligible</strong></td>
</tr>
</tbody>
</table>

**Conclusions**

9.96 An air quality assessment for a proposed large scale, mixed-use development at the site of the former Stanton Ironworks near Stanton-by-Dale, has been undertaken with reference to existing air quality in the area and relevant air quality legislation, policy and guidance. The full assessment report is presented in Appendix 9.1 (presented at Appendix A of this Addendum).
Construction phase impacts of the proposed development on local air quality are likely to be from dust emissions during the period of construction and demolition.

An AQMP incorporating emission control measures outlined in current best practice should be adopted as appropriate during the construction and demolition works at the site.

The significance of impacts of dust emissions was found to be negligible during all stages of construction, assuming the effective application of mitigation measures.

The primary air quality impact once the proposed development is complete and occupied is likely to be emissions from increased road traffic associated with the scheme. An assessment of operational impacts was undertaken using the latest version of the ADMS-Roads atmospheric dispersion model.

The pollutants assessed were NO\(_2\) and PM\(_{10}\). Concentrations of these key pollutants were predicted at the most relevant receptor locations for the year 2011, and for the year 2026 with and without the proposed development in place.

Under the future (2026) assessment scenarios, no exceedance of relevant long-term and short-term NO\(_2\) and PM\(_{10}\) air quality objectives was predicted at any of the assessed receptor locations.

Interpretation of the predicted impacts with guidance provided by Environmental Protection UK indicates that the overall impact of the proposed development in terms of NO\(_2\) and PM\(_{10}\) concentrations is ‘negligible’ to ‘moderate adverse’ at the receptor locations assessed.

By following Environmental Protection UK’s significance assessment method/guidance, it has been found that air quality is considered to be a low priority concern for the proposed development.

The revised Masterplan is not considered to result in a change in the significance of air quality impacts associated with the development.

**NOISE**

Introduction
9.106 This chapter provides an update to the assessment of noise for the proposed mixed used development at the site of the former Stanton Ironworks near Stanton-by-dale. The purpose of the update is to assess changes to the Masterplan as detailed in Chapter 3. It has been noted where amendments to the assessment are not considered necessary as a result of Masterplan changes. The assessment is based on assessment procedure at the time of the original planning submission. This assessment makes reference to noise reports undertaken after the original ES was submitted; these reports are provided in full in Appendix A of this Addendum.

9.107 RSK Environment Ltd (RSK) has carried out a noise and vibration assessment for a proposed large scale, mixed-use development at the site of the former Stanton Ironworks near Stanton-by-Dale, Derbyshire. The Masterplan includes the following elements:

- Neighbourhood centre: retail, restaurants, café/bar/hotel uses and community facilities;
- Provision of 1,950 residential units;
- 150 places within units for the elderly within a care village environment;
- Employment uses (Class B1, B2 and B8);
- A primary school;
- GP/health centre;
- Areas of formal sports pitches and informal open space;
- Allotments; and
- A Community Plaza.

Objectives

9.108 The objectives of the assessment are to:

- Assess the suitability of the site for the proposed development to appropriate guidance;
- Assess the potential impact of noise associated with construction of the proposed development on sensitive residential receptors;
- Assess the potential impact of noise sources within the development to affect existing or future sensitive receptors; and

- Assessment the potential impact of changes in road traffic noise due to traffic associated with the proposed development during construction and operation.

**Regulatory Framework**

**National Planning Policy Framework**

9.109 The National Planning Policy Framework (NPPF) has replaced Planning Policy Guidance (including PPG 24: Planning and Noise) as the means by which noise is considered within the planning regime. The NPPF does not contain assessment criteria, instead providing a series of policies, giving local authorities the flexibility in meeting the needs of local communities. The NPPF states:

*The planning system should contribute to and enhance the natural and local environment by [...] preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of [...] noise pollution.*

*Planning policies and decisions should aim to [...]*

- avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;

- mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;

- recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and

- identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

PPG 24
9.110 Planning Policy Guidance (PPG 24) specified Noise Exposure Categories (NEC) to assess the suitability of residential development. As NPPF does not contain specific assessment criteria for the noise environment, the NEC system of PPG 24 is still considered appropriate for assessing the suitability of sites for residential development. The four PPG 24 NEC are set out below:

Table 1.1 Noise Exposure Categories, PPG 24

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as a desirable level.</td>
</tr>
<tr>
<td>B</td>
<td>Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection against noise.</td>
</tr>
<tr>
<td>C</td>
<td>Planning permission should not normally be granted. Where it is considered that permission should be given, for example because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.</td>
</tr>
<tr>
<td>D</td>
<td>Planning permission should normally be refused.</td>
</tr>
</tbody>
</table>

Table 1.2 NEC noise levels

<table>
<thead>
<tr>
<th>NOISE LEVELS CORRESPONDING TO THE NOISE EXPOSURE CATEGORIES FOR NEW DWELLINGS $L_{Aeq,T}$, dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed sources</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>07:00 - 23:00</td>
</tr>
<tr>
<td>23:00 - 07:00</td>
</tr>
</tbody>
</table>
9.111 Individual noise events regularly exceed 82 $L_{A_{\text{max}}}$ dB several times in any night-time hour should be treated as being category C regardless of the averaged night time noise levels.

9.112 Other guidance documents and standards that are considered appropriate for this assessment are described as follows.

**WHO Guidelines**

9.113 WHO 1999: “*Guidelines for Community Noise*” has established guideline values for community noise in specific environments as summarised below:

- Outdoor Living Area – Serious Annoyance 55 dB(A), 16 hours between 07:00-23:00
- Outdoor Living Area – Moderate Annoyance 50 dB(A), 16 hours between 07:00-23:00
- Indoor Speech Intelligibility – Moderate Annoyance 35 dB(A), 16 hours between 07:00-23:00
- Night time Sleep Disturbance (inside bedrooms) 30 dB(A), 8 hours between 23:00-07:00 and 45 $L_{\text{max}}$ dB(A) between 23:00 – 07:00

9.114 WHO 2009: “*Night Noise Guidelines For Europe*” has updated the guideline value for night-time noise external to residential façades as an $L_{\text{night, outside}}$ of 40 dB.

**BS8233 Sound insulation and noise reduction for buildings**

9.115 BS 8233: 1999 “*Sound insulation and noise reduction for buildings - Code of practice*”, in agreement with WHO guidelines, has established various ‘reasonable’ criteria for internal noise levels. These are summarized below:

- Bedrooms: Not greater than 35 dB(A) $L_{\text{Aeq}}$, 8 hours (23:00 - 07:00)
- Bedrooms: Not normally greater than 45 dB(A) $L_{\text{Amax}}$ (23:00 – 07:00)
- Living rooms: Not greater than 40 dB(A) $L_{\text{Aeq,16 hours}}$ (07:00 - 23:00)
- Staff rooms, meeting rooms and executive offices: Not greater than 45 $L_{\text{Aeq}}$, 16 hours (07:00 – 23:00)
9.116 In gardens and balconies etc. it is desirable that the steady noise level $L_{Aeq,T}$ does not exceed 50 dB(A) and 55 dB(A) should be regarded as the upper limit, during daytime hours (i.e. 07:00 – 23:00).

**BB93 for schools**

9.117 Building Bulletin 93 provides upper limits for the external noise at the boundary of external premises. The upper limit for external noise for new schools is 60 $L_{Aeq,30min}$ dB within Section 2- Noise Control within BB93.

**BS4142 for assessment of industrial noise**

9.118 BS 4142 provides a methodology for assessing industrial noise against ambient background noise levels. A comparison of the difference between the background and rating levels (the noise from the identified industrial source), with additional correction, as predicted at the nearest residential receptor indicates the likelihood of complaint; the greater the difference the greater the likelihood of complaints:

- A difference of around +10 dB or more indicates that complaints are likely
- A difference of around +5 dB is of marginal significance
- A difference of -10 dB indicates that complaints are unlikely.

**CRTN and DMRB for assessment of road traffic**

9.119 The 'Calculation of Road Traffic Noise' (CRTN) produced by the Department of Transport / Welsh Office provides a method for the prediction of noise from road traffic. The Highways Agency Design Manual for Roads and Bridges, Volume 11, Section 3, Part 7 Had 213/11 Noise and Vibration, provides guidance on the assessment of noise impacts from roads and contains guidance for assessing the likely impact on amenity of noise generated by road traffic in the Long Term, which is assessed within this report. The criteria from DMRB for long term effects are presented in Table 1.3.

### Table 1.3

<table>
<thead>
<tr>
<th>Change in noise level $L_{A10,18hr}$</th>
<th>Magnitude of impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PART TWO
Air Quality and Noise

<table>
<thead>
<tr>
<th>dB Range</th>
<th>Level Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No change</td>
</tr>
<tr>
<td>0.1 – 2.9 dB</td>
<td>Negligible</td>
</tr>
<tr>
<td>3 – 4.9 dB</td>
<td>Minor</td>
</tr>
<tr>
<td>5 – 9.9 dB</td>
<td>Moderate</td>
</tr>
<tr>
<td>10 dB or more</td>
<td>Major</td>
</tr>
</tbody>
</table>

9.120 The DMRB short-term criteria should be used in the assessment in order to determine the noise impact associated with construction traffic and during temporary diversions. Permanent changes should be assessed using the long-term criteria.

9.121 The $L_{A10,18hr}$ is generally accepted to be equal to the $L_{Aeq,16hr}$ with a suitable constant adjustment (e.g. $-2$ dB for day time level $L_{Aeq, 16 \text{ hour}}$ and $0.9 \times L_{A10,18hr} - 3.77$ dB for night time level $L_{Aeq, 8 \text{ hour}}$) as per a document produced by TRL “Converting the UK traffic noise index $L_{A10,18hr}$ to EU noise indices for noise mapping”. Therefore, it is considered that the above criteria are suitable when assessing $L_{Aeq,T}$ noise levels.

BS 5228 for construction noise

9.122 BS 5228-1:2009: ‘Code of practice for noise and vibration control on construction and open sites – Part 1: Noise’. The two parts of BS 5228 provide guidance on the control of noise and vibration respectively, on construction and open sites. BS 5228 contains methodology for predicting construction noise levels taking both stationary and mobile noise sources into consideration within designated construction areas. BS 5228 also contains methodology for assessing construction noise levels, and methods of reducing noise emissions from construction sites. The 2009 edition of BS 5228 contains an updated resource of noise reference noise data for a wide range of site plant and activities. This data incorporates that previously published in the DEFRA update document.

9.123 A significant effect has been deemed to occur if the total noise level $L_{Aeq,T}$, including construction, exceeds the pre-construction ambient noise by 5 dB or more, which is subject to lower cut-off values of 65 dB, 55 dB and 45 $L_{Aeq, \text{ period}}$ dB from construction noise alone for the day, evening and night time periods respectively.
CRN for rail noise

9.124 The Calculation of Railway Noise, Department of Transport (CRN) produced by Department of Transport provides a method for the prediction of railway noise.

Consultation

9.125 Consultations with Erewash Borough Council and Broxtowe Borough Council Environmental Health Officers in 2010 have indicated that the proposed scope, measurement strategy and assessment methodology are appropriate and acceptable for the purposes of the assessment.

9.126 RSK re-consulted with Erewash Borough Council Environmental Health Officers in 2012 on the use of standards further to the introduction of NPPF. At this time Erewash Borough Council requested that background noise levels should be re-monitored due to changes in operations of surrounding industry since 2010.

SITE DETAILS

9.127 The site is located within the Erewash Valley between Nottingham and Derby and is situated approximately 1 km to the south of Ilkeston and 0.5 km to the north of Stanton-by-Dale. The majority of the existing buildings on the site are to be demolished.

9.128 The site and vicinity are currently affected by noise from various sources, as described below.

Noise sources

9.129 The principle source of road traffic noise currently affecting the site is the M1 motorway to the east of the site. Other major roads in the area are at greater distance and include the A609 and A6096, passing through the residential areas around the site.

Road traffic noise

9.130 The existing roads onto the site are currently unclassified roads and include Low’s Lane, Sowbrook Land, Ilkeston Road, Sevenoaks Road and Littlewell Lane.

9.131 Noise from road traffic is considered to be the dominant noise source affecting the site.
Rail traffic noise

9.132 It is understood that railway lines to the east of the site are used by freight trains. Railway lines further to the east of the site connect Nottingham and Leeds for use by passenger trains, which are not considered to be a major noise source affecting the site.

9.133 Noise from rail traffic is not considered to be dominant noise source affecting the site, but is considered within the assessment.

Industrial noise

9.134 Quarry Hill Industrial Estate is located north of the site. Noise due to the operation of the industrial premises is likely to affect the northern side of the site. Specifically, noise emissions were noted from a compactor operating within the WARD recycling facilities.

9.135 Since the ES was submitted, WARD recycling facility expanded its operation with additional plant on site as described in RSK report 296170(02) in Appendix 9.6 (presented at Appendix E of this Addendum).

Air traffic noise

9.136 East Midlands Airport is approximately 12 km south of the proposed site, and although air traffic noise is occasionally discernible on the proposed site, it is not considered a significant noise source affecting the site.

Vibration sources

9.137 The railway to the east of the site is not considered to be a source of ground-borne vibration that would affect future occupants of the site due to the distance from proposed residents and rail line.

MEASUREMENT DETAILS

9.138 Measurements were undertaken between March 23rd and March 24th 2010 and between 16th August and 23rd August 2012 over two baseline noise surveys. The locations of the various measurement positions are shown in Appendix 1.

9.139 An additional noise survey was taken at the development site in November 2013 in order to measure noise from the WARD recycling site. The details of this survey is
provided in RSK report 296170(02), Appendix 9.6 (presented at Appendix E of this Addendum).

**Measurement equipment**

### 9.140 Baseline noise measurements undertaken in 2010 were made using the following equipment:

- Norsonic 140 sound levels meter (SLM), (serial number 1402810) with pre-amplifier and microphone protection incorporating foam windshield;
- Norsonic 118 SLM (serial no. 31677) with pre-amplifier and microphone protected by foam windshield;
- Norsonic 1251 acoustic calibrator (serial no. 32194)
- Rion NL-31 SLM (serial no. 00773028) with pre-amplifier and microphone protected by foam windshield;
- Rion NC-74 acoustic calibrator (serial no. 34773048).

### 9.141 Baseline noise measurements undertaken in 2012 were made using the following equipment:

- Rion NL-32 SLM (serial no. 00503253) with pre-amplifier and microphone protected by foam windshield;
- Rion NL-32 SLM (serial no. 00503254) with pre-amplifier and microphone protected by foam windshield;
- Rion NL-28 SLM (serial no. 00211582) with pre-amplifier and microphone protected by foam windshield;
- Rion NC-74 acoustic calibrator (serial no. 34425552).

### 9.142 Calibration checks for the SLM were made before and after each measurement using the acoustic calibrator. No significant calibration drift was noted.

### 9.143 The sound level meters used conform to the requirements of **BS EN 61672-1:2003 Electroacoustics. Sound level meter, Specifications**. The calibrator used conforms to the requirements of **BS EN 60942: 2003 Electroacoustics, Sound calibrators**. The
equipment used has a calibration history that is traceable to a certified calibration institution.

**Survey Weather Conditions**

9.144 Weather conditions during the 2010 survey and the sound level measurement were noted to be clear or partially cloudy, with only short periods of light precipitation, mild to warm temperatures and moderate or lower wind speeds. No measurements were taken during significant rainfall or in the periods following rainfall when roads were wet.

9.145 Weather conditions during the 2012 surveys were noted at the time of survey on 16th and 23rd August 2012 that it was warm, with a light to moderate wind and clear sky. The weather conditions during the unattended monitoring have been checked using www.wunderground.com weather data from a nearby monitoring station, approximately 2 Km to the south-east.

9.146 The above conditions are considered suitable for the measurement of environmental noise levels, and are likely to be representative of conditions on-site. Otherwise, noise levels measured during unsuitable weather would have been excluded from the averaged noise levels.

**BASELINE RESULTS**

**Noise Measurement Results, 2010 survey**

9.147 Measured noise levels at location ‘A’ on 23rd and 24th March 2010 are graphically shown in Appendix 2 in terms of consecutive 5-minute noise levels and summarised in Table 4.1.

**Table 4.1** Summary of measurements at location ‘A’

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Duration</th>
<th>( L_{Aeq,T} ) dB</th>
<th>( L_{Amax,T} ) dB</th>
<th>( L_{A10,T} ) dB</th>
<th>( L_{A90,T} ) dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>14/03/2012</td>
<td>11:00:00</td>
<td>12:00:01</td>
<td>70.3</td>
<td>95.3</td>
<td>75.4</td>
<td>53.7</td>
</tr>
<tr>
<td>14/03/2012</td>
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Arithmetically average day-time  

9.148  

Attended measurements were made at various locations during the day and night-time as tabulated in Table 4.2.

### Table 4.2  

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<th>$L_{Amax,T}$ dB</th>
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<th>$L_{A90,T}$ dB</th>
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**PART TWO**

**Air Quality and Noise**

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<th>Duration</th>
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<th>$L_{A10,T}$ dB</th>
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<td>85.1</td>
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</table>

* Industrial noise sources have been calibrated to location F.

** Measured sound exposure levels of Freightliner used for the calculation of Railway day-time $L_{Aeq,16\text{ hour}}$ dB level.

*** Measured background noise levels at the proposed residential properties used to assess industrial noise sources.

**Noise Measurement Results, 2012 survey**

9.149 Noise levels measured between 16th August and 23rd August 2012 at monitoring locations L1, L2 and L3 are graphically shown in Appendix 2 in terms of consecutive 15-minute noise levels and summarised in Table 4.3.

**Table 4.3 Summary of unattended measurements at location L1, L2 and L3**

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<tr>
<th>Location</th>
<th>Date</th>
<th>Time</th>
<th>Duration</th>
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<th>$L_{A10,T}$ dB</th>
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<td>51.6</td>
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## Table 4.4  Attended measurements

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<td>12:19:20</td>
<td>00:25:00</td>
<td>51.8</td>
<td>67.0</td>
<td>55.7</td>
<td>44.8</td>
</tr>
<tr>
<td></td>
<td>S4</td>
<td>16/08/2012</td>
<td>13:16:27</td>
<td>00:10:00</td>
<td>58.3</td>
<td>77.3</td>
<td>59.6</td>
<td>51.3</td>
</tr>
</tbody>
</table>

9.150  Attended measurements undertaken on 16\textsuperscript{th} August and 23\textsuperscript{rd} August are tabulated in Table 4.4.
PART TWO
Air Quality and Noise

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S5</td>
<td>16/08/2012</td>
<td>14:13:26</td>
<td>00:30:00</td>
<td>59.7</td>
<td>77.5</td>
<td>61.3</td>
</tr>
<tr>
<td>S6</td>
<td>16/08/2012</td>
<td>15:11:46</td>
<td>00:30:00</td>
<td>48.8</td>
<td>64.1</td>
<td>50.5</td>
</tr>
<tr>
<td>S7</td>
<td>23/08/2012</td>
<td>14:19:25</td>
<td>00:25:00</td>
<td>59.6</td>
<td>78.7</td>
<td>60.2</td>
</tr>
<tr>
<td>S1</td>
<td>17/08/2012</td>
<td>01:42:30</td>
<td>00:15:00</td>
<td>46.2</td>
<td>71.0</td>
<td>45.0</td>
</tr>
<tr>
<td>S2</td>
<td>17/08/2012</td>
<td>02:02:33</td>
<td>00:15:00</td>
<td>58.6</td>
<td>84.7</td>
<td>50.6</td>
</tr>
<tr>
<td>S3</td>
<td>17/08/2012</td>
<td>00:52:48</td>
<td>00:15:00</td>
<td>45.7</td>
<td>58.1</td>
<td>47.0</td>
</tr>
<tr>
<td>S4</td>
<td>17/08/2012</td>
<td>01:20:08</td>
<td>00:15:00</td>
<td>51.1</td>
<td>69.0</td>
<td>52.3</td>
</tr>
<tr>
<td>S5</td>
<td>17/08/2012</td>
<td>03:04:00</td>
<td>00:15:00</td>
<td>41.2</td>
<td>58.9</td>
<td>42.8</td>
</tr>
<tr>
<td>S6</td>
<td>17/08/2012</td>
<td>02:34:48</td>
<td>00:15:00</td>
<td>44.5</td>
<td>58.9</td>
<td>46.0</td>
</tr>
<tr>
<td>S7</td>
<td>17/08/2012</td>
<td>03:37:00</td>
<td>00:15:00</td>
<td>57.5</td>
<td>69.2</td>
<td>59.5</td>
</tr>
</tbody>
</table>

9.151 The results from the baseline surveys taken in 2010 have been compared with the results from the baseline survey undertaken in 2012 and tabulated in Table 4.5.
Table 4.5  Comparison the results of baseline noise survey

<table>
<thead>
<tr>
<th>2012 survey location</th>
<th>2010 survey location</th>
<th>2012 measured level, dB</th>
<th>2010 measured level, dB</th>
<th>Difference, dB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Day</td>
<td>Night</td>
<td>Day</td>
</tr>
<tr>
<td>L1</td>
<td>A</td>
<td>74</td>
<td>68</td>
<td>71</td>
</tr>
<tr>
<td>L2</td>
<td>T</td>
<td>66</td>
<td>60</td>
<td>67</td>
</tr>
<tr>
<td>L3</td>
<td>O</td>
<td>56</td>
<td>42</td>
<td>58</td>
</tr>
<tr>
<td>S1</td>
<td>S</td>
<td>64</td>
<td>46</td>
<td>66</td>
</tr>
<tr>
<td>S2</td>
<td>R</td>
<td>73</td>
<td>59</td>
<td>73</td>
</tr>
<tr>
<td>S3</td>
<td>T</td>
<td>52</td>
<td>46</td>
<td>67</td>
</tr>
<tr>
<td>S4</td>
<td>Q</td>
<td>58</td>
<td>51</td>
<td>51</td>
</tr>
<tr>
<td>S5</td>
<td>F</td>
<td>60</td>
<td>41</td>
<td>78</td>
</tr>
<tr>
<td>S6</td>
<td>N</td>
<td>49</td>
<td>44</td>
<td>49</td>
</tr>
<tr>
<td>S7</td>
<td>C</td>
<td>60</td>
<td>58</td>
<td>57</td>
</tr>
</tbody>
</table>

Monitoring locations L1, S4 and S7 are generally affected by road traffic noise from the motorway. Attended and unattended measurements taken at locations close to the motorway in 2012 are generally higher than the results of similar measurements taken in 2010. This can be explained by the motorway being subject to a 50mph speed limit in March 2010 and operating at three lanes in each direction as opposed to the 4 lanes now constructed.

Noise levels measured in 2012 at monitoring locations affected by road traffic associated with the existing industrial estate on Littlewell Lane and surrounding roads were not significantly different to those measured in 2010.
Noise levels at the 2012 monitoring location L3, which is representative of the closest proposed residential boundary to the industrial estate to the north (WARD Recycling), have decreased by approximately 2 dB since 2010.

Short attended measurements undertaken at locations S1 – S4 in 2012 are affected by local road traffic noise from the nearest roads. The differences in measured noise levels at those locations due to the short duration of measurements.

**Noise Measurement Results, 2013 survey**

The measurement data from the 2013 survey showed that noise from the WARD recycling facility was 60 dB(A) at the location of the proposed residential façade. A background L90 level of 54 dB(A) was considered representative of the nearest proposed residential without WARD recycling noise. This is comparable to measurements taken in 2012.

**ASSESSMENT**

The assessment of noise has been undertaken by predicting noise levels at proposed residential receptors using computer noise modelling. The noise models have been produced based on following elements;

- Observations made at the time survey;
- Measured noise levels; and
- Traffic flows provided.

**Noise mapping**

A noise model of the site and vicinity has been constructed using the CadnaA noise prediction software, which incorporates the methodologies for predicting road traffic noise in CRTN, rail traffic noise found in CRN and noise propagation outdoors in ISO 9613.

Existing noise sources affecting the site are noise from road traffic on the local network, rail traffic to the east and industrial noise from the north. To create a representative baseline noise model, types of noise source are considered separately (roads, railway and industry) with the results converted into a uniform index and logarithmically added.
9.160 A noise model of roads has been created based on the traffic flows provided by Vectos transport planning specialists and presented in Appendix 10.1 (presented at Appendix A of this Addendum). Road traffic noise LA10, 18h levels are corrected by 2 dB for averaged day time noise level, LAeq, 16h and corrected by 10 dB for averaged night time noise level, LAeq, 8 hour per PPG 24 and “Converting the UK traffic noise index LA10, 18hr to EU noise indices for noise mapping” (P G Abbott and P M Nelson, TRL Report PR/SE/451/02, 2002). It should noted that correction of 10 dB applied for averaged night time noise levels were derived from the difference between LA10, 18hr and LAeq, 8 hr converted by the formula presented in section 1.3.7.

9.161 The baseline road traffic noise model was verified against measured results at location A where road traffic noise from the motorway was measured.

9.162 A model of railway lines has been created based on noise levels at location J, where sound levels of freight train passes were measured, number of coaches and events based on observations made on site. The measured LAeq, 1 minute at location J of 80 dB(A) has been used in the modelling to represent train noise with 8 train events per 16 hour day. The measured noise level at location J without freight trains passing was 50 dB(A). A combined LAeq, 16 hour noise level for the day-time period has been calculated to be 59.7 dB(A) at location J, which is used to calibrate railway noise within the noise model. It should be noted that measured noise levels at location S7 during the day time is 60 dB(A) which is well correlated to the calculated rail traffic noise at location J.

9.163 The noise model for the WARD site used for the ES was updated to take into account the measurements undertaken in 2013. An initial design for mitigating noise levels was modelled as presented in RSK report 296170(02), Appendix 9.6 (presented at Appendix E of this Addendum). This model was refined in 2014 in conjunction with the wider design team taking into account input from landscape architects, geophysics consultants and ecological consultants.

9.164 Noise contour maps of baseline and development scenarios are graphically presented in Appendix 4.
The quoted accuracy of sound propagation methodology is +/-3 dB up to 1000 metres, which covers the site from all significant noise sources. As a result of using long-term traffic data in the model, the validation of measurement positions to modelled results is difficult. However, the model upon which the site suitability is assessed has been validated (within 3 dB of measurement levels) to the long-term measurement position ‘A’ and short-term industrial noise measurement position ‘F’.

**Site suitability for the proposed residential development**

**Noise assessment from mixed sources**

Predicted noise levels across the locations where residential properties are proposed are in the range 59 –61 dB(A) during day-time and 49 – 55 dB(A) during night-time. The highest levels are predicted in the northern area of the site close to the recycling site.

The predicted noise levels at proposed residential receptors would classify the highest noise levels on the site as PPG 24 NEC B for both day and night. PPG 24 states for NEC B: ‘Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection against noise.’ Predicted NEC bands are presented in Appendix.

The changes to the master plan do not affect the conclusions of the ES assessment for site suitability from mixed noise sources.

**Industrial Noise Assessment**

Measured background $L_{A90, T}$ dB noise levels measured at the location of the nearest proposed residential façade to the WARD facility were 54 dB(A) during the day-time (representing the nearest proposed residential façade to the industrial noise source). It is believed that WARD recycling site operates during the day-time only (although at the time of writing this was not possible to confirm from the operator). The specific noise level from the WARD compactor at the nearest proposed façade facing north is predicted to be 60 dB(A) based on the latest measurements taken in 2014. The noise from the compactor is likely to contain acoustic features that could increase the likelihood of complaint as specified in section 8 of BS4142, which necessitates the application of a 5 dB penalty. The resultant ‘rating’ noise level of the service plant is 65 dB(A) at the proposed façade. The difference between the
measured background noise levels and predicted rating noise level of the compactor at the proposed residential receptors is 11 dB above the background noise level, which indicates that complaints would be considered ‘likely’.

**Demolition/Construction Assessment**

**Demolition**

9.170 It is understood that the existing buildings on site are to be demolished. While it is difficult to predict the noise levels associated with demolition, the distance of the existing buildings to existing residences indicate that noise levels would largely be within BS5228 threshold values and where exceedances did occur, that these would be transitory and not significant in terms of eligibility for contractors to provide sound insulation.

**Construction**

9.171 The existing sensitive residential receptors around the site are presented in Appendix 1. BS 5228 construction criteria are based on measured ambient noise levels. It is considered to be significant if the combined noise levels of the ambient and the construction emission levels exceed the ambient noise level by 5 dB or more, subject to lower cut-off values of 65 dBA(A), 55 dB(A) and 45 L$_{A_{eq}}$, period dB(A). The threshold levels are tabulated in Table 5.1

**Table 5.1 Identified sensitive receptors and Threshold levels**

<table>
<thead>
<tr>
<th>Receptor</th>
<th>Description</th>
<th>Representative Monitoring Location</th>
<th>Measured ambient level day time, L$<em>{A</em>{eq},T}$ dB</th>
<th>Threshold levels, L$<em>{A</em>{eq},T}$ dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>Junction of Sowbrook Lane, Ilkeston Road, Low’s Lane and Littlewell Lane</td>
<td>P</td>
<td>72</td>
<td>77</td>
</tr>
</tbody>
</table>
Construction work is to be phased across the site from Phase 1 to Phase 6 as graphically presented in Appendix 5.

Approximate distances of the different phases of the construction work to the nearest sensitive receptors are tabulated in Table 5.2.

<table>
<thead>
<tr>
<th>Receptor</th>
<th>Construction phase</th>
<th>Approximated distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>Residential Phase 2, Phase 4 and Green space Phase 5</td>
<td>25</td>
</tr>
<tr>
<td>R2</td>
<td>Green space Phase 1</td>
<td>160</td>
</tr>
<tr>
<td>R3</td>
<td>Green space Phase 1</td>
<td>95</td>
</tr>
<tr>
<td>R4</td>
<td>Employment Phase 3</td>
<td>400</td>
</tr>
</tbody>
</table>

Detailed information for the construction work was not available at the time of writing. Therefore an indicative assessment to identify the significance of the construction impact has been undertaken by assuming the following construction equipment is likely to be used.

- Dump truck around the construction area, at 10 km/h and at a rate of 1.5 / h;
- Mobile Crane;
- Cement mixer static, discharging for 10% of the time, idle for 90%;
- Generator; and
- Hand-held circular saw.

9.175 Noise level predictions have been undertaken by using the calculation methodology within BS 5228-1. The following assumptions have been made:

- Hard ground conditions;
- Plant complement assumed to be operating on the closest boundary;
- Barrier attenuation has not been applied;
- Shortest distance between the receptors and the boundaries of each construction phase; and
- Ground height to be stable between the receptors and the construction plant.

9.176 Noise emission levels have been predicted from the construction phases closest to the receptor locations. The predicted noise levels and exceedances above the threshold levels, tabulated in Table 5.1, are presented in Table 5.3.

**Table 5.3** Resultant levels of the construction works at receptors

<table>
<thead>
<tr>
<th>Construction Phase</th>
<th>Receptor</th>
<th>Ambient levels, dB</th>
<th>Construction emission level, dB</th>
<th>Combined level, dB</th>
<th>Threshold level, dB</th>
<th>Exceedance, dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Phase 2</td>
<td>R1</td>
<td>72</td>
<td>76</td>
<td>77</td>
<td>77</td>
<td>0</td>
</tr>
<tr>
<td>Green area Phase 1</td>
<td>R2</td>
<td>67</td>
<td>61</td>
<td>70</td>
<td>72</td>
<td>-2</td>
</tr>
<tr>
<td>Green area Phase 1</td>
<td>R3</td>
<td>66</td>
<td>65</td>
<td>68</td>
<td>71</td>
<td>-3</td>
</tr>
<tr>
<td>Employment</td>
<td>R4</td>
<td>71</td>
<td>54</td>
<td>71</td>
<td>76</td>
<td>-5</td>
</tr>
</tbody>
</table>
9.177 The assessment indicates that predicted noise levels from estimated construction works would not exceed the threshold levels.

9.178 Detailed traffic flows associated with the construction works were not available at the time of writing. Traffic flows for 2008 indicate that the number of Heavy Goods Vehicle (HGV) on the local network are generally below 40 HGV per hour except traffic flows on Low’s Lane (62 HGV per hour).

9.179 A negligible short-term impact in accordance with DMRB criteria would be considered when traffic noise is increased by 1 dB. As it is considered unlikely that construction traffic would amount to, at most 15 HGVs per day, a negligible noise impact on local noise sensitive receptors. Predicted increases in noise levels due to the increases in traffic flows due to the construction are presented in Table 5.4.
Table 5.4 Increases in noise levels due to the construction works

<table>
<thead>
<tr>
<th>Name</th>
<th>Traffic flows</th>
<th>Speed</th>
<th>HGV %</th>
<th>HGV %</th>
<th>2008 Baseline + construction traffic</th>
<th>Increases in noise levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longfield Lane</td>
<td>3584</td>
<td>38</td>
<td>5.2</td>
<td>3624</td>
<td>5.6</td>
<td>62.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2008 Baseline + construction traffic</td>
<td>62.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>predicted road traffic noise</td>
<td>0.2</td>
</tr>
<tr>
<td>School Lane</td>
<td>6829</td>
<td>39</td>
<td>5.5</td>
<td>6869</td>
<td>5.7</td>
<td>65.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2008 Baseline + construction traffic</td>
<td>65.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>predicted road traffic noise</td>
<td>0.1</td>
</tr>
<tr>
<td>Seven Oaks Road / Quarry Hill</td>
<td>6094</td>
<td>37</td>
<td>0.1</td>
<td>6134</td>
<td>0.3</td>
<td>62.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2008 Baseline + construction traffic</td>
<td>62.9</td>
</tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>predicted road traffic noise</td>
<td>0.2</td>
</tr>
<tr>
<td>Lows Lane</td>
<td>10244</td>
<td>39</td>
<td>5.5</td>
<td>10284</td>
<td>5.6</td>
<td>67.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2008 Baseline + construction traffic</td>
<td>67.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>predicted road traffic noise</td>
<td>0.1</td>
</tr>
<tr>
<td>Lenton Street/Ilkeston Road</td>
<td>12058</td>
<td>38</td>
<td>4</td>
<td>12098</td>
<td>4.1</td>
<td>67.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2008 Baseline + construction traffic</td>
<td>67.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>predicted road traffic noise</td>
<td>0.1</td>
</tr>
<tr>
<td>Quarry Hill Road (between Merlin Way and Longfield Lane)</td>
<td>9568</td>
<td>39</td>
<td>6.9</td>
<td>9608</td>
<td>7.0</td>
<td>67.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2008 Baseline + construction traffic</td>
<td>67.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>predicted road traffic noise</td>
<td>0.1</td>
</tr>
</tbody>
</table>
### Air Quality and Noise

<table>
<thead>
<tr>
<th>Location</th>
<th>Year</th>
<th>Date</th>
<th>Time</th>
<th>Temperature</th>
<th>Humidity</th>
<th>Noise Level</th>
<th>Wind Speed</th>
<th>Wind Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stanhope Street</td>
<td>6790</td>
<td>38</td>
<td>5.6</td>
<td>6830</td>
<td>5.8</td>
<td>65.7</td>
<td>65.8</td>
<td>0.1</td>
</tr>
<tr>
<td>Crompton Road / Hallam Fields Road</td>
<td>2920</td>
<td>40</td>
<td>0</td>
<td>2960</td>
<td>0.5</td>
<td>59.8</td>
<td>60.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Corporation Road</td>
<td>1777</td>
<td>38</td>
<td>2.4</td>
<td>1817</td>
<td>3.2</td>
<td>58.7</td>
<td>59.1</td>
<td>0.4</td>
</tr>
<tr>
<td>Stanton Gate</td>
<td>8727</td>
<td>36</td>
<td>3.9</td>
<td>8767</td>
<td>4.1</td>
<td>66.1</td>
<td>66.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Main Street</td>
<td>6791</td>
<td>35</td>
<td>5.6</td>
<td>6831</td>
<td>5.8</td>
<td>65.5</td>
<td>65.6</td>
<td>0.1</td>
</tr>
<tr>
<td>M1 motorway north of J25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northbound</td>
<td>62527</td>
<td>70</td>
<td>19.8</td>
<td>62567</td>
<td>19.8</td>
<td>80.4</td>
<td>80.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Southbound</td>
<td>63780</td>
<td>70</td>
<td>18</td>
<td>63820</td>
<td>18.0</td>
<td>80.2</td>
<td>80.2</td>
<td>0.0</td>
</tr>
<tr>
<td>A609 Nottingham Road, Trowell</td>
<td>16477</td>
<td>51</td>
<td>2.3</td>
<td>16517</td>
<td>2.4</td>
<td>69.5</td>
<td>69.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Lows Lane (between Littlewell Lane and Ilkeston Road)</td>
<td>16696</td>
<td>33</td>
<td>6.7</td>
<td>16736</td>
<td>6.8</td>
<td>69.8</td>
<td>69.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Littlewell Lane</td>
<td>6790</td>
<td>38</td>
<td>5.6</td>
<td>6830</td>
<td>5.8</td>
<td>65.7</td>
<td>65.8</td>
<td>0.1</td>
</tr>
</tbody>
</table>
Table 5.5 Increases in road traffic noise

<table>
<thead>
<tr>
<th>Name</th>
<th>Traffic Flow (2026 Fallback)</th>
<th>Traffic Flow (2026 With Dev and Mitigation)</th>
<th>Predicted road traffic noise, $L_{10, 18\text{hr}}$ dB</th>
<th>Increases, dB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Traffic Speed</td>
<td>%HDV</td>
<td>Traffic Speed</td>
<td>%HDV</td>
</tr>
<tr>
<td>Ryecroft Street</td>
<td>78</td>
<td>37</td>
<td>0%</td>
<td>172</td>
</tr>
<tr>
<td>No Mans Lane</td>
<td>525</td>
<td>39</td>
<td>3%</td>
<td>803</td>
</tr>
<tr>
<td>Lows Lane</td>
<td>11510</td>
<td>47</td>
<td>4%</td>
<td>18233</td>
</tr>
<tr>
<td>St Norbet Drive West (Kirk Hallam)</td>
<td>1427</td>
<td>37</td>
<td>7%</td>
<td>2423</td>
</tr>
<tr>
<td>Woodpecker Hill/Arbour Hill</td>
<td>525</td>
<td>39</td>
<td>3%</td>
<td>1827</td>
</tr>
<tr>
<td>Main Street</td>
<td>6503</td>
<td>36</td>
<td>4%</td>
<td>9676</td>
</tr>
</tbody>
</table>

9.180 A negligible short-term impact in accordance with DMRB criteria would be considered when traffic noise is increased by 1 dB. As it is considered unlikely that construction traffic would amount to, at most 15 HGVs per day, a negligible noise impact on local noise sensitive receptors. Predicted increases in noise levels due to the increases in traffic flows due to the construction are presented in Table 5.4.

9.181 The changes to the Masterplan do not affect the conclusions of the ES assessment of construction and demolition noise.

**Operation Assessment**

**Road traffic Noise**

9.182 It is likely that the proposed development will result in road traffic increases. Estimated traffic flows are shown in Appendix 3.
9.183 Estimated traffic flows on the local road networks have been provided by Vectos transport planning specialists for the 2006 'Fallback' scenarios and the 2026 'Do Something' scenarios, and show changes in traffic flows due to the proposed development (as set out in Section 10). The changes in traffic flows will result in changes in road traffic noise. The resultant traffic noise changes in the roads surrounding the site have been calculated and details of the calculations are presented in Appendix 4. Appendix 4 shows that traffic noise changes as a direct result of the development would be less than 3dB and would be considered negligible. However, the traffic modelling indicates that traffic distribution in the area will change, and some minor roads (as set out in Table 5.4), will be subject to a more than a 20% increase in traffic which will result in a change in traffic noise level of more than 1 dB.

9.184 Increases in road traffic noise of below 3 dB are considered to be a ‘negligible’ impact in accordance to DMRB long-term criteria. This applies to all roads, with the exception of Ryecroft St an woodpecker Hill/Arbour Hill which are predicted to experience increases of 3.4 dB (A) and 5.4 dB(A) respectively. This would result in minor and moderate impacts respectively.

9.185 The changes to the Masterplan do not affect the conclusions of the ES assessment of road traffic noise.

**Commercial Unit Noise**

9.186 It is anticipated that there would be industrial noise sources associated with the proposed commercial buildings. However, as this an outline application and end occupiers are not currently known, detailed information at the time of writing is not available. Therefore an indicative assessment has been undertaken. The closest proposed residential properties would be approximately 50 m from the proposed commercial properties and the measured background noise levels at location S3 are 45 dB(A) and 43 dB(A) during day and night time respectively. In order to ensure that the likelihood of complaints due to new noise source is ‘less than marginal’, according to BS 4142, it should be ensured that cumulative noise levels from future commercial uses do not exceed the existing background noise level by more than 5 dB. The cumulative noise limits (inclusive of any ‘rating penalty’ that may need to be applied for tonal or other noise components likely to cause additional annoyance) for service plant at the closest receptors would be 50 dB(A) and 48 dB(A) during day and night respectively.
The changes to the Masterplan do not affect the conclusions of the ES assessment of Commercial Unit Noise.

**MITIGATION RECOMMENDATIONS**

**Site Suitability**

The proposed development at the site comprises a mix of residential houses/flats and commercial areas. Noise levels will need to be mitigated to ensure the proposed development is suitable for the location. The following text provides examples of mitigation packages that could be incorporated into the development. It may be possible to achieve the noise level criteria using an alternative package of mitigation, and the exact mitigation package will be defined during the detailed stage of the planning process.

The predicted noise levels across the site within proposed residential buildings are 56 – 59 dB(A) along Ilkeston Road and Littlewell Lane, 61 dB(A) to the north of the site and 59 – 61 dB(A) to the south eastern side of the site (close to the motorway). In order to meet outdoor noise criteria of 55 dB(A) as the upper limit, noise levels will need to be reduced where levels exceed 55 dB(A). This could be achieved by using a 1.8 - 2m close boarded and/or acoustic fence where private gardens are proposed. An alternative way to reduce external levels would be to locate the outdoor living space (e.g. gardens/balconies) facing away from the dominant noise sources.

In order to meet the internal target noise level of 35 dB(A) for ‘reasonable’ criteria within proposed habitable rooms close to dominant noise sources (road traffic noise) a noise reduction of up to 25 dB(A) will be required. Such a requirement could be achieved using standard thermal double glazed windows, which would afford sufficient protection when windows closed. Therefore, alternative means of ventilation (e.g. acoustic trickle vents) will need to be provided in habitable rooms (i.e. rooms potentially used as bedrooms).

The comparison between measured background noise levels and estimated noise emission levels at the proposed residential properties close to the existing industrial noise source to the north indicates that it will be necessary to mitigate noise from this source according to BS 4142. In order to achieve this, a bund and barrier combination has been incorporated into the design of the development as presented in Appendix F, Figure 9-1. With the bund and barrier in place the noise from the WARD recycling facility at the nearest proposed residence is predicted to be 54 dB(A). With a tonal correction of 5 dB the resulting BS4142 assessment would be +5 dB, and of marginal significance. The predicted noise contours for
the WARDS recycling facility with the bund and barrier mitigation in place are shown on Appendix F, Figure 9-2.

9.192 No mitigation is required for the proposed school site as the predicted noise levels are below the upper limit of 60 dB(A).

Construction and Demolition Phase

9.193 Demolition and construction working hours are suggested to be restricted to be within the following times:

- Monday – Friday 8am to 6pm
- Saturday 8am to 1pm

9.194 Working hours, where agreed, should be rigorously observed for any operations that are likely to generate noise levels noticeable by neighbouring residents. Any exceptions deemed essential to the works should be authorised by the local authority.

9.195 The following general noise control measures will be integrated into the noise management plan for construction at the site:

- Site vehicles will not be over revved, or left with engines idling in close proximity to residential neighbours; and
- All plant and machinery to be properly maintained and silenced in accordance with manufacturer's instructions;

9.196 It is recommended that effective communication of site activities and liaison with local residents is essential in cultivating a positive attitude in the community. A designated staff or communication centre should be made available to respond to any complaints or queries. Information on current and forthcoming activities would be made freely available using site and community notice-boards and on-line access communication tools.

9.197 If appropriate, noise can be controlled through formal agreement with the local authority, for example a ‘Section 61’ Application. This mechanism imposes conditions on the demolition and construction works to minimise disturbance and can include limits on hours of working, limits on noise levels at receptors and conditions relating to the mitigation that should be included within the works. Such agreements are normally put into place after planning permission has been granted and the detailed construction methods and programme have been defined.
9.198 In addition, specific noise mitigation measures will need to be utilised during the phases when BS5228 thresholds are exceeded (normally when work is very close to the receptors). These mitigation measures are likely to include of some or all of the following measures:

- Use of noise barriers between the works and the closest receptor;
- Timing of works to ensure noisy activities do not run concurrently; and
- If high noise levels cannot be reduced, it will be important to ensure that good communication put in place with local residents to ensure that they are given prior notice of periods of work that have the potential to cause disturbance.

**Operation Phase**

9.199 During the detailed design stage, mitigation of traffic using minor roads will be defined, and it is anticipated that this will significantly reduce traffic levels on Ryecroft Street and Woodpecker Hill/Arbour Street. This is likely to reduce the level of traffic nose change to less than 5 dB which would result in minor or negligible impacts. However, this figure for Woodpecker Hill/Arbour Hill relies on the output of the NMMTM model which is considered to overestimate traffic flows on this route for the reasons set out in paragraphs 10.210-10.213 of the original Environmental Statement (presented at Appendix A of this Addendum). In reality, it is considered that the actual traffic flows will be substantially less and the noise impact will not significantly alter from existing levels.

**CONCLUSIONS**

9.200 RSK has undertaken baseline noise surveys on and around the site in March 2010, August 2012 and November 2013.

9.201 The results of the baseline survey 2012 indicate that the ambient noise levels across the site have decreased within the site where major residential properties are currently proposed.

9.202 The noise levels across the site are categorised as PPG NEC B for day and night for day and night periods for mixed sources, which is considered to be suitable for the proposed residential development with appropriate mitigation measurements.

9.203 In order to meet indoor noise levels for ‘reasonable’ criteria within habitable rooms, suitable glazing mitigation will need to be provided.
9.204 In order to meet outdoor noise criteria of 55 dB(A) as the upper limit, noise levels will need to be reduced by using a 1.8 m fence where private gardens are proposed or locating the outdoor living space (e.g. gardens/balconies) facing away from the dominant noise sources.

9.205 With regards to the existing industrial noise source to the north of the site, the difference between the measured background noise levels and predicted noise emission levels at the proposed residential properties close to the industrial noise indicate complaints would be ‘likely’ without mitigation. In order to reduce the impact from the existing industrial noise source to be of ‘marginal significance’, a bund and barrier combination has been incorporated into the designed for the site between the residential area and WARDS recycling facility.

9.206 At this stage, there is no detailed information as to the industrial noise sources associated with the proposed commercial units in the eastern area of the site. An indicative criteria is given based on the measured background noise levels on site. It should be noted that the indicative assessment is based on ‘worst case’ scenario of industrial noise sources located at the shortest distance from the proposed residential properties and with no screening.

9.207 It is predicted that demolition and construction noise will generally be below threshold levels at sensitive residential receptors around the site or only for short periods of time when above threshold levels. If appropriate, demolition and construction noise can be controlled through formal agreement with the local authority. It is considered that the noise from demolition and construction can be adequately controlled to ensure that it will not cause significant disturbance to existing receptors of the proposed development.

9.208 The estimated traffic flows have been considered. The increases in traffic flows on some roads has been predicted to result in a ‘minor’ to ‘moderate’ noise impact in accordance to DMRB long-term criteria.
10.0 TRANSPORT

INTRODUCTION

10.1 The findings relating to Transport set out within Chapter 10 of the original Environmental Statement (dated, November 2012) presented at Appendix A have been assessed against the proposed amendments described at Chapter 3 of this ES Addendum. This review has been undertaken to consider the potential transport environmental impacts of the proposed development with specific regard to: severance, driver delay, pedestrian delay, pedestrian amenity, and accidents and safety.

FINDINGS OF ES ADDENDUM REVIEW

10.2 The proposed amendments to the submitted parameter plans comprise the relocation of residential units from the north of the site (formerly Phase R6) to the southwest corner of the site (formerly Phase G1), while the area of sports pitches in the southwest corner of the site (formerly Phase G1) will be relocated to the north of the site (formerly Phase R6). In addition, a noise attenuation bund will be provided in the northwest corner of the site.

10.3 In reviewing the proposed amendments within the context of the ES, the following are identified as the matters of key considerations:

- The proposed amendments will not result in a change in development quantum.
- The traffic generation and distribution of the development will remain unchanged from that assessed in the ES.
- On the basis of the above two points, the forecast traffic flows on road links assessed within the ES will not change.
- The ES Transport chapter assesses environmental impacts across a range of criteria based on traffic volumes. As the traffic volumes are not changing, the impacts identified will not change.

10.4 It is concluded that the proposed amendments will result in no change to the overall findings/conclusions set out within the original ES Transport chapter.

10.5 Appendix 10.3 contained in Appendix E of this ES Addendum contains a written statement from the Transport Consultants confirming the above.
11.0 ARCHAEOLOGY

INTRODUCTION

11.1 The findings relating to Archaeology set out at Chapter 11 of the original Environmental Statement (dated, November 2012) presented at Appendix A of this ES Addendum have been assessed against the proposed amendments described at Chapter 3 of the ES Addendum. This review has been undertaken to consider the potential archaeology environmental impacts of the proposed development.

FINDINGS OF ES ADDENDUM REVIEW

11.2 The proposed amendments comprise the relocation of residential units from the north of the site (formerly Phase R6) to the southwest corner of the site (formerly Phase G1), while the area of sports pitches in the southwest corner of the site (formerly Phase G1) will be relocated to the north of the site (formerly Phase R6). In addition, a noise attenuation bund will be provided in the northwest corner of the site.

11.3 In reviewing the proposed amendments within the context of the original ES, the following are identified as the matters of key considerations:

- Parameter Plan 1: Land Use Plan - the key items considered have been the reconfiguration of the land use, that being the provision of formal open space including sports pitches to the north of the Nutt Brook and the relocation of the proposed residential dwellings (formerly Phase R6) to south of the Lowes Lane (formerly Phase R5) and the proposed location of the noise bund.
- Parameter Plan 4: Access and Movement - the re-location of the proposed secondary route junction to the North South Link Road has been considered.

11.4 It is concluded that the proposed amendments will result in no change to the overall findings/conclusions set out within the original ES Archaeology chapter.

11.5 Appendix 11.3 presented at Appendix E of this ES Addendum contains a written statement from the Technical Consultants confirming the above.
12.0 **Socio-economic**

**Introduction**

12.1 The findings relating to socio-economic set out at Chapter 12 of the original Environmental Statement (dated, November 2012) presented at Appendix A have been assessed against the proposed amendments described at Chapter 3 of the ES Addendum, and also in respect of the Retail Impact Assessment Addendum, submitted to the Council in February 2014.

12.2 The Retail Impact Assessment (RIA) Addendum (dated February 2014) is included at Appendix D (Appendix 12.2) of this ES Addendum, and supersedes the RIA contained at Appendix 12.2 of the original Environmental Statement (dated November 2012) contained at Appendix A.

12.3 The outcome of the review is set out below.

**Findings of ES Addendum Review**

12.4 The 2012 socio-economic ES chapter assessed the effects in terms of:

- Construction employment;
- Operational employment;
- Housing and population;
- Education;
- Healthcare;
- Local and household expenditure;
- Retail; and
- Open Space

12.5 The construction effects have been assessed using standard ratios of construction employment to output, independent of detailed design and therefore not sensitive to proposed changes.

12.6 Additionally, the proposed changes do not affect the number, size, type and tenure of residential units, and therefore the effects on housing, population, additional local spending, employment, demand for open and playable space, education facilities, and health facilities will not alter as a result of the amended design.
12.7 Overall, the key parameters of the scheme relevant to socio-economics, including the construction output, operational employment floorspace, number of residential units, size and tenure split, open space and community facilities that form part of the development have not changed substantially and would therefore yield impacts of the same magnitude and significance as previously assessed.

12.8 Given the continual release of new public datasets, for example 2011 Census, Annual Population Survey, Business Register and Employment Survey, Annual Schools Census, and JSA claimant count among others, the baseline against which impacts were assessed is constantly changing. However, given the relatively short time between the submitted assessment and present, and the inclusion of early 2011 Census data in the original assessment, the effect of demographic and economic change in the area is considered limited.

12.9 The most significant change in the underlying baseline datasets will likely be a decrease in surplus capacity in local schools. However, given the scheme includes a 2-FE primary school as part of the development, the significance of the effect after mitigation remains consistent with the previous assessment.

12.10 A Retail Impact Assessment (RIA) is appended to Chapter 12 of the ES, and its conclusions summarised at paragraph 12.101 – 12.102 of the Environmental Statement (November 2012). An addendum report was issued to the Local Planning Authority on 24th February 2014 to update the quantitative assessment within the submitted Retail Impact Assessment, which now supersedes the references in the paragraphs above in terms of references to convenience and comparison turnover generated by the proposed development. Paragraphs 4.11-4.14 of the RIA addendum should be read to update paragraphs 12.101 – 12.102 of the submitted Environmental Statement (November 2012), and confirm that the significance of the impacts as identified remains the same.

12.11 As such, the socio-economic impacts assessed in the Environmental Statement for Stanton Ironworks, Erewash in November 2012 remain of the same significance as of July 2014.
13.0 WASTE

INTRODUCTION

13.1 The findings relating to Waste Chapter 13 of the original Environmental Statement (dated, November 2012) have been assessed against the proposed amendments described at Chapter 3 of the ES Addendum.

13.2 The outcome of the review has resulted in an amendment to Table 13.5 and original Chapter 13 paragraphs 13.66 and 13.67. For ease of reference and completeness, the Waste chapter has been reproduced below, with amendments made only to the Table 13.5 and original Chapter 13 paragraphs 13.66 (now Paragraph 13.67 in this ES addendum) and 13.67 (now Paragraph 13.68 in this ES addendum).

FINDINGS OF ES ADDENDUM: UPDATED WASTE CHAPTER

13.3 This section considers the environmental effects associated with wastes generated by the proposed development and their subsequent management during construction and post-construction phases (operation). It is anticipated that, given the extended development period of 15 years, that some elements of the construction programme will take place simultaneously during post-construction activities and hence the character of waste streams will vary during the course of the project. The effects have been assessed in terms of expected quantities, their composition and character, and the local/regional capacity to treat these waste streams.

13.4 Relevant national, regional and local legislation with respect to wastes and their management is also reviewed in this section. This forms the basis of the assessment criteria employed to assess impacts and the mitigation measures proposed to eliminate potential effects.

13.5 In addition, possible disposal routes for waste and opportunities to minimise residual waste going to landfill during construction and operation will also be discussed.

13.6 As a protocol, this section considers construction and demolition (C&D) to be solely generated during development of the Site and commercial and industrial (C&I) waste and municipal solid waste (MSW) generated only during the post-construction phase.

Policy Context

National Policy and Guidance

13.7 This revised Directive sets out the position regarding waste and its disposal. It introduced the waste hierarchy (see Figure 13.1), which is widely recognized as the basis for the development and implementation of sustainable waste management strategies.

![Waste Management Hierarchy Diagram](image)

**Figure 13.1 Waste Management Hierarchy**

The Landfill Directive (1999/31/EC)

13.8 The Directive’s overall aim is “to prevent or reduce as far as possible negative effects on the environment, in particular the pollution of surface water, groundwater, soil and air, and on the global environment, including the greenhouse effect, as well as any resulting risk to human health, from the landfilled of waste, during the whole lifecycle of the landfill”.

Finance Act 2012 / The Landfill Tax (Amendment) Regulations 2012 No 885

13.9 Landfill tax was introduced in 1996 and is a tax on waste disposed of at authorised landfill sites in the UK to discourage the use of landfill as a waste disposal option through the use of financial measures. Landfill tax for active wastes is currently £64/t, however this will change to £72/t on the 1st April 2013, and will escalate by a further £8/t every year until 2014 when the escalator will be reviewed again. The rate for inert wastes is currently £2.50/t however any rock, clay, sand, gravel, crushed stone, construction stone and aggregates, sub-soil and silt contaminated with topsoil, asbestos-containing materials, metal, wood or plastic etc. will
be deemed non-natural and therefore attract the higher rate of landfill tax for active material i.e. £64/t. There will be a floor under the standard rate, so that the rate will not fall below £80 per tonne from 2014-15 to 2019-20.

**CL:AIRE Code of Practice; Definition of Waste: Development Industry Code of Practice (March 2011)**

13.10 A voluntary Code of Practice (CoP) prepared by CL:AIRE (Contaminated Land: Applications in Real Environments) through detailed consultation with various key stakeholders including industry and the regulator, the Environment Agency (EA). It is the responsibility of the holder of a material to form their own view on whether that material is waste or not. The CoP assists in this decision making process only, and does not absolve you from taking any additional steps / advice before proceeding. The CoP will be used wherever possible to minimise any soils or demolition materials generated on site as being considered as waste.

**Waste (England and Wales) Regulations 2011**

13.11 The Regulations require organisations to confirm they have applied the waste management hierarchy when transferring waste and include this declaration in Waste Transfer Notes, along with using standard industry classification code (SIC) codes. They introduce a two tier system for waste carrier and broker registration, including a new concept of a waste dealer. They also make amendments to Hazardous Waste control and exclude some categories of waste from waste controls.

**The Controlled Waste (England and Wales) Regulations 2012**

13.12 The Regulations replace the Controlled Waste Regulations 1992 in England and Wales, providing for the classification of waste (household, industrial or commercial waste), and listing the types of waste for which local authorities may make a charge for collection and disposal. Regulations also include some amended and updated definitions and classifications to improve their clarity and bring them into line with other recent legislation. Local Authorities are now able to charge for the disposal of waste arising from a wider range of non-domestic premises than previously permitted.


13.13 The Department of Environment Food and Rural Affairs’ Waste Strategy published in May 2007 focussed primarily on MSW, as well as making provision for the future creation of recycling/recovery targets for C&I waste. The UK government has also set a target to halve
the amount of C&D waste going to landfill by 2012 through waste prevention, reduction, re-use and recycling methods.

13.14 WS2007 also sets out the Government’s strategy for sustainable waste management in England. The document sets targets for recycling and composting of household waste by 50% of 2000 level by 2020 and the recovery of municipal waste by 75% by 2020. The Strategy also details the need for a cultural change and suggests that this should be embedded in planning, on a local and national scale, suggestions include:

- Providing more recycling bins in public places through cooperation with the owners and managers of relevant land and premises used by the public to make it easier to recycle away from home;
- Prioritise efforts to manage wastes in line with the waste hierarchy; and
- Develop voluntary approaches to cutting waste, increase recycling, and improve the overall quality of recyclable materials, working closely with business sectors and the waste and material resource industry.

The Aggregates Levy Sustainability Fund (ALSF)

13.15 The ALSF was introduced on the 1st April 2002 principally to promote more environmentally friendly aggregates extraction and transport methods. Additionally the fund takes steps towards improving the management of C&D waste. This is achieved through funding of new recovery and recycling initiatives that target C&D waste. Currently the levy charged is at £2.00 per tonne.

Planning Policy Statement 10 (PPS10)

13.16 PPS 10 (2011) identifies the importance of the planning system and its role in contributing to core Government policies for delivering sustainable waste management.

13.17 PPS 10 states that sustainable waste management should involve moving waste up the waste hierarchy of reduction, reuse, recycling and composting, using waste as a source of energy and finally disposing waste as a last resort.

13.18 Paragraph 2 sets out the importance of planning in the delivery of sustainable waste management through the development of appropriate strategies for growth, regeneration and the prudent use of resources and by ensuring sufficient opportunities for new waste management facilities.
13.19 Paragraph 3 of PPS 10 sets out the objective of providing a framework for communities to take responsibility for their own waste. This implies that the transportation of waste should be minimised and treatment should be as close to the source of the waste as possible. This paragraph also outlines the key strategy to drive waste up the waste hierarchy and ensuring that the design and layout of new developments should support sustainable waste management.

13.20 Paragraph 17 suggests that development plans should identify sites and areas suitable for new or enhanced waste management facilities for the needs of these areas.

13.21 Paragraph 35 of PPS 10 highlights the benefits of good design and layouts for securing opportunities for sustainable waste managements, including kerbside collections and community recycling. This section places responsibilities on the planning authorities to ensure that new developments make sufficient provisions for waste management and promote design and layouts that secure the integration of waste management facilities without adverse impact on the street scene.

**The Site Waste Management Plans Regulations 2008**

13.22 Site Waste Management Plans (SWMP) became a legal requirement in England for all construction and demolition projects that have a construction value of more than £300,000. The UK Government’s red tape challenge issued in April 2012 has placed a degree of uncertainty with respect to these regulations and these may be scrapped in the future. Regardless of any future policy decisions, the Stanton project will adopt best practise and retain the use of SWMPs as a means of minimising waste through design and construction plans.

**Hazardous Waste (England and Wales) Regulations 2005 (as amended)**

13.23 The Hazardous Waste Regulations, which came into force in 2005, provide requirements for controlling and tracking the movement of hazardous waste and bans mixing different types of hazardous waste, and the mixing of hazardous and non-hazardous wastes in order to reclassify wastes and non-hazardous.

**Making Space for Waste, A Practical Guide for Developers and Local Authorities (ADEPT), June 2010**
This document has been designed to allow developers to follow a step by step process when considering the design of waste facilities in new developments. A Developer’s Checklist has been provided to ensure that waste management is an integral part of the design process.

Regional Policy and Guidance

The Regional Waste Management Strategy (RWMS) “From Rubbish to Resource”, 2004 – This non-statutory document was created to set out in detail the regional approach to waste management. A principle objective of the RWMS is to ensure that by 2020, 45% of waste in the region is recycled or reused, and the total amount of waste landfilled is less than 20% of waste produced.

Local Policy and Guidance


Following the introduction of the Planning and Compulsory Purchase Act 2004, the framework for planning policy has shifted from the use of Structure Plans and Local Plans to the preparation of Local Development Frameworks (supplemented by a number of other supporting documents eg. Area Action Plans, Development Plan Documents etc). The Erewash LDF has not yet been prepared and as such a number of policies set out within the previous Erewash Borough Local Plan (2005) which should have been reviewed in 2008 have been retained. Key policies regarding waste that directly relate to the Stanton development include the following:

Policy LP1 – Sustainable Development

The borough council will require all development proposals to reflect the principles of sustainable development by:

- Being well related to existing patterns of development;
- Re-using land and buildings wherever possible in preference to greenfield land;
- Protecting and enhancing the quality of the built and natural environment; and
- Minimising the need to travel between home, work and other activities and providing the opportunities for journeys other than by car.

POLICY E4 - STANTON IRONWORKS REGENERATION

The development of the site should include improved road links to the M1 motorway, a rail link for freight, improved infrastructure, extensive landscaping, improved public transport,
footpath and cycle path links and habitat improvement in connection with surface water treatment. New buildings should be of a high standard of design, energy efficient and where appropriate have facilities for waste recycling.

**Derby and Derbyshire Waste Local Plan (2005)**

13.29 The Derby and Derbyshire Waste Local Plan (2005) is scheduled to be replaced by the Waste Core Strategy Development Plan Document (DPD) and a supplementary Waste Implementation Supplementary Planning Document which due to be issued in 2013. These documents are being prepared in conjunction with Derby City Council and Derbyshire County council and cover waste related development in the region upto year 2030.

13.30 The Site is likely to include one or more of the following facilities:

- **Bring Sites (recycling / composting)** – the 1999 Derbyshire Waste Management strategy aimed to provide one Bring Site per 750 households which should be conveniently located, however the 2005 Plan states that it would be unrealistic to be so prescriptive. When locating these sites the developer should consider the environmental concerns which arise from their proximity to homes and the potential disturbance to residential amenities by noise and traffic, vandalism to the bins and the associated fears of petty crime.

- **Recycling centre** – there are several types of recycling centre, all of which have environmental impacts. The main environmental concerns relating to local communities include: traffic, noise, odour, dust and visual impact and these issues should be considered during the planning process.

- **Household waste recycling centre** – The Waste Strategy 2006 states that Derby and Derbyshire will need to provide more household waste recycling centres and these centres should be situated in places, which people visit for other purposes.

- **Community composting facilities** – these are small-scale facilities offering localised composting opportunities. Although based around a building they may have other impacts such as odour or visual impacts. The Waste Strategy 2006 states that there could be conflict between the need for local facility and the perceived discomfort of those living close to the site.

13.31 As such, the local waste policy framework will provide a strategic role in ensuring the integration of the management of wastes during the construction and post-construction phases of the project.
13.32 Until the DPD this has been published, the Waste Local Plan will take precedence. Specific policies within the Plan are discussed in further detail below.

13.33 **Policy W1a** of the Plan highlights that proposals for waste developments will be assessed against sustainability considerations including the waste hierarchy, the proximity principle and self-sufficiency.

13.34 **Policy W1b** highlights that waste developments should be permitted if the development would help to cater for the needs of the local area in terms of quantity, variety and quality.

Derbyshire produces two million tonnes of controlled waste each year, much of which is moved significant distances before it is finally disposed of as a result the proposed development should consider movements of waste during the planning period.

13.35 **Policy W2** highlights that waste development should aim to reduce transport movements or provide alternative methods of transport.

13.36 **Policy W4** adopts the precautionary principal whereby waste development will be permitted only if the development would not result in material harm caused by contamination, pollution or other adverse environmental or health effects.

13.37 **Policy W6** specified that waste developments will only be permitted if the development would not result in harm caused by contamination, pollution or other adverse environmental or health effects to human health, communities, the site of the development, nearby land use or the wider environment.

13.38 **Policy W7** highlights that waste developments will only be permitted if the appearance of the development would not materially harm the local landscape and should respect the character of the area. Whilst it also outlines that any waste development should not be larger than necessary.

13.39 **Policy W8** refers to the impact of transporting waste on the existing road network, local communities and the environment.

13.40 **Policy W9** highlights that waste developments will be permitted if the development would not affect other land uses to the extent that it would materially impede or endanger the social or economic activities or interests of the community.

13.41 The Waste Local Plan 2005 highlights the importance of providing opportunities for the recovery of materials from waste however each of the likely options listed above have
potential environmental impacts and steps will be taken during the design and planning process to reduce the environmental impact of the chosen facilities. The following issues should be considered during the planning phase.

**Derby and Derbyshire Waste Core Strategy Development Plan Document**


13.43 The document sets out a variety of options in planning the future waste policies for Derby and Derbyshire. The following paragraphs outline the key messages from the consultation.

- The majority of respondents were keen for higher levels of recycling and composting and other forms of treatment rather than simply aiming for government targets;
- 62% of respondents favoured diverse patterns of waste facilities with local areas taking responsibility for their own waste rather than one large, more centralised approach concentrated around principle urban areas; and
- The overriding message from the responses was that despite the challenges, the provision for waste facilities should be made locally.

Question 4 of the Big Choices Report asked respondents to identify sites for future waste management especially with regard to the large scale treatment of commercial and industrial waste. Amongst the 25 sites identified by respondents was the Stanton site.

**Assessment Methodology & Significance Criteria**

13.44 This assessment considers waste generated within the site boundary and the waste management issues at local and regional levels. Waste that is generated offsite, but is linked to the proposed development, such as waste from the manufacturing process of materials used onsite, is outside the scope of this assessment.

13.45 The temporal scope of this assessment is the period from when site preparation begins, during construction and through to site occupation (year one of full operational capacity).

13.46 In technical terms, waste is defined in Section 75(2) of the Environmental Protection Act 1990 as “...any substance or object...which the holder discards or is required to discard”. The technical scope of this assessment includes the assessment of C&D and C&I waste.

**Assessment Method**
13.47 The assessment of waste effects associated with the Stanton development is based on various sources of information including:

- The planned development size and composition (floor areas and land use type have been used to estimate construction and operational waste generation rates); and
- Waste estimation tools (e.g. internationally recognised methods such as the British Standard BS 5906 2005).

13.48 Both construction and post-construction waste estimations given in this section make use of benchmarking models and generation tables. Actual quantities and compositions may differ from estimated quantities and compositions because of changes in the variables that influence actual waste quantities and composition. These variables include:

- Recycling systems and waste infrastructure available;
- Individual contractor, resident or worker behaviour; and
- Changes to local laws and policies.

**Significance Criteria**

13.49 There are currently no fixed or recommended criteria for assessing the significance of effects arising from the management of waste. Therefore, the development proposal is evaluated according to its individual characteristics and how it interacts with the surrounding environment. Overall the fundamental proposal for evaluating effects from waste is to predict and characterise waste types and arisings and view them against existing waste generation baseline conditions in the Derbyshire area. This assessment is then used to identify opportunities to respond to policy through means that reduce any adverse effects and increase the likelihood of beneficial effects.

**Magnitude of effects**

13.50 The quantity of waste produced by the development proposal alone will not determine significance. As part of the assessment of effect significance, the type of waste generated and the way it will be managed is assessed to determine the magnitude of effect on the identified receptors. Refer to Table 13.1.
### Table 13.1 Magnitude of Effects

<table>
<thead>
<tr>
<th>Magnitude of Effects</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Significant change in the amount of waste generated (increase of 50 percent of existing level) and cannot be managed in the local Derbyshire area and requires transport to other areas outside the county.</td>
</tr>
<tr>
<td>Medium</td>
<td>Moderate change in the amount of waste generated (increase of 25 percent of existing levels) and cannot be managed in the Derbyshire area and requires transport to other areas outside the county.</td>
</tr>
<tr>
<td>Low</td>
<td>Minor change in the amount of waste generated (increase of 5 percent of existing levels) and cannot be managed in the Derbyshire area and requires transport to other areas outside the county.</td>
</tr>
<tr>
<td>Negligible</td>
<td>No noticeable change in the amount of waste generated; and/or waste does not require to be transported outside the Derbyshire area.</td>
</tr>
</tbody>
</table>

### Receptor Sensitivity

The significance of waste effects will be determined by the type, location and capacity of local and regional waste management facilities and their ability to manage wastes in a suitably sustainable and proficient manner. A qualitative assessment of receptor (waste management infrastructure) sensitivity will be used as described in Table 13.2 below.

### Table 13.2 Criteria for Assessing Effect Sensitivity

<table>
<thead>
<tr>
<th>Sensitivity</th>
<th>Criteria</th>
</tr>
</thead>
</table>

Significance Evaluation

The assessment of magnitude of change and receptor sensitivity is used qualitatively to assess the significance of wastes from the construction and post-construction phases of the proposed development, as shown in Table 13.3. Effects can be either adverse or beneficial.

Table 13.3 Assessment Criteria for Effect Significance

<table>
<thead>
<tr>
<th>Receptor sensitivity</th>
<th>Magnitude Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td>High</td>
<td>Substantial</td>
</tr>
<tr>
<td>Medium</td>
<td>Substantial</td>
</tr>
<tr>
<td>Low</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
BASELINE CONDITIONS

13.53 The definition of a baseline with regard to waste management is set in relation to the latest estimated waste generation amounts in Derbyshire. In addition to the waste generated, a summary of the current infrastructure and its lifespan is also provided.

Current Baseline

13.54 This section outlines the current waste management practices within the region. Information on Municipal Solid Waste, Construction and Demolition waste (C&D) and Commercial & Industrial (C&I) waste treatment has been outlined for Derbyshire together with information characterising the waste treatment infrastructure within the region and its capacity. A 27 year contract for the management of wastes in Derbyshire was awarded to Resource Recovery Solutions (RRS, a joint venture between Shanks Waste Management and Interserve) which commenced 1st April 2010.

Municipal Solid Waste

13.55 Municipal Solid Waste (MSW) is mostly that collected from households, but also includes wastes generated from some commercial and retail premises and waste from schools as well as some other public institutions eg. civic buildings, parks and gardens, etc. Approximately 531,773 tonnes of municipal solid waste was generated in Derbyshire during 2007/8 and of this total 206,662 tonnes was recycled, composted, recovered or incinerated accounting for almost 40% of waste collected.

13.56 There are two significant licensed landfill sites in Derbyshire that can accept non-hazardous wastes ie. MSW, C&D and C&I wastes. Table 13.4 below sets out their estimated remaining capacity as of March 2009.

Table 13.4 Non-Hazardous Waste Landfill Sites

<table>
<thead>
<tr>
<th>Landfill Site</th>
<th>Estimated permitted capacity for the disposal of non-hazardous waste on 31st March 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arden Quarry, Birch Vale</td>
<td>2,400,000 tonnes</td>
</tr>
<tr>
<td>Erin Void, Duckmanton</td>
<td>5,150,000 tonnes</td>
</tr>
</tbody>
</table>

3 East Midlands Regional Assembly, East Midlands Regional Plan, EMRA (March 2009)
13.57 The estimated capacities for Arden Quarry and Erin Void have been provided by the operators of the two sites and allowances made to take account of void space required for engineering works (e.g. cap and daily cover).

Construction and Demolition Waste Arisings

13.58 C&D waste comprises, in varying degrees, quantities of building materials, asphalt, demolition materials, topsoil and subsoil and arisings from building schemes and demolition sites. Survey information from the Department for Communities and Local Government\(^4\) estimated that, in 2004/5, construction and demolition waste arisings in Derbyshire were 2,761,694 tonnes albeit this regional data was considered less robust than national figures due largely to lower response rates. Notwithstanding, it was further estimated that 2,128,494 tonnes per annum was recycled as aggregates and soils, 203,851 tonnes per annum used for landfill restoration and engineering 45,921 tonnes per annum recovered/spread on Paragraph 19\(^5\) and Paragraph 9\(^6\) exempt sites with 383,429 tonnes per annum disposed to inert landfill.

13.59 Due to the presence of extensive sand and gravel quarries within the Trent Valley there are quantities of void space which are considerably larger than the amount of inert material available locally to be deposited within them. In addition, some inert waste would also be required for engineering purposes at current non-hazardous landfill sites and at construction sites. A continuation of this type of development would also reduce the amount of inert void space required. Thus it is likely that the demand for new landfill space required for C&D waste in the future will be met within the Derbyshire area.

Commercial and Industrial Waste Arisings

13.60 C&I waste includes arisings from industrial premises and businesses. The Environment Agency’s Strategic Waste Management Information states that in 2002/03, Derbyshire’s combined commercial and industrial waste arisings totalled 1,522,400 tonnes of which 464,400 tonnes were generated from commercial activities with industrial waste arisings accounting for some 1,058,000 tonnes.

\(^4\) Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005 Construction, Demolition and Excavation Waste

\(^5\) Environmental Permitting Regulations (England and Wales) 2007

\(^6\) Waste Management Licensing Regulations 1994
13.61 Recyclable C&I waste streams are treated at Materials Recycling Facilities (MRFs) where recyclable waste such as cans, plastic bottles, paper, aluminium, cardboard, textiles and glass are segregated into individual waste streams before being baled and sent to re-processors where they are used to make new material.

**POTENTIAL EFFECTS**

13.62 This section will examine the potential effects that the development will have on the surrounding waste infrastructure, both as a result of solid waste produced during construction and once it is fully operational. Mitigation measures will also be identified.

**A) Construction Phase**

13.63 The range of wastes associated with ground preparation (clearance and levelling) includes materials such as rubble from buildings, vegetation, sand and low amounts of soft strip materials from the demolition of on-site buildings. During construction a further range of wastes are likely to be generated. These will be outlined in the sections below. A Site Waste Management Plan (SWMP) will be prepared for the project.

**Excavated Material**

13.64 Where possible, excavated material will be reused onsite. Table 13.5 below shows the current estimations regarding the volume of materials that will be excavated and the volume of material that will be used for landscaping during each phase of the development. By reusing the material on site, the number of HGV movements required to transfer the material to another receiving site (which has an Environmental Permit or a registered exemption) e.g. transfer station / landfill site, will be reduced, whilst also reducing the volume of waste sent to landfill.

13.65 The definition of waste and re-use of materials can be complex, CL:AIRE (Contaminated Land Applications in Real Environments) have produced a code of practice (CoP) that can be followed when reusing excavated material/soils on the site if production and as a direct transfer between sites.

13.66 There are savings / benefits to be made by utilising the CoP including time and cost as it reduces the offsite costs associated with the importation of soil offsite, disposal costs and reusing material on site. There are no pre-determined limits as to the amounts of material that can be reused (other than you can only use what is required on site), as opposed to
permits and exemptions which have strict limits with regards to the quantities than can be reused. The CoP assists in the re-use of soils and now also covers:

- Ground based infrastructure that is capable of reuse within earthworks projects e.g. road base, concrete floors;
- Source segregated aggregate material arising from demolition activities, such as crushed brick and concrete, to be reused on the site of production within earthworks projects or as sub-base or drainage materials; and
- Stockpiled excavated materials that include the above.

13.67 It is envisaged that the Stanton project will take advantage of the CoP in terms of development. The CoP offers opportunities to ensure materials that may otherwise be defined as waste to be used on sites as a product, negating the need for the application of environmental permit exemptions. This is of particular relevance in the case of the re-use of waste in construction under U1 Exemptions, where there are limits of 1,000t of soils that can be used. Sites which require more than 1,000t of soil (if considered a waste) would therefore struggle to do so under the current regulatory regime, noting the only other option would be to use a full environmental permit. These have lengthy timescales attached to their application process, additional costs, and have the potential to attract blight to land values, and also considered RED Conditions with the NHBC where any housing warranties are sought by the developer – and as such would require detailed discussions with the warranty provider and regulator to successfully surrender the permit. Utilising the CoP in this manner will help to assure the highest sustainability credentials for the project through detailed review of materials to be produced and their re-use on site as opposed to disposal off site and importation of materials.

Table 13.5 Materials Balance Calculations per Phase

<table>
<thead>
<tr>
<th>Phase</th>
<th>Cut (m³)</th>
<th>Fill (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1  Residential and Existing, Neighbourhood Centre and School</td>
<td>39,127</td>
<td>66,412</td>
</tr>
<tr>
<td>R2  Residential (Central)</td>
<td>55,805</td>
<td>26,350</td>
</tr>
<tr>
<td>R3 Residential (South east)</td>
<td>54,089</td>
<td>47,974</td>
</tr>
<tr>
<td>R4  Residential (South west)</td>
<td>4,696</td>
<td>1,126</td>
</tr>
<tr>
<td>R5  Residential (South )</td>
<td>8,882</td>
<td>32,108</td>
</tr>
</tbody>
</table>
Estimated HGV movements

Current estimations suggest that 503,276 m$^3$ of material will be excavated, of which 409,019 m$^3$ will be used onsite, leaving a surplus of 94,257 m$^3$, which will need to be transferred offsite. Based on these figures and the assumption that 14 m$^3$ wagons (long wheel base ‘8-wheeler’) will be used to transport the waste, it is estimated that an average of 15 HGV movements will take place per week over the 15 year period of the development. It is recognised, however, that there are likely to be peaks of activity where more HGV movements occur e.g. during initial earthworks or foundation exercises and it estimated that during these peak periods that around 10-12 HGV movements per day relating to the movement of waste materials may arise.

In order to keep HGV movements to a minimum and avoid disturbance the options outlined in Table 13.6, should be considered.

Table 13.6 Options to Minimise Disturbance Caused by HGV Movements

<table>
<thead>
<tr>
<th>Potential options to consider</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just in time collections</td>
<td>Ensuring that wagons only remove full loads will reduce the number of movements required</td>
</tr>
<tr>
<td>Standardised routing</td>
<td>Ensure that wagons utilise main roads as much as possible and avoid routes past schools or residential areas wherever possible</td>
</tr>
<tr>
<td>Peak time avoidance</td>
<td>Avoiding peak traffic times to reduce local congestion</td>
</tr>
</tbody>
</table>
Construction and Demolition Waste

13.70 The project will exceed the Site Waste Management Plan (SWMP) Regulations 2008 upper tier threshold of £500,000, and as such a detailed SWMP will be required.

13.71 The SWMP will include:

- The types of wastes removed from the site and their estimated volumes;
- Incorporate waste hierarchy principles and aim to eliminate and reduce waste wherever possible through the scheme design, method of construction or materials used;
- The identity of organisation(s) that remove waste from site and their waste carrier registration number(s);
- The site that any waste is to be taken to and their respective environmental permit or exemption details;
- A copy of, or reference to, a written description of the waste and European Waste Catalogue (EWC) coding; and
- Measure waste output / waste handled and report on any targets set for the project.

13.72 These plans are designed to encourage better waste management practices, improve environmental performance, reduce the cost of waste disposal and reduce waste crime such as fly tipping. The principal contractor for the development (as yet unassigned) will be required to implement the plan, review on a regular basis (and no less than every 6 months), and record reasons for any differences between the original plan and what actually happened within three months of the end of the project.

13.73 Table 13.7 below shows some of the options, which should be considered when developing the SWMP, in order to reduce the amount of waste generated by the development.

**Table 13.7 Waste Minimisation Options**

<table>
<thead>
<tr>
<th>Potential options to consider</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designing out waste</td>
<td>Considering waste in the design phase can make as significant reduction in waste generation</td>
</tr>
</tbody>
</table>
Construction methods | Many new construction techniques both on and off site (e.g. modular construction) can have significant positive impacts on reducing waste generated on site.
---|---
Just in time ordering | Prevents over ordering, reduced the possibility of materials being damaged during storage.
Dry Storage | Prevents damage caused by weathering.
Lockable storage / security | Prevents waste due to Vandalism.
Waste segregation | Prevent cross contamination / enable recycling etc.
Re-use on site | Reduces volume of material being sent off site or imported to site.
Use of recycled materials | Reduces the amount of primary product used on site.
Use of reclaimed materials | Reduces the amount of waste been sent off site.
Keeping an inventory of used and ordered materials | Helps to ensure that no double ordering is carried out.

13.74 The project team will be required to ensure the principles of the waste hierarchy (eliminate, reduce, reuse, recycle, disposal) have been applied to all wastes generated on site, to enable best practice on site and to improve the overall sustainability of the project.

13.75 During the construction phase, general site waste will be stored in skips on site and emptied periodically as and when necessary. This will include mixed construction and demolition wastes not suitable for re-use on site and also some Municipal Solid Waste (MSW). If not stored securely this waste may lead to potential litter and / or odour issues. It is not possible or practical to quantify the expected general site waste arising from the development site as the volumes generated will be dependent on the contractor’s operating practices and the size of the workforce involved. It is anticipated that the waste will be taken either to a construction and demolition waste-recycling site.

13.76 The storage, handling and transportation of general site waste are expected to have environmental effects of negligible significance due to the implementation of a SWMP at the site and it's continual improvement processes.

**Predicted Construction and Demolition Waste Arisings**
13.77 A demolition strategy for the existing site and an estimate of the amount of demolition waste likely to be generated has not yet been formulated. Before any demolition work is undertaken, a pre-demolition waste audit will be carried out to identify any material that can be reused onsite, and will be in line with the latest guidance (e.g. WRAP / ICE demolition protocol). Once established, this information will be used as input to the SWMP being prepared for the project.

13.78 A Type 2 asbestos survey has been undertaken which identified asbestos-containing material (ACMs) at the site, including asbestos coating to external cladding of some buildings. A refurbishment / demolition asbestos survey will be undertaken prior to any demolition or refurbishment. Any ACMs identified will be removed and disposed of by a suitably licensed contractor and in accordance with current regulations (e.g. Hazardous Waste regulations 2005 (as amended)).

13.79 There are currently no formally recognised standard methodologies for estimating the quantities of construction waste under the SWMP regulations, however for the purpose of this assessment, data from the ‘Building Research Establishment (BRE) - Waste Benchmark Data by Project Type’ (August 2010) report has been used (shown in Table 13.8 below). This report provides useful up to date guidance on expected compositions and generation rates for waste materials during the construction phase of residential, commercial (offices and retail) and educational developments such as Stanton.

### Table 13.8 Waste Benchmark Data for by Project Type (2010)

<table>
<thead>
<tr>
<th></th>
<th>Number of projects involved in study</th>
<th>Average tonnes of waste per 100m² gross internal floor area</th>
<th>Number of projects involved in study</th>
<th>Average tonnes of waste per £100k project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>337</td>
<td>17.3</td>
<td>330</td>
<td>12.8</td>
</tr>
<tr>
<td>Commercial Office</td>
<td>53</td>
<td>19.9</td>
<td>53</td>
<td>9.6</td>
</tr>
<tr>
<td>Commercial Retail</td>
<td>81</td>
<td>20.8</td>
<td>87</td>
<td>17.3</td>
</tr>
<tr>
<td>Education</td>
<td>162</td>
<td>21.3</td>
<td>162</td>
<td>10.5</td>
</tr>
</tbody>
</table>

13.80 The outline project plan is to build 1,950 residential units, with an area of up to 20,000 m² designated for B1 employment use and a further 50,000 m² for B2 and B8 employment.
primary school and a 150 bed accommodation residential care facility will also be constructed as part of the scheme. Table 13.9 below shows the planned residential housing mix, and total gross internal floor area of the units planned for this development.

**Table 13.9 Current Housing Mix**

<table>
<thead>
<tr>
<th>Type</th>
<th>Gross Internal Area m²</th>
<th>Total Number</th>
<th>Total Area m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bed Apartment</td>
<td>41.81</td>
<td>93</td>
<td>38.88</td>
</tr>
<tr>
<td>2 Bed Apartment</td>
<td>60.39</td>
<td>185</td>
<td>111.72</td>
</tr>
<tr>
<td>2 Bed House</td>
<td>59.46</td>
<td>278</td>
<td>165.30</td>
</tr>
<tr>
<td>3 Bed House</td>
<td>82.96</td>
<td>278</td>
<td>230.63</td>
</tr>
<tr>
<td>3 Bed House 2.5 storey</td>
<td>111.2</td>
<td>185</td>
<td>205.72</td>
</tr>
<tr>
<td>4 Bed House 2.5 storey</td>
<td>111.2</td>
<td>315</td>
<td>350.28</td>
</tr>
<tr>
<td>5 Bed House</td>
<td>184.23</td>
<td>185</td>
<td>340.83</td>
</tr>
<tr>
<td>1 bed apartment</td>
<td>40.97</td>
<td>10</td>
<td>4.10</td>
</tr>
<tr>
<td>2 bed apartment</td>
<td>56.02</td>
<td>15</td>
<td>8.40</td>
</tr>
<tr>
<td>2 bed apartment</td>
<td>65.96</td>
<td>13</td>
<td>8.58</td>
</tr>
<tr>
<td>2 bed house</td>
<td>74.69</td>
<td>24</td>
<td>17.96</td>
</tr>
<tr>
<td>2 bed house</td>
<td>74.69</td>
<td>7</td>
<td>5.23</td>
</tr>
<tr>
<td>3 bed house</td>
<td>84.36</td>
<td>14</td>
<td>11.81</td>
</tr>
<tr>
<td>3 bed house</td>
<td>84.36</td>
<td>10</td>
<td>8.44</td>
</tr>
<tr>
<td>4 bed house</td>
<td>103.21</td>
<td>5</td>
<td>5.16</td>
</tr>
</tbody>
</table>

Total (100m²) 1512.99

13.81 This information has been used to estimate the potential waste arising from the project using the benchmark data above.

13.82 Assuming the current plans remain the same, and based on the BRE benchmark figure of 17.3 tonnes of waste being generated per 100m² gross internal floor area, for residential buildings, it is estimated that (1513.0 x 17.3) 26,174.9 tonnes of waste would be generated, from the residential aspect of the development.
13.83 With regards to commercial space, the estimated quantities of waste likely to be generated from construction are (19.9 x 200) 3,980.0 tonnes from B1 development and (20.8 x 500) 10,400.0 tonnes from B2 and B8 development giving a total of 14,380.0 tonnes of construction waste from this element of the project.

13.84 It is planned that the primary school will comprise of two forms per year and is estimated to have a floor space of 1.85 Ha with an indicative gross internal floor area of 1,500-2,000 m². The care facility is understood to comprise of an area of 1.43 Ha and has been assumed to have an estimated 14,000 m².

13.85 A total of 40,554.9 tonnes of construction waste will be generated from the construction phase of the project. A detailed demolition plan has yet to be prepared and therefore an estimation of the quantities of demolition waste generated by the project is difficult to estimate requiring an understanding of the building materials employed, dimensions and internal configurations. It is understood that the majority of the industrial buildings currently on site will be demolished.

13.86 This waste that would be generated if standard methods relating to construction are followed. This figure is used in this assessment to represent the unmitigated scheme (i.e. a scheme that uses conventional construction methods and waste management only). C&D waste contains significant quantities of re-usable and recyclable materials that can be segregated and it is possible that recycling rates of at least 80% can be achieved and as such the demand on local disposal sites will be significantly reduced.

13.87 The construction phase will be spread over a 15 year period. The disposal of construction waste has the potential to have a moderate effect due to the limited future capacity at local landfills, the increased traffic movements and the consumption of raw virgin materials.

13.88 In addition to the effects on receptors (as described in Table 13.10 below), the increased vehicle movements associated with moving the C&D materials will create noise, transport and air effects. These effects and any mitigation measures are discussed in further detail in Chapter 9 Air and Noise and Chapter 10 Transport.
### Table 13.10 Potential Effects on Receptors from Construction and Demolition Waste

<table>
<thead>
<tr>
<th>Receptor</th>
<th>Receptor sensitivity</th>
<th>Effect</th>
<th>Magnitude</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derbyshire C&amp;D waste management infrastructure capabilities and capacity (eg. transfer stations, materials recovery facilities (MRFs) skips and refuse collection vehicles)</td>
<td>High</td>
<td>Disposal of large volumes of C&amp;D waste reducing the ability of existing infrastructure to deal with region’s current waste load.</td>
<td>Low</td>
<td>Moderate (adverse)</td>
</tr>
<tr>
<td>Midlands regional C&amp;D waste management infrastructure capabilities and capacity</td>
<td>Medium</td>
<td>Disposal of large volumes of C&amp;D waste reducing the ability of existing infrastructure to deal with region’s current waste load.</td>
<td>Negligible</td>
<td>Low (adverse)</td>
</tr>
<tr>
<td>National C&amp;D waste management infrastructure capabilities and</td>
<td>Low</td>
<td>Disposal of specific C&amp;D waste materials. Materials will have to travel</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
</tbody>
</table>
### Post Completion

13.89 This section details the estimated waste arising from the completed site which as stated previously will consist of residential units, B1, B2 and B8 commercial spaces, primary school and the residential care facility. Wastes generated during this operational phase will be categorised as MSW and Non-MSW. For the purposes of assessment, MSW is assumed to be generated only from the residential components of the development, whilst Non-MSW associated with B1, B2, and B8 commercial premises (retail, business etc.), from the school and the care facility.

### Municipal Solid Wastes

13.90 As detailed above, the proposed development comprises 1,950 residential units. MSW generated by these units is calculated using data submitted to the WasteDataFlow (www.wastedataflow.co.uk) by local councils. The WasteDataFlow has replaced the previous Defra Municipal Waste Management Survey in England and similar surveys in Wales, Northern Ireland and Scotland.

13.91 The WasteDataFlow is a web-based system for quarterly reporting on municipal waste data by local authorities to central government. It is also used by the Environment Agency for monitoring biodegradable waste sent to landfill under the Landfill Allowance Trading Scheme.

### Composition of waste

13.92 The estimated composition of waste is derived from the 2011 Waste Data Overview which was produced by DEFRA (see Figure 13.2). The percentages outlined in the report for paper and cardboard, food, garden waste etc. was applied to the estimated total volume of waste to determine the approximate volume of each type of waste.
On the basis of the information gathered from the WasteDataFlow, the average volume of waste produce per household in the UK is 1072kg, in Derbyshire 1053.65kg and in Erewash 898.73kg per household per year respectively. Table 13.11, below shows the estimated total household that could be anticipated from the completed development.

**Table 13.11 Estimated Quantities of MSW for Stanton Project**

<table>
<thead>
<tr>
<th>Area</th>
<th>Volume of MSW per household per annum (kg)</th>
<th>Number of units</th>
<th>Estimated total waste per annum (tonnes)</th>
<th>Total volume of MSW currently collected (tonnes)</th>
<th>Percentage increase in waste (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>1,072</td>
<td>1,950</td>
<td>2,090.4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Derbyshire</td>
<td>1,053.65</td>
<td>1,950</td>
<td>2,054.6</td>
<td>361,209.33</td>
<td>0.57</td>
</tr>
<tr>
<td>Erewash</td>
<td>898.73</td>
<td>1,950</td>
<td>1,752.52</td>
<td>44,819.81</td>
<td>3.91</td>
</tr>
</tbody>
</table>

**Estimated volume of waste by composition**

Using the total waste per annum estimations above the three areas and the composition of municipal waste percentages detailed in Section 13.90, Table 13.12 below indicates that a considerable proportion of MSW is recyclable. Providing suitable facilities and support is
offered to residents, it is possible that high levels of recycling can be achieved through source segregation of wastes.

Table 13.12 Estimated Composition of Waste Generated by Stanton Project

<table>
<thead>
<tr>
<th>Type of waste</th>
<th>%</th>
<th>Volume based on UK estimations (2090.4 tonnes)</th>
<th>Volume based on Derbyshire estimations (2054.6 tonnes)</th>
<th>Volume based on Erewash estimations (1752.52 tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper and card</td>
<td>23%</td>
<td>480.79</td>
<td>472.56</td>
<td>403.08</td>
</tr>
<tr>
<td>Food</td>
<td>18%</td>
<td>376.27</td>
<td>369.83</td>
<td>315.45</td>
</tr>
<tr>
<td>Garden &amp; other Organic Waste</td>
<td>16%</td>
<td>334.46</td>
<td>328.74</td>
<td>280.4</td>
</tr>
<tr>
<td>Plastics</td>
<td>10%</td>
<td>209.04</td>
<td>205.46</td>
<td>175.53</td>
</tr>
<tr>
<td>Glass</td>
<td>6%</td>
<td>125.42</td>
<td>123.28</td>
<td>105.15</td>
</tr>
<tr>
<td>Metals</td>
<td>4%</td>
<td>83.62</td>
<td>82.18</td>
<td>70.1</td>
</tr>
<tr>
<td>Wood</td>
<td>4%</td>
<td>83.62</td>
<td>82.18</td>
<td>70.1</td>
</tr>
<tr>
<td>Textiles</td>
<td>3%</td>
<td>62.7</td>
<td>61.64</td>
<td>52.58</td>
</tr>
<tr>
<td>WEEE</td>
<td>2%</td>
<td>41.81</td>
<td>41.09</td>
<td>35.05</td>
</tr>
<tr>
<td>Other (includes: Hazardous, sanitary, furniture, mattresses, misc, soil and other wastes)</td>
<td>14%</td>
<td>290.66</td>
<td>287.64</td>
<td>245.35</td>
</tr>
</tbody>
</table>

Waste arising from primary school

WRAP commissioned a research study with the intent to provide results that would be appropriate to provide generalised advice on planning collection and recycling services. The study weighed waste that was collected from a ‘representative’ sample of schools across four different local authorities (the four authorities represented both rural and urban areas).
13.96 Six schools where selected from each of the four local authorities (one small primary and secondary school, one medium sized primary and secondary school and one large primary and secondary school).

13.97 The results showed that on average, the quantity of waste produced by each primary school pupil in a school year (assumed to be 30 weeks) was 45kg, this is the figure used in this report to estimate both the amount of waste produced by the primary school and the nursery since all the pupils will be attending the same facility.

13.98 Assuming that the school is attended by the expected 480 pupils, the waste generated would be 21.6 tonnes per annum.

**Composition of School Wastes**

13.99 The Big Red Bin paper entitled “The nature and scale of waste produced by schools in England” provides an average composition of wastes arising from primary school. Using the figures from this report and assumed total waste generated figure from section 0 above (21.6 tonnes) the estimated waste composition for the primary school is detailed in Table 13.13 below indicating high proportions of the waste stream that can be recycled.

<table>
<thead>
<tr>
<th>Type of waste</th>
<th>%</th>
<th>Estimated weight (based on the annual figure of 21.6 tonnes) (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper and card</td>
<td>59</td>
<td>12.74</td>
</tr>
<tr>
<td>Food and green waste</td>
<td>13</td>
<td>2.8</td>
</tr>
<tr>
<td>Plastics</td>
<td>12</td>
<td>2.6</td>
</tr>
<tr>
<td>Glass</td>
<td>3</td>
<td>0.65</td>
</tr>
<tr>
<td>Metal</td>
<td>3</td>
<td>0.65</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>2.16</td>
</tr>
</tbody>
</table>
Waste arising from Residential Care Facility

13.100 Limited data exists with respect to wastes generated by residential care facilities however a detailed study was undertaken by Zero Waste Scotland\(^7\) which estimated the quantities of waste generated by various sectors including Health and Social Work which was further subdivided into Human health (hospitals, medical and dental and other human health), residential care (nursing care, learning disabilities, mental health and substance, elderly/disabled and other residential) and Social Work (elder/disabled and other social work).

13.101 No detailed information with regard to the exact composition of waste generated by the residential care sub-sector was provided however for the health care sector as a whole the report provided an overall compositional analysis for the facilities considered as part of the study group. The principal waste streams generated were paper (30.3%), food (20.6%), plastic film (10.9%) dense plastic (8.8%), card (7.8%) and textiles (4.3%) large proportions of which can be recycled.

13.102 The study identified waste quantities for different sizes of residential care facility dependent on the number of employees placing these in bands. It is assumed that the residential care facility will employ between 10-49 employees indicating that the quantity of waste generated annually will be 6,650 tonnes.

Estimated Waste Arisings from Commercial Spaces

13.103 Post-construction or operational waste effects are assessed on the predictions of quantities and composition of waste arisings and the ability for future waste to be dealt with in a manner that, as a minimum, meets fundamental health and environmental criteria.

13.104 Estimating operational waste is a difficult task. Operations differ according to the site users and their behaviour, and benchmark data can only provide a broad indication of arisings. The specific types of business that will operate within the planned commercial space are as yet unknown, however the development is likely to consist of offices (B1), B2 and B8 commercial space.

13.105 Table 13.13 below (‘Planning for Resource Sustainable Communities. A Code of Practice’, ICE and Forward Scotland 2005) provides an indication of wastes from these types of facilities and attempts

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\(^7\) The Composition of Mixed Waste from Scottish Health and Social Care, Education, Motor, Wholesale and Retail Sectors in 201, Zero Waste Scotland, May 2012
Table 13.13 Waste Generation Rates – Commercial Waste

<table>
<thead>
<tr>
<th>Type of premises</th>
<th>Typical Waste Generation Rates</th>
<th>Typical Recyclables Generation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office Buildings / General commercial building</td>
<td>0.01 to 0.03 m³/100m² gross floor area/day</td>
<td>Waste paper generated 0.005m³/100m²/day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Glass and plastic 0.001 to 0.003m³/100m²/bar/day</td>
</tr>
</tbody>
</table>

13.106 Using the data above, a combined area of 70,000 m² for all commercial land use (B1, B2 and B8) and conservatively assuming continual activity throughout the year, the estimated volume of commercial waste ranges between 2,555 m³ annum and 7,665 m³ per annum. Using a conversion factor of 0.2 tonnes per m³ for non-compacted C&I waste (HM Revenue and Customs, May 2004), this equates to 511 tonnes per annum and 1,533 tonnes per annum respectively. It is recognised that some units will be occasionally occupied, but this assessment has assumed that the units will be fully occupied throughout the year.

13.107 This estimated annual waste generation represents between 0.03% and 0.1% increase of C&I waste which is currently produced in Derbyshire and is considered to only be a marginal rise.

13.108 The estimated quantities of waste produced during the operational phase of the project is summarised in the Table 13.14 below.

Table 13.14 Potential Effect on Receptors from Operational Waste

<table>
<thead>
<tr>
<th>Land use</th>
<th>Units /m²</th>
<th>Tonnes produced per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>1950 units</td>
<td>1,752.5</td>
</tr>
<tr>
<td>Primary School (480 pupils)</td>
<td>1500 – 2000 m²</td>
<td>21.6</td>
</tr>
<tr>
<td>Residential Care Facility (150 beds)</td>
<td>14,000 m²</td>
<td>6,650</td>
</tr>
<tr>
<td>Commercial</td>
<td>70,000 m²</td>
<td>511 -1,533</td>
</tr>
</tbody>
</table>
13.109 The composition of waste is likely to differ slightly between land uses, however it is thought that organic waste will make up a large proportion mainly due to residential uses. Cardboard and paper mainly originating from the B1, B2 and B8 commercial uses are also likely to be prevalent. A large proportion of waste is expected to be recyclable.

13.110 The potential effect on receptors composition generated as a consequence of waste produced during the operational phase of the project is described in Table 13.15 below.

**Table 13.15 Potential Effect on Receptors from Operational Waste**

<table>
<thead>
<tr>
<th>Receptor</th>
<th>Receptor sensitivity</th>
<th>Effect</th>
<th>Magnitude</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derbyshire C&amp;I waste management infrastructure capabilities and capacity (eg. transfer stations, materials recovery facilities (MRFs) skips and refuse collection vehicles)</td>
<td>High</td>
<td>Disposal of marginal volumes of MSW and C&amp;I reducing the ability of existing infrastructure to deal with region’s current waste load.</td>
<td>Low</td>
<td>Moderate (adverse)</td>
</tr>
<tr>
<td>Midlands regional C&amp;I waste management</td>
<td>Medium</td>
<td>Disposal of marginal volumes of MSW and C&amp;I</td>
<td>Negligible</td>
<td>Low (adverse)</td>
</tr>
</tbody>
</table>
Mitigation Measures

13.111 This section identifies mitigation measures to reduce the effects of waste throughout the life of the development.

During construction

13.112 Waste management strategies throughout the demolition and construction phases of the proposed development will be considered at a number of stages, including:

1. Design/planning stage;
2. Construction tender phase; and
3. Construction phase.
13.113 A SWMP for the Stanton development will be drafted, and this section presents its core features to date. A SWMP is an ongoing, live document, which will be updated throughout the design and construction of the project. As such, the measures described below may change, depending on which are chosen by the design team and principal contractor.

13.114 Currently, the SWMP has identified a number of areas where waste can be minimised at source and through design. The full list of actions will be identified within the SWMP which will include:

1. The potential to reuse as much demolition and excavation waste as possible. Suitable material will be crushed onsite and reused;
2. Where possible, prefabricated components will be used to reduce off-cut waste onsite and increase efficiency during installation; and
3. Where relevant look to repeat building form to minimise off-cut waste excess waste generation onsite.

13.115 Once on site, the plan will be managed and implemented by an appointed site waste management officer. This officer will be responsible for implementing strategic recommendations into the current SWMP. The recommendations are outlined in Section 7 of the SWMP.

13.116 In addition to reducing waste through the deployment of sustainable design measures, the SWMP will also ensure that, once onsite, good practice recovery rates are achieved.

13.117 Specific obligations for construction waste and the requirements of the SWMP will form part of a Construction Environmental Management Plan (CEMP). The Principal Contractor will be required to produce and agree the CEMP prior to the construction commencing. The CEMP will describe how construction will be managed to avoid, minimise and mitigate any construction effects on the environment, existing surrounding communities and residents. It will be produced in accordance with the recommendations of PPG6, which has been prepared by the Environment Agency and is entitled Pollution Prevention Guidelines.

13.118 The CEMP will provide the management framework needed for the planning and implementation of construction activities in accordance with environmental commitments identified within the Environmental Statement. Any requirements of planning conditions or Section 106 legal agreements will also be taken into account.
A detailed CEMP will be produced as part of the detailed submission on reserved matters for the development phase. An Outline CEMP is available in the Construction Methodology section of this ES. This describes how the detailed CEMP will work, how it will be produced, how statutory authorities and other interested groups will be able to interact with the process and how the control of construction aspects will be achieved.

**Post Construction**

As can be seen from the expected waste composition for Stanton, as illustrated in Table 13.12, over 50% of the waste produced is expected to be recyclable. In order to meet the high aspirations of sustainability as set out by the client, the encouragement and facilitation of segregation methods are crucial to limiting the effect of operational waste and meeting regional and local policy. The proposed development will therefore seek to move waste up the waste hierarchy with the main focus of the post development waste management strategy to recycle, compost and recover energy although it is acknowledged that preventing and minimising waste will be influenced by the decisions made by the future occupants of the site.

**Municipal Solid Wastes**

All houses will be designed to have internal storage capacity for waste receptacles enabling waste segregation to take place at source and reflecting local Derbyshire and Erewash council’s policies on recycling. All buildings will include a location to keep large volumes of material in-between collections, suitable containers should also be provided. In order to reduce odour and other potential nuisance, these areas should be located external to the main property – either within private grounds or communal areas.

The benefit of integrating internal waste areas from the outset of the development means that these ‘bins’ can be incorporated into the design of cabinets and fittings in the kitchen and other appropriate areas, which leads to a more efficient use of space, and is likely to prove less obtrusive than leaving householders to acquire a free standing bin (Code for sustainable homes – A step-change in sustainable home building practices. DCLG 2006). Where possible flats will include internal waste storage areas as detailed above, however due to space restrictions alternative arrangements may be required (i.e. less internal segregation areas). It is proposed that the following waste streams will be segregated at source:

1. Food waste;
PART TWO
WASTE

2. Glass;

3. Dry recyclables (including paper, card, aluminium cans, and plastics); and

4. Residual waste (non-recyclable/contaminated).

13.123 Signage and notice boards information will be provided to ensure that all visitors to the Stanton development are aware of the recycling opportunities available to them. Bins will be colour coded and clearly labelled to ensure that contamination is kept to a minimum.

13.124 All buildings will be provided with sufficient circulation space to enable waste receptacles to be transported from storage areas to collection locations for removal by the waste service providers. Shared refuse stores for high occupancy residential units such as flats will be sited at a distance that is accessible to both residents and waste collection workers. The size of refuse stores will be calculated based on full occupancy, to ensure that residents will always have space to dispose of their waste.

13.125 In line with the 1999 Derbyshire waste strategy the proposed development will look to provide three bring sites, at a ratio of 1 per 650 household. These will be evenly distributed across the site to ensure that there are easily accessible form main transport routes (to reduce traffic), yet far enough away from residential housing in order to avoid any potential nuisance issues. Ideally these sites will be located close to commercial areas, which are well lit and monitored by in house security. The precise locations of these bring sites are yet to be determined.

13.126 Development plans include an area of land which could be used for an energy centre (energy from waste) however this is not part of the initial development. The area designated for this facility is being considered for use in the short term as a household waste recycling centre, which can be used by the future occupants of the site and other local residents. This is in line with the Waste Strategy 2006 states that Derby and Derbyshire will need to provide more household waste recycling centres and these centres should be situated in places, which people visit for other purposes.

13.127 Recreational areas will also be designed to encourage recycling through the use of segregated bins and waste receptacles.

13.128 In order to encourage composting all houses with a garden will be provided with a household 220 litre compost bin. Whilst consideration will be given to provide a community based composting facility located close to the allotments.
Commercial and Industrial Wastes

13.129 The designated B1, B2 and B8 commercial land-use areas will also concentrate on ensuring that waste can be segregated at source and will also be provided with sufficient bin storage space to make sure that separation can take place.

13.130 In order to ensure that waste from the development is stored hygienically and efficiently, a central refuse store will be provided at within the area reserved for energy provision in the masterplan. Sufficient space will be provided for the following equipment:

1. Energy centre (area reserved for future if required);
2. An in-vessel composter. This will treat all organic waste (food and landscaping waste) from the development, not only reducing waste to landfill but also providing the development with compost which can be used in the landscaping around the site;
3. A cardboard baler. This will target cardboard from the deliveries to the commercial and retail land uses ensuring a high capture rate;
4. Wheelie bins for the storage of glass and dry recyclables; and
5. A compactor for the treatment of compactable waste.

13.131 The provision of an in-vessel composter will ensure that food waste from the site (which makes up almost 50% of all waste produced) is targeted, both in the residential units and from restaurants and bars. All legal requirements with regards to composting food waste will be met, including any additional DEFRA requirements where food waste is to be composted (as per the Animal By-Products Regulations 2005 (as amended)).

Residual Effects

13.132 This section has outlined the effects of waste generation during the site preparation, construction and operation of the Stanton development project. During the construction period, in order to ensure that pressure on local waste infrastructure is minimised and effects reduced, mitigation measures in the form of a SWMP will be employed. The SWMP aims to firstly minimise the amount of waste generated via design measures, and secondly to segregate the high proportions of recyclables in the waste onsite once construction begins. Mitigation measures set out in this chapter are intended to ensure that waste is managed in a sustainable manner that complies with national, regional and local policy. If this is achieved, the proposals should have a reduced effect on receptors.
13.133 With regard to operational waste, opportunities to minimise waste sent to landfill will be maximised by facilitating a system of waste management that aims to ensure a high recycling rate by segregating waste at source, and providing sufficient storage to do so. The Stanton project will embrace recycling and will incorporate a large central refuse store which will provide space for recycling, bulking of cardboard and treatment of food waste.

13.134 Bins which allow segregation will be provided for all residential units, office space and public areas and sufficient space has been provided in all building uses to allow for the store of both recyclable and residual waste streams. The use of an in-vessel composter onsite will not only provide an outlet for organic waste, but will provide a source of compost which can be used for all landscaped space in the development.
14.0 INTERACTIONS AND ALTERNATIVES

INTRODUCTION

14.1 The findings and overall conclusions set out in the ‘Interactions and Alternatives’ Chapter 15 of the original Environmental Statement (November 2012) presented at Appendix A of this ES Addendum have been reviewed and set out below for completeness.

FINDINGS OF ES ADDENDUM REVIEW: UPDATED INTERACTIONS AND ALTERNATIVES CHAPTER

Alternative Sites

14.2 When considering proposals for new development there is a need to consider whether the development can be undertaken on an alternative site. In considering potential alternative sites, a review of national and local planning policy has been undertaken. A review of the any changes in the policies guidance since the submission of the planning application for locating new development is set out below.

14.3 The planning policy position for identifying alternative sites outlined at Paragraphs 14.3 – 14.15 of the original Environment Statement (dated November 2012) in respect of the National Planning Policy Framework (NPPF) has not be subject of any change or update since the submission of the planning application. As such, paragraphs 14.3 – 14.5 of Chapter 14 of the original Environmental Statement presented at Appendix A of this Addendum remain unchanged.

14.4 At a local level, the change in planning policy position has been the adoption of the Erewash Core Strategy in March 2014 which allocates the Site as a ‘Stanton Regeneration Site’ under Policy 20 as a strategic site for the development of a sustainable new neighbourhood.

14.5 As the Site comprises a former ironworks it falls within the definition of previously developed land and its redevelopment support’s the Council’s objective at Policy LP1 (b) to re – use land and buildings where possible in preference to Greenfield land. Policy H1 supports housing development within the urban framework of Ilkeston, Long – Eaton and Sandiacre through the use of neglected, derelict land or premises subject to meeting Policy H12, E2, DC1 and DC9.

14.6 As such, the principle of a mixed use neighbourhood in this location continues to be supported through adopted national and local policies.
Assessment of Alternative Sites

14.7 Since the submission of the planning application to Erewash Borough Council for determination, a review of sites coming forward within the Borough over the past 18 months has been undertaken. This review has confirmed that there are no other strategic sites proposed to be delivered within Erewash Borough which would be capable of accommodating the proposed development.

14.8 The findings of the Tribal Urban Studio (June 2008) report contained at Paragraphs 14.6 – 14.28 of the original Environmental Statement presented at Appendix A of this ES Addendum have not been the subject of any update and also remain valid.

The ‘Do Nothing’ Alternative

14.9 The ‘Do Nothing’ Alternative assessment is not the subject of any amendment or update in light of the proposed changes assessed as part of this ES addendum. As such, paragraphs 14.29 – 14.32 of the original Environmental Statement presented at Appendix A remain valid.

Alternative Development Mix

14.10 A number of alternative site layouts have been considered by the Applicant during the evolution of the proposed development, as set out at paragraphs 14.33 – 14.35 of the original Environmental Statement presented at Appendix A.

14.11 Based upon a review of the proposed amendment described in Chapter 3 of this ES Addendum, alternative development mix is not subject of any update or change as amendments do not alter the quantum of development proposed in terms of floorspace and residential units.

Interactions and Cumulative Effects

14.12 The Interactions and Cumulative Effects section of the Chapter 14 contained within the original Environmental Statement (Appendix A) has been re-reviewed against the findings and updates contained within this ES Addendum. As such, Table 14.1 has been reproduced below for completeness:

14.13 This Section identifies those impacts which are recognised in the ES Addendum as likely to be significant or highly significant post the implementation of those mitigation measures recommended within the topic area assessments and considers the interaction and cumulative impacts of the proposed development.
14.14 The individual topic areas assessment which collectively form this ES Addendum, each identify impacts (both positive and negative) which are likely to be experienced as a consequence of the construction of the Site and during its operation.

14.15 Where possible each assessment chapter (and their supporting Annexes) within the ES Addendum identifies specific mitigation proposals that are needed to prevent, reduce and where possible off-set any significant adverse effects on the environment. It is recommended that these mitigation measures are incorporated into relevant planning conditions and/or planning obligations.

14.16 Updated Table 14.1 below sets our summary of those effects of the proposed mixed – use scheme which have been assessed as being potentially significant. The table also highlights whether an effect is positive or negative.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Construction Phase</th>
<th>Operational Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Significance</td>
<td>Significance</td>
</tr>
<tr>
<td></td>
<td>without mitigation</td>
<td>with mitigation</td>
</tr>
<tr>
<td>Landscape Character</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Historic Landscape Character</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual Impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land conditions &amp; Contaminated Land</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ecology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Designated Sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Hedgerows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Invertebrates</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PART TWO
CONCLUSIONS AND RESIDUAL IMPACTS

<table>
<thead>
<tr>
<th></th>
<th>Significantly Beneficial</th>
<th>Slightly Beneficial</th>
<th>Neutral</th>
<th>Slightly Adverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reptiles</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Water voles</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>White clawed cray-fish</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Great Crested newts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Mature Trees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Birds</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Bats</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Air Quality</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Noise and Vibration</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Transport</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Archaeology and Cultural Heritage</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Socio -Economic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Energy, sustainability and waste management</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Note: The above table provides a simple summary of grouped impacts, by topic area. This summary is based on the findings of the detailed topic area assessments, which are covered in more detail in the Environment Statement.

**Key**

- **Significantly Beneficial**
- **Slightly Beneficial**
- **Neutral**
- **Slightly Adverse**
14.17 This ES Addendum has been prepared as part of the EIA process in order that the likely impacts and effects of the proposed amendments to the development on the environment are fully understood and taken into account. The assessment process has investigated the existing baseline conditions and identified and evaluated the likely significant environment impacts and effects of the proposed amendments to the development and the measures required to mitigate any impacts which are likely to be adverse.

14.18 Based on the outcome of the Environmental Impact Assessment process, summarised in Updated Table 14.1 above, it is clear that the proposed amendments to the development will result in a generally neutral or slightly beneficial impact on the key aspects of the environment when the proposed mitigation measure and practices have been taken into account.

14.19 The proposed amendments will continue to result in a beneficial impact on the landscape character of the former Stanton Ironworks Site and the local area in the longer term. In addition the proposal includes energy efficiency facilities as part of the development that provide low carbon benefits and will thereby contribute to the delivery of the Government’s Climate Change Programme and energy policies and in so doing contribute to global sustainability and the overall objective of tackling climate change. The opportunity to enhance bio-diversity as part of the proposals is also a positive effect of the development.

14.20 It is clear that the above that the development will result in no cumulative adverse impacts on Ilkeston or this part of Erewash Borough.

14.21 The overall balance of impacts is a matter for the local planning authority in their determination of the Application. This ES Addendum clearly identifies the various likely significant impacts and effects in order that the balancing of these issues can be carried out in the light of a comprehensive, systematic and publicly accessible assessment process.
15.0 CONCLUSIONS AND RESIDUAL IMPACTS

15.1 Following a review of the proposed amendments set out within Chapter 3 of this ES Addendum the findings and overall conclusions set out in the ‘Consultations and Residential Impacts’ Chapter 15 of the original Environmental Statement (November 2012) remain unchanged, and for completeness the chapter is reproduced below.

15.2 This Section presents the main conclusions arising from the EIA process from the details set out in this ES. The EIA has considered the potential effects on the environment resulting from a mixed use development on land at Stanton Ironworks, Ilkeston.

15.3 The details of the Application, setting out the nature of the development proposed are provided in Part One of this Environmental Statement and the separate Planning application details which formed the basis of the development considered in the environmental assessment process.

15.4 The ES complies with the requirements of the relevant national legislation including in particular the Town and Country Planning (Environmental Impact Assessment) Regulations 2011, as amended. In carrying out each of the assessments that make up the EIA, regard was had to the best practice guidance covering the relevant areas.

15.5 The EIA was undertaken independently by Alliance Planning, with support from specialist consultants, on behalf of the Applicant. The scope of the EIA was based on a thorough understanding of the development and its possible impact on the environment. It identified each of the potentially significant issues for the individual assessments undertaken.

15.6 Detailed discussion was undertaken with the Planning Authority and relevant statutory and non-statutory consultees. The comments submitted by statutory consultees were reviewed and additional discussions have been undertaken with all statutory consultees during the preparation of this EIA, as necessary. No additional issues have been identified for assessment in this Environmental Statement. Comments made during this process were incorporated into the proposed development, EIA and resultant ES.

15.7 Each of the sections of the ES followed a format consistent with the above requirements, setting out a description of the method statement, the baseline and recommended mitigation and concluding as to the significance of any residual impacts.

15.8 The EIA undertaken as part of the development of the Application has considered in a comprehensive and detailed manner the potential environmental effects likely to arise from
the proposed development. The EIA process has reviewed the environmental implications of the development both during construction and operation and sought to minimise the overall impact on the environment.

15.9 The aim of the Application has been to meet both environmental and socio-economic objectives. To bring forward enhanced residential, community, leisure and retail facilities to form a new neighbourhood and contribute to the vitality and viability of Ilkeston.

15.10 The EIA has concluded that likely impacts of the Application meet recognised standards and are therefore acceptable, providing an appropriate balance between the issues considered. The Application would achieve enhancements in sustainability.

15.11 Although there are some negative impacts arising from the development, these are limited and not significant in their effect. Moreover, in addition to the ecological and regeneration benefits of the development, the proposal will result in a significant beneficial impact on the social and economic character of the Site in the longer term.

15.12 Of the shorter term impacts that are identified in the period of the development, a number of these will be positive and are considered to outweigh any negative impacts. This includes the creation and retention of jobs in the local construction industry that will result in an immediate as well as long term benefit on the wider community.

15.13 Each of the environmental topic areas studied in the ES reflects a policy context set within the Development Plan and national planning policy. In each case, the absence of significant impacts ensures that there is no conflict with the prevailing policies.

15.14 A review of alternative sites and alternative options considered by the Applicant has confirmed that the land at Stanton Ironworks is the most sustainable site to bring forward a mixed use development.

15.15 The overall balance of impacts is a matter for the local planning authority in their determination of the Application. This ES clearly identifies the various likely significant impacts and effects in order that the balancing of these issues can be carried out in the light of a comprehensive, systematic and publicly accessible assessment process.

15.16 Based on the findings of the individual topic assessments and the consideration of the cumulative impacts and the alternatives available to the Applicant, it is concluded that the Application proposals are acceptable in terms of their likely environmental impact.