8.0 LANDSCAPE AND VISUAL EFFECTS

Introduction

8.1 This chapter of the ES assesses the likely significant effects of the Development on the environment with respect to landscape and visual impact.

The chapter describes the assessment methodology; the baseline conditions of the Site and its surroundings; the likely significant environmental effects; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual effects after these measures have been employed.

Landscape Planning Policy

8.2 Landscape Planning Policy relevant to the Site is set out in Appendix 8.2. Policies considered include:

- National Planning Policy Framework (NPPF) (2012)\textsuperscript{i}
- National Planning Policy Guidance (NPPG) (March 2014)\textsuperscript{ii}
- The Joint Core Strategy for Broadland, Norwich and South Norfolk (Adopted March 2011, Amendments adopted January 2014)\textsuperscript{iii};
- The Development Management DPD (DMDPD) for Broadland District Council (2015)\textsuperscript{iv};
- The Growth Triangle Area Action Plan (GTAAP) for Broadland District Council (2016)\textsuperscript{v};
- Recreational Provision in Residential Development SPD (2016) for Broadland District Council\textsuperscript{vi} and
- ‘Saved’ policies set out in the South Norfolk Local Plan (Local Plan adopted March 2003, Saved policies retained by Secretary of State in 2007 and not superseded by policies within the adopted JCS)\textsuperscript{vii}

8.3 Other relevant documents considered include:

- Greater Norwich Development Partnership Green Infrastructure Strategy (2007)\textsuperscript{viii}
- Greater Norwich Green Infrastructure Delivery Plan, The Landscape Partnership (2009)\textsuperscript{ix}
- Broadland District Council Growth Triangle Statement on Green Infrastructure (2014) \textsuperscript{x}

Assessment Methodology

Definition of Study Area

8.4 The assessment will determine the likely significant effects of the Development within a Study Area which is 3 kilometres (km) by 3 km as illustrated on Figure 8.1: Site Context Plan. The study area reflects the extent of the potential visual envelope which has been determined by
an initial review of desk based work and a site visit. The distance from the Site location was chosen based on existing features such as landform and vegetation. This is considered a sufficient area to establish the landscape and visual baseline and to allow the appraisal of the Site.

Landscape and Visual Assessment

8.5 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 (GLVIA)\(^4\), Third Edition (2013). The methodology for the landscape and visual assessment is set out in Appendix 8.3. Landscape and visual 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.

8.6 In summary, the purpose of the LVIA is to identify the likely effects of change resulting from the Development on identified landscape and visual receptors, defined as:

- landscape - landscape character and the elements and features that contribute to it (landscape receptors); and
- visual - people who experience views within the landscape (visual receptors).

Landscape

8.7 In order to assess the potential significance of effects, the sensitivity of the landscape receptor and the magnitude of effect experienced as a result of the Development are established.

8.8 The sensitivity of a landscape receptor is a combination of the value of the landscape receptor and the susceptibility of the landscape receptor to accommodate the Development, and is assessed as either high, medium or low.

8.9 The landscape magnitude of effect is informed by judgements about the size and extent of the change brought about by the Development both in terms of the existing landscape character and landscape elements / features and the addition of new landscape elements / features, and its duration and reversibility and is assessed as either large, medium, small, very small and none.

Visual

8.10 In order to assess the visual effects, the sensitivity of the visual receptor and the magnitude of effect experienced as a result of the Development is considered.
8.11 The sensitivity of the visual receptors is based on a combination of their value and susceptibility, assessed as either high, moderate or low.

8.12 In the evaluation of the effects on views and the visual amenity of the identified receptors, the magnitude of visual effect is typically described with reference to the scale of change in the view; the angle of view in relation to the main activity of the receptor and the extent of the area over which the changes would be visible. The visual magnitude is assessed as major, moderate, minor, negligible or none.

**Significance of Effects**

8.13 In order to draw conclusions about the significance of landscape or visual effects, the combination of the sensitivity of the receptors and the magnitude of effects are considered for the Development at Year 1 and Year 25 of operation.

8.14 The effects diagram, provided in diagram 8.1 below, illustrates the typical relationship between the magnitude of effect and the sensitivity of the receptor.

**Diagram 8.1: Significance of Effects**
### Table 8.1: Landscape Effects Criteria

<table>
<thead>
<tr>
<th>Effect</th>
<th>Landscape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Beneficial</td>
<td>Alterations that result in a considerable / total and distinct improvement of the existing landscape resource. Valued characteristic features would be restored or reintroduced as part of the Development.</td>
</tr>
<tr>
<td>Moderate Beneficial</td>
<td>Alterations that result in a partial improvement of the existing landscape resource. Valued characteristic features would be largely restored or reintroduced.</td>
</tr>
<tr>
<td>Minor Beneficial</td>
<td>Alterations that result in a slight improvement of the existing landscape resource. Characteristic features would be partially restored.</td>
</tr>
<tr>
<td>Negligible Beneficial</td>
<td>Alterations that result in a very slight improvement to the existing landscape resource, not uncharacteristic within the receiving landscape.</td>
</tr>
<tr>
<td>Neutral</td>
<td>No alteration to any of the components that contribute to the existing landscape resource.</td>
</tr>
<tr>
<td>Negligible Adverse</td>
<td>Alterations that result in a very slight deterioration to the existing landscape resource, not uncharacteristic within the receiving landscape.</td>
</tr>
<tr>
<td>Minor Adverse</td>
<td>Alterations that result in a slight deterioration of the existing landscape resource. Characteristic features would be partially lost.</td>
</tr>
<tr>
<td>Moderate Adverse</td>
<td>Alterations that result in a partial deterioration of the existing landscape resource. Valued characteristic features would be largely lost.</td>
</tr>
<tr>
<td>Major Adverse</td>
<td>Alterations that result in a considerable / total and distinct deterioration of the existing landscape resource. Valued characteristic features would be wholly lost.</td>
</tr>
</tbody>
</table>

### Table 8.2: Visual Effects Criteria

<table>
<thead>
<tr>
<th>Effect</th>
<th>Visual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Beneficial</td>
<td>Alterations that typically result in a pronounced improvement in the existing view.</td>
</tr>
<tr>
<td>Moderate Beneficial</td>
<td>Alterations that typically result in a noticeable improvement in the existing view.</td>
</tr>
<tr>
<td>Minor Beneficial</td>
<td>Alterations that typically result in a limited improvement in the existing view.</td>
</tr>
<tr>
<td>Negligible Beneficial</td>
<td>Alterations that typically result in a barely perceptible improvement in the existing view.</td>
</tr>
<tr>
<td>Neutral</td>
<td>No change to the existing view.</td>
</tr>
<tr>
<td>Negligible Adverse</td>
<td>Alterations that typically result in a barely perceptible deterioration in the existing view.</td>
</tr>
<tr>
<td>Minor Adverse</td>
<td>Alterations that typically result in a limited deterioration in the existing view.</td>
</tr>
<tr>
<td>Moderate Adverse</td>
<td>Alterations that typically result in a noticeable deterioration in the existing view.</td>
</tr>
</tbody>
</table>
8.15 Viewpoints representative of surrounding receptors were selected during a site visit in June 2016 and submitted with the EIA Scoping report. These were confirmed by Broadland District Council in November 2016.

Limitations and Assumptions

8.16 In undertaking the landscape and visual impact assessment of the Study 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;
- During the site visit; weather conditions, the time of day, and seasonal factors have influenced the visual assessment and photographic record of the Site; and
- The assessment of likely visual effects has been made from publically accessible vantage points and representative views taken from the nearest available public viewpoint.

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

- The establishment and growth rates for the landscape mitigation proposals are based on the assumption that vegetation will grow at a rate of 1m every 3 years, which assumes that new planting of trees (planted at 2m average height) will achieve a height of approximately 10m after 25 years;
- The construction phase assessment is based on the methodology and programme set out in Chapter 5;
- The landscape proposals will be implemented in parallel with the construction phases;
- The landform of the Site will be developed to follow existing contours where possible such that no major ground remodelling is anticipated; and
- The maximum storey height is 4.5 storeys (18.5m) above ground level as shown on the Figure 3.3, and the assessment has assumed a worst case scenario in relation to final heights.
Baseline Conditions

Site Context

Location

8.18 The Site is located to the west and north-west of the settlement of Thorpe End. As shown on Figure 8.1 Site Context Plan, the Site comprises two fields and an access track, approximately 17.6 hectares (ha) in size, extending between Salhouse Road and Plumstead Road. The northern field fronts on to Salhouse Road and the access track connects the southern field to Plumstead Road. The Site forms part of a mixed-use allocation of 56ha which extends along Salhouse Road from Harrisons Drive on the edge of Norwich to land north of Thorpe End (GT7). GT7 includes secondary GI Corridors connecting the Primary GI corridors to the north and south of the Site, to the west of the northern part of the Site and to the south east of the southern part of the Site. Land adjoining the Site within the wider mixed use allocation is subject to an Outline Planning Application (Planning Application Reference: 20160498) which will extend the urban edge of Norwich eastwards to surround the northern part of the Site if granted. To the east of Thorpe End and west of Rackheath a ‘Northern Distributor Road’ is under construction, crossing Plumstead Road and Salhouse Road parallel to and west of Broad Lane.

Designations

8.19 The Site is located adjacent to and contains part of the Racecourse Plantation County Wildlife Site (CWS) as shown on Figure 8.1: Site Context Plan. There are a number of CWS within the wider area such as Mousehold Heath within Norwich to the west; and Paine’s Yard Wood and March Covert around Rackheath Hall to the north. CWSs are protected under Policy EN1 of Broadland District Council (BDC) Development Management DPD and Norfolk Local Sites Handbookxii contains information on protection and management of CWS in Norfolk.

8.20 Thorpe End Conservation Area covers the southern portion of the settlement of Thorpe End, largely to the south of Plumstead Road. The Conservation Area is separated from the Site by the existing settlement of Thorpe End to the north of Plumstead Road; however the access track, which forms part of the Site, runs from the southern edge of Site to Plumstead Road, where it is aligned opposite the western extent of the Conservation Area. The closest listed buildings to the Site are at Rackheath Hall, 1.4km to the north and Great Plumstead, 2km to the south east. Salhouse Conservation Area is located over 3km to the north east of the Site, respectively.

8.21 Woodland to the north of Salhouse Road includes an area of Ancient Woodland at Bulmer Coppice on the north side of Salhouse Road at a distance of 400m at its closest point to the
Site. Further areas of Ancient woodland are found to the north of the Site at Dobs Beck and on Wroxham Road.

8.22 There are no Public Rights of Way (PRoWs) in the immediate vicinity of the Site. The closest PRoWs are located to the east of Thorpe End near Great Plumstead (PRoW 29 and 30) at a distance of 1.5 kilometres. PRoW 24 is over 3km to the north east of the Site, north of the settlement of Rackheath.

8.23 The Site is adjacent to and contains land identified as GT2 Secondary Green Infrastructure Corridors in the GTAAP Proposed Allocation (Map 5). As noted in paragraph 7.11:

“This designation (GT2) also supports the maintenance of an important landscape scale Green Infrastructure corridor between Thorpe Woodland and Dobbs Beck, which acts as an importance bat commuting corridor maintaining long distance landscape connectivity by utilising NDR [Northern Distributor Route] mitigation measures.”

8.24 A detailed description of the Site is given below under the heading Site Appraisal and illustrated with reference to Figure 8.4: Site Appraisal Plan.

Topography

8.25 The Site forms part of a gently undulating landscape on the north east of Norwich. As illustrates by Figure 8.2 Topographical Features Plan, a broad ridge extends from Norwich towards Rackheath dividing the Dobbs Beck river valley to the north of Rackheath Park and the Witton Run, a river valley starting at Plumstead to the east of Thorpe End. The Site slopes very gradually from west to east with the northern part at 35-40m Above Ordnance Datum (AOD) and the southern part at 30-35m AOD.

Building and Settlements

8.26 The city of Norwich is located to the west of the Site and (its eastern extents are between 0.8 and 1.6km from the Site as shown on Figure 8.1 Site Context Plan). Built development extends further from the city, within Broadland District, along Plumstead Road and Salhouse Road bringing built form within 300m of the northern part of the Site and 1.3km to the southern part. The small settlement of Thorpe End located to the north east of Norwich and the Site adjoins the western edge of the settlement.

8.27 The settlement of Rackheath is located 1.8km to the north east of the Site on Salhouse Road. Various developments to the north of Rackheath on Green Lane Way include Rackheath Industrial Estate. To the north of the Site between Norwich and the settlements of Rackheath there are various farmhouses and stately homes set amongst parkland, farmland and woodland.
Woodlands, Hedgerows and Tree Belts

8.28 Blocks of woodland form a significant feature of the landscape on the north-eastern fringes of Norwich in the vicinity of the Site. Racecourse Plantation extends from the eastern edge of Norwich along Plumstead Road to the western edge of the Site. Harrisons Plantation and The Breck to the north of Salhouse Road extend from Norwich to within 100m of the Site connecting with woodland around White House Farm. Together with woodland surrounding Rackheath Park including Bulmer Coppice (an area of Ancient Woodland) this provides an almost continuous woodland setting to the north of the Site.

8.29 The Site is enclosed by hedgerows, tree belts and woodland boundaries and contains a tree belt dividing the northern and southern parts of the Site. This tree belt, planted around 2003, runs from west to east along the northern edge of the southern field connecting the Racecourse Plantation to the west of the Site with a small area of woodland to the north of Thorpe End. This land is predominantly in arable use although to the south of Salhouse Road small paddocks cover the northern part of the Site and surrounding fields.

8.30 An Arboricultural Impact Assessment was undertaken in March 2016 covering the wider mixed use allocation area GT7 in line with BS 5837: 2012 (Trees in relation to design, demolition and construction). This identifies species of trees within the wider mixed use allocation area predominantly consisting of Pedunculate Oak (*Quercus robur*), Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*), Field Maple (*Acer campestre*), Norway Maple (*Acer platanoides*), Pine (*Pinus sylvestris*) and Hawthorn (*Crataegus monogyna*). With regard to condition and quality, the majority of trees have been categorised as ‘B’ and ‘C’ category, however a number of category ‘A’ trees are also present.

Roads and Public Rights of Way

8.31 A number of roads are in close proximity to the Site radiating out from Norwich to the north east. These include Wroxham Road, Salhouse Road (B1140) and Plumstead Road (East). The A47 which connects Norwich and Great Yarmouth in the east is located approximately 3km to the south of the Site. These radial roads are connected by interconnecting roads, Blue Boar Lane/Woodside Road to the west of the Site and Broad Lane/ Hare Road/ Church Road to the east.

8.32 The corridor of the proposed NDR runs parallel to Broad Lane to the west of Thorpe End approximately 1km from the Site, this is under construction. The route for the Orbital Link Road as indicated in the GTAAP passes through the Site. The railway line from Norwich to Wroxham runs in a north-eastern direction to the east of Thorpe End and the Site.
8.33 There are no PRoWs in the immediate vicinity of the Site. The closest PRoWs are located to the east of Thorpe End near Great Plumstead (PRoW 29 and 30) at a distance of 1.5 kilometres. PRoW 24 is over 3km to the north east of the Site, north of the settlement of Rackheath.

_Historic Landscape_

8.34 The area surrounding the Site formed part of Mousehold Heath during the medieval period until enclosure in the 16th century. Moushold Heath was linked to “Ketts Rebellion” of 1549, a response to the enclosure of land by wealthy landowners. Kett and about 16,000 of his followers camped on Mousehold Heath in July of 1549.

8.35 Thorpe End Conservation Area covers the southern portion of the settlement of Thorpe End, largely to the south of Plumstead Road. The Conservation Area is separated from the main part of the Site by the existing settlement of Thorpe End to the north of Plumstead Road; however the access track, which forms part of the Site, runs from the southern edge of Site to Plumstead Road, where it is aligned opposite the western extent of the Conservation Area. The closest listed buildings to the site are at Rackheath Hall, 1.4km to the north and Great Plumstead, 2km to the south east.

8.36 Woodland to the north of Salhouse Road includes an area of Ancient Woodland at Bulmer Coppice on the north side of Salhouse Road at a distance of 400m at its closest point to the Site. Further areas of Ancient woodland are found to the north of the Site at Dobbs Beck and on Wroxham Road.

_Landscape Character_

8.37 Landscape Character Areas at a national, district and local level relevant to the Sites are illustrated on Figure 8.3: Landscape Character Plan.

_National_

_Natural England Character Area profile: 78. Central North Norfolk_

8.38 Natural England has produced a Countryside Character Map of England which includes broad-brush descriptions of the different character areas of England. The Site is located to the south of National Character Area (NCA) 78: Central North Norfolk which is described as a “_gently undulating rural landscape_” with a “_long-settled agricultural character where arable land is enclosed by winding lanes and hedgerows_”. It is noted that the area is “_relatively well-wooded_” and woodland cover is a notable land cover to the west of the Site. The Site, being on the edge of Norwich and close to the associated urban development, does not share all the characteristics of the NCA, which is also described as a “_predominately tranquil place, with isolated market towns and scattered villages and farmhouses_”.

20976/A52ES20167 January 2017
The Statements of Environmental Opportunity (SEO) for Central North Norfolk include SEO 2:

“Maintain, enhance and restore priority habitats, including woodlands, areas of remnant heathland, … Seek opportunities to connect fragmented habitats, improving the area for biodiversity and recreation, and enhancing landscape character and resilience to climate change.”

District

_Broadland District Council Landscape Character Assessment_™

BDC commissioned Chris Blandford Associates to undertake a Landscape Character Assessment Review to update the previous Landscape Character Assessment (1999) in accordance with current guidance. The Landscape Character Assessment (LCA) was adopted as a Supplementary Planning Document SPD (2013) to support Policy 1 Addressing Climate Change and Protecting Environmental Assets in the Joint Core Strategy.

The LCA divides the district into six broad Landscape Character Types (LCT) including the Wooded Estatelands (Area E), which covers the centre and north of the district from Aylsham in the north to Norwich in the south west, and includes the Site. This is subdivided into four Landscape Character Areas (LCA). Adjoining north-east Norwich and including the Site is LCA E3 - Spixworth Wooded Estatelands. To the east of LCA E3 is LCA E4 - Rackheath and Salhouse Wooded Estatelands.

_Wooded Estatelands (Landscape Character Type E)_

The key characteristics given for the LCT include a "pattern of small manor houses, isolated halls and larger estates" and "Numerous copses, woodlands and small plantations associated with these estates, punctuating a landscape of underlying predominantly arable farmland". In the summary of visual character, it is noted that these woodland features provide a sense of enclosure: "Views across this landscape are restricted in places by the pockets of woodland. In other places, however, long views across gently rolling farmland can be gained." It is also noted that whilst "there is generally a predominantly rural character and associated strong sense of tranquillity throughout most of this landscape"... "The influence of the urban edge of Norwich is also quite strong towards the south of this Landscape Character Type".

The key forces for change identified include:

- Loss of field boundaries as a result of agricultural intensification;
- Small-scale incremental development within villages....;
- Changes in woodland cover as a result of changes in management;...
• Loss of field trees and mature landscape structure as a result of agricultural intensification.

8.44 The Wooded Estatelands are considered to have a “generally strong and distinctly recognisable sense of place throughout, with historic halls, woodland copses and small settlements providing visual landmarks and focal points” and the overall strategy for the LCT “should be to conserve the relatively intricate pattern of woodland clumps and copses and historic halls, alongside the generally strong character and recognisable sense of place.”

Spixworth Wooded Estatelands (Landscape Character Area E3)

8.45 In the summary of visual character (paragraphs 3.8.29-31) it is noted that Spixworth Wooded Estatelands LCA “abuts the northern settlement edge of Norwich” and that “although land use within the area is influenced by its close proximity to Norwich, a large proportion of the area is still in arable cultivation, especially in western parts”. In terms of definition of the settlement edge the summary states that: "In eastern parts of the area, the settlement edge is often well enclosed by woodland, tree belts, copses of mature trees and robust hedgerows in adjacent fields. Woodland in these areas, both coniferous and lowland mixed deciduous, is generally associated with high landscape and recreational value for adjacent urban populations". The description of the landscape notes that it "generally comprises a semi-rural character” and that "its strength of character has been diluted by substantial fragmentation to the hedgerow structure in western parts". The description of landscape features in the eastern parts of the area (where the Site is located) includes: “parcels of land form a patchwork of rectangular fields and woodland. Robust blocks of woodland generally contain views across this flat landscape, at times, forming distinct coniferous skylines". It is also noted that “The road network has a strong influence; well used by commuters, it is noisy and busy”. The visual summary concludes that: "The mixture of land uses within the area generally coincides with a fairly weak sense of identity".

8.46 The assessment identifies “landscape sensitivities” of Spixworth Wooded Estatelands which include the "mature landscape structure in eastern parts, including large blocks of woodland (including coniferous plantations), tree belts, copses of mature trees, remnant hedge boundaries and hedgerow trees, and parkland trees associated with large houses and halls”. It is noted that this woodland has "high landscape and recreational value....; in particular the woodland located in eastern parts on the settlement edge of Norwich” as well as forming "an important landscape setting to the city of Norwich” and "villages”.

8.47 The “Landscape Planning Guidelines” for Spixworth Wooded Estatelands include:

• ...conserve the predominantly rural character...
...conserve and enhance the diversity of landscape structure...

Seek opportunities for the restoration of fragmented hedgerows...

Ensure that any new development responds to historic settlement pattern and is well integrated into the surrounding landscape...

maintain greenspace between the edges of Norwich urban area and adjacent villages....

conserve and enhance the landscape setting of Norwich and seek to screen (where possible) existing and potential harsh settlement edges

maintain and enhance copses of mature trees and existing robust hedgerows

Summary

8.48 The general strength of character and recognisable sense of place across the Wooded Estateland LCT is weaker where it adjoins the settlement edge of Norwich, as identified in the Spixworth LCA, as a result of the mixture of land uses and busy roads in this area. Large blocks of woodland, tree belts, copses of mature trees, remnant hedge boundaries and hedgerow trees are characteristic of the eastern part of the LCA, where the Site is located. These have a high recreational value as well as forming an important part of the setting of Norwich and surrounding villages. The assessment highlights this woodland structure as a sensitive feature which should be maintained and enhanced.

Site Appraisal

8.49 An appraisal of the landscape features and character of the Site is set out below and is illustrated on Figure 8.4: Site Appraisal Plan. This plans illustrates the extent of the Site, the existing vegetation, boundary features, buildings and roads, on or in close proximity to the Site. The plan references the existing areas of vegetation on or within the vicinity of the Site and for ease of reference notes hedgerows with an “H” number; fields with an “F” number; tree belts with a “TB” number and woodland with a “W” number. A number of photographs of the Site were taken, and these are enclosed as Application Site Appraisal Photographs in Appendix 8.1, and referenced to the descriptions below.

8.50 The Site adjoins woodland (Racecourse Plantation) on the western boundary of F2 and adjoins the settlement of Thorpe End on the eastern boundary of F2. The northern part of the Site (F1) is located between Castle Carvery restaurant to the west and Grange Farm to the east on Salhouse Road.

8.51 The Site is flat as illustrated by Site Context Photographs C-H. F2 is a relatively large field in arable use and F1 is smaller and is currently uncultivated and overgrown. Although open in
character, both are well contained and surrounded by a combination of vegetation and built form.

8.52 Site Appraisal Photograph A illustrates the business centre and apartment building in the northwestern part of the Site with its associated parking off Salhouse Road. Photograph B illustrates the northern field (F1) in its context, set between residential buildings to the west and buildings on Grange Farm to the east. The treed boundaries formed by TB1 to the west, Racecourse Plantation to the south enclose views beyond these extents of the Site. Hedgerow (H2) to the west partially screens views of buildings within Grange Farm. Photograph C illustrates the dense scrub vegetation on the northern part of the field which, together with the hedgerow boundary to Salhouse Road (H1) currently forms a strong boundary between the Site and Salhouse Road.

8.53 Site Appraisal Photograph D illustrates the tall tree belt (TB1) on the western boundary of the Site in this view from the south of F1. The woodland of Racecourse Plantation can be seen to the right of the view and the hedgerow boundary with Grange Farm (H2) running between the Grange Farm buildings and the woodland to the south.

8.54 Site Appraisal Photographs E and F are taken from the centre of the southern field (F2). They illustrate the woodland boundaries to the north and west of the field including the woodland (W1) within the Site. To the east and south the residential properties within the settlement of Thorpe End can be seen amongst the boundary and garden vegetation.

8.55 The boundaries of the residential properties in Thorpe End can be seen in Site appraisal photographs G and H, made up of a mixture of walls, fences and hedges with intermittent tree planting.

8.56 The track to the Site from Plumstead Road is shown on Site Appraisal Photograph I. The track is narrow, grassed, and bounded by trees and a hedgerow on the southern side of the track and by high garden hedges on the northern side.

8.57 The Site is bounded by and comprises substantial vegetation and tree belts. A combination of belts and groups of trees and buildings form the skyline of views obtained from within the Site and curtail views from the Site into the wider landscape.

Visual Appraisal

8.58 A visual appraisal of the Site and its environs was undertaken in April 2014 and June 2016 to determine the relationship of the area with its surroundings, and the visibility of the Site within the wider landscape.
As illustrated on Figure 8.5: Visual Appraisal Plan, the visual appraisal was undertaken from publicly accessible viewpoints within the surrounding landscape, such as from roads and footpaths, to determine the approximate extent of the area from which the Site is visible from the eye level of a person standing on the ground. The visibility of any site is predominantly influenced by its landform and the extent and type of vegetation cover and built elements within the Site and the surrounding landscape.

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, and properties, three categories of visibility have been used in this assessment:

(a) Open view: A clear view of a significant proportion of the Site within the wider landscape.

(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) Truncated / No view: Views towards the Site are curtailed by visual barriers, such as intervening topography, vegetation or built forms.

Potential views towards the Site are limited almost entirely to near distance views with middle and longer distance views curtailed by intervening topography and / or land cover. The nature of near (0-300 metres), middle (300-600 metres) and long (over 600 metres) are described separately below:

**Near Distance Views (0-300 metres)**

Site Context Viewpoints 1-6 illustrate views towards the Site on the immediate approaches to its northern boundary on Salhouse Road. These demonstrate that the existing vegetation and buildings on the southern side of Salhouse Road curtail views of the northern part of the Site.

Site Context Viewpoints 7-9 from within the residential area of Thorpe End demonstrate the built-up nature of the housing area and the restricted views towards the Site between properties from publically accessible areas. Private views from the rear of the properties adjoining the Site on Broadland Drive, Barker Way, St David’s Drive and Heath Road are open across the southern part of the Site (F2) as can be seen from Site Appraisal Photographs (F-H). The Site is not visible from within Thorpe End Conservation Area.

Site Context Viewpoint 10 from Plumstead Road East is taken across the field immediately to the south of the Site. Vegetation on the track leading to F2, the southern-most part of the Site, can be seen to the right of the view. Behind this vegetation, the upper parts of the
houses on Heath Road in Thorpe End are visible. To the left of the view is the woodland of Racecourse Plantation. Buildings on Heath Road and the woodland screen views of F2.

*Long Distance Views (over 600 metres)*

8.65 Views from further to the north east on Salhouse Road, as illustrated by Site Context Viewpoints 11 and 14, demonstrate that the intervening field boundary vegetation, as well as shed structures within fields restrict views of the Site. Similarly, Site Context Viewpoints 12-15, from the south-eastern edge of Rackheath, demonstrate that whilst the eastern edges of Thorpe End are visible, no parts of the Site are can be seen. Construction of the Northern Distributor Road will, on completion, alter the character of views from these locations, with the addition of built form, vehicle movement and vegetation.

8.66 The topography undulates to the north of the Site towards Wroxham Road. Site Context Photographs 16 and 17 are taken from Sprowston Manor Hotel and a recent housing development to the south west of Sprowston Manor, respectively. These demonstrate that views to the Site are restricted by the landform and substantial blocks of woodland surrounding White House Farm and Harrison’s Plantation.

*Lighting Sources*

8.67 In association with the visual appraisal exercise, consideration was also given to the availability of night time light sources that influence views of the Site, in accordance with the methodology included in Appendix 8.3. Light in the vicinity of the Site was experienced in the form of night-time sky glow, and/or glare from particular points of light (residential properties/street lights/buildings/floodlights). During this exercise the following principal light sources were identified within the vicinity of the Site:

- Significant sky glow from Norwich, including floodlights associated with sports pitches and commercial units on the north-eastern settlement edge. Direct glare towards the Site are curtailed by intervening topography, vegetation and distance;
- Sky glow from the smaller settlements of Thorpe End and Rackheath to the east/north-east. Some direct glare is experienced from residential properties and street lights on the edges of these settlements, however boundary vegetation partially screens these lighting sources;
- Direct glare from vehicle headlights and street lights on B1140 (Salhouse Road), north of the Site and Plumstead Road East, south of the Site, however the enclosed/vegetated character of these roads limits wider visibility of these lighting sources;
- Direct glare from isolated properties on B1140 (Salhouse Road) north and Plumstead Road East, including some with uplighters/security floodlights; and
8.68 The appraisal demonstrates that there are a number of light sources within the landscape surrounding the Site, with sky glow and direct glare noticeable from a range of public viewpoints. However, there is a greater concentration of light sources to the west of the Site, in association with Norwich, road corridors such as the B1140 (Salhouse Road) and Plumstead Road. This is illustrated by Figure 8.6 Existing Light Sources Plan.

8.69 Whilst Norwich and surrounding road corridors such as the B1140 (Salhouse Road) and Plumstead Road, provide an urban influence in this area and reduce the sensitivity of the nocturnal landscape, screening from vegetation and topography and the transition with the rural countryside reduce the effect of these light sources on the Site. It is considered that the Site broadly corresponds to IPL Environmental Zone E2 (Rural) and E3 (Suburban), with a low to medium district brightness. Screening provided by vegetation within and surrounding the Site result in the overall sensitivity to new lighting sources assessed as low-medium.

8.70 These findings also correspond with "Great Britain's Light Pollution and Dark Skies" mapping \(^{xvi}\) which locates the Site within a zone of 2-4 NanoWatts/cm\(^2\)/sr, the mid-point between the brightest night skies (at >32 NanoWatts/cm\(^2\)/sr) and the darkest skies (at <0.25 NanoWatts/cm\(^2\)/sr). Darker skies are to the east and brighter skies to the west and south around built up areas of Norwich.

8.71 Assessment of the most significant effects of lighting as a result of the Development on potential receptors will be described as part of the visual appraisal.

**Summary of Baseline Visual Appraisal Receptors**

8.72 Following the Visual Appraisal exercise, the following visual receptors were identified and considered within the Visual Effects Table included in Appendix 8.4. and listed in Table 8.3 below:

**Table 8.3: Visual Receptors**

<table>
<thead>
<tr>
<th>Receptor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential Properties</strong></td>
</tr>
<tr>
<td>Properties on the western side of Thorpe End, at Broadland Drive, Barker Way, St David’s Drive and Heath Road, adjoining the Site</td>
</tr>
<tr>
<td>Properties on the eastern edge of Harrisons Drive and Greenborough Road and Grange Cottage on Salhouse Road</td>
</tr>
<tr>
<td>Residential properties on Salhouse Road from Grange Farm eastwards to Rackheath</td>
</tr>
</tbody>
</table>
Receptor

White House Farm
Rackheath Hall
Hall Farm
Residential properties on the western edge of Rackheath
Residential Properties on northern end of Green Lane north
Residential properties at northern end of Dussindale Drive
Residential Properties at Mallard Way

Listed Buildings

Grade II Listed Buildings at Rackheath Hall
Listed Buildings at Plumstead Green
Listed Building at Great Plumstead

Other Buildings

Castle Carvery
Thorpe End Village Hall
Sprowston Park Hotel and Golf Club

Conservation Areas

Thorpe End Conservation Area

Roads

Salhouse Road
Plumstead Road
Broad Lane
Northern Distributor Road

Summary of Site Appraisal and Visual Appraisal

8.73 The Site is adjoined by built form and roads which exert an urbanising influence on the Site, and distinguish the Site from the wider agricultural landscape to the east. Due to a combination of the location of the Site, the topography of the Site and its surroundings, and the extensive tree structure within and adjoining the Site, open views of the Site are restricted to its most immediate setting. The southern part of the Site is visible in private views from the rear of adjoining properties in the settlement of Thorpe End, and the northern Site boundary is visible
from a short section of Salhouse Road. Beyond its immediate setting the Site and its boundary vegetation is screened from view by intervening vegetation and built form.

**Likely Significant Effects**

8.74 The following section describes the likely effects on landscape and visual receptors as a result of the Development which is described in Chapter 3 of this ES (Site & Development Description).

8.75 It is considered that for any development of the scale proposed, some effect on views from surrounding locations, including residential properties will be apparent. However, in accordance with best practice for the assessment of landscape and visual effects, mitigation measures have been considered as an integral part of an iterative process of project planning and design, to achieve an optimum environmental fit as part of achieving an environmentally integrated design. The parameter plans (Figure 3.1 to Figure 3.3) included as figures within Chapter 3 (Site & Development Description) have been developed in response to the surrounding environment and Site constraints to avoid and minimise potential for adverse impacts through adopting an appropriate design of the Development, this includes identifying the location of zones for built development and strategic landscaping.

8.76 The Visual Effects Table included in Appendix 8.4 records the changes to the views from identified visual receptors, and the Landscape Effects Table in Appendix 8.5, records the changes to landscape features on the Site and landscape character. The list of cumulative schemes set out in Chapter 2 of this ES (EIA Methodology) has been reviewed and an assessment made of the cumulative effects upon landscape and visual receptors resulting from development of the Site and the adjacent application site within the GT7 mixed use allocation.

**Construction**

8.77 Chapter 5 of this ES contains details of the construction methodology and programme. Inevitably there will be some direct landscape and visual effects created during the construction period, mainly arising from intermittent use of cranes and the buildings under construction. There will also be some effects resulting from increased traffic and movement of machinery and equipment facilitating change within the Site during this period. It is assumed that the construction period will run between 2018 (subject to gaining planning permission) and 2027.

8.78 A construction site compound 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.
**Visual Effects of Construction on Residential Properties**

8.79 Residential properties likely to experience significant visual effects during the construction period have been identified in near distance views to the east and south of the southern part of the Site. Properties on the western edge of Thorpe End at Broadland Drive, Barker Way, St David’s Drive and Heath Road have open / partial views across the southern part of the Site where construction activity will be apparent. There is little existing vegetation between the Site and these properties to filter views. These receptors are predicted to experience a major negative magnitude of change with a major adverse significance of effect during the construction period, albeit for a temporary period.

8.80 Properties on the eastern edge of Harrisons Drive and Greenborough Road including Grange Cottage on Salhouse Road, to the west of the Site, will experience glimpsed views of construction activity above a dense tree belt adjacent to the western Site boundary. These receptors are predicted to experience a negligible negative magnitude of change with a minor adverse significance of effect during the construction period, albeit for a temporary period.

8.81 Grange Farm is the closest residential property to the Site on Salhouse Road. Views of the Site are glimpsed from upper floor windows of the main building and surrounding yards with some screening provided by intervening vegetation between this property and the Site. This receptor is predicted to experience a moderate negative magnitude of change with a moderate adverse significance of effect during the construction period, albeit for a temporary period.

8.82 Views from other residential properties on Salhouse Road are restricted as a result of existing vegetation on Salhouse Road, property boundaries and field boundaries.

8.83 Views from other residential properties in the vicinity of the Site are curtailed due to intervening existing vegetation or buildings. These receptors include those properties to the north of Salhouse Road at White House Farm, Rackheath Hall and Hall Farm, properties on the western edge of Rackheath and properties on Plumstead Road. These receptors are predicted to experience a neutral magnitude of change with a neutral significance of effect during the construction period.

**Visual Effects of Construction on Listed Buildings**

8.84 Views from the Grade II listed Rackheath Hall to the north of the Site are curtailed by woodland and construction activity is predicted to have a neutral visual effect upon this receptor.

**Visual Effects of Construction on Other Properties**

8.85 Properties on the western boundary of the Site are visible above boundary vegetation from within the car park and grounds of the Castle Carvery. The northern part of the Site (F1) is
not visible beyond the intervening vegetation. Construction activity on the north-western part of the Site will be visible. This is predicted to result in a minor magnitude of change on a moderate/low sensitive visual receptor resulting in a minor adverse significance of effect.

8.86 No further other property receptors have been identified with potential to obtain significant adverse visual effects during the construction period of the Site.

Visual Effects of Construction on Roads

8.87 Salhouse Road is the road most likely to experience visual effects of construction on the Site before mitigation. Salhouse Road runs from Norwich towards Rackheath and Salhouse. Views from a short distance of Salhouse Road of construction activity will be possible between Castle Carvery and Grange Farm. These buildings and roadside vegetation will curtail views of construction activity from beyond the immediate northern boundary of the Site. This is therefore predicted to result in a minor magnitude of change with a minor adverse and negligible significance of effect during the construction period.

Effects of Construction on Landscape Features

8.88 The north-western part of the Site contains existing buildings including business and residential properties, however the Site is predominantly open, consisting of rough grassland on the northern part and arable grassland on the southern part with a tree belt separating them. During construction, features typically associated with construction sites such as security and office cabins, hoardings, car parking, fences, large vehicles and areas of hard standing will replace the existing open fields and alter the existing association with agriculture in the Site.

8.89 There is an area of woodland within the southern part of the Site which is contiguous with Racecourse Plantation to the west and forms part of a County Wildlife Site. This woodland contains a number of ponds. To the north of the woodland, within the CWS, an area formerly containing agricultural buildings, now overgrown with scrub vegetation will be cleared to accommodate the Development. The woodland and the water features within it would be protected during construction.

8.90 Hedgerows form the boundaries to the north and east of the northern part of the Site and partially along the south-eastern Site boundary with Thorpe End. During construction, there will be some minor loss of existing hedgerow and part of the central tree belt, due to the creation of construction access routes and new links between the north and south parts of the Site, however this will be limited and the majority of existing hedgerows and woodland will be retained. There will be a substantial loss of grassland across the Site, which will undergo a major change during construction. Retained landscape features will be protected from
construction activity in line with BS standards and recommendations such as BS 5837: 2012 (Trees in relation to design, demolition and construction).xviii.

8.91 Whilst there will be some limited loss of vegetation during the construction period, the overall retention of the existing hedgerows, woodland and tree belt will remain, reducing the impact in terms of landscape feature loss. Such change is therefore predicted to result in a magnitude of change which ranges between none to major adverse change on low to high sensitive receptors, which results in a moderate adverse to neutral significance of effect. On high sensitive receptors, which include hedgerows and tree belts, changes are predicted to result in a minor negative magnitude of change, and a moderate adverse significance of effect.

**Effect of Construction on Landscape Character**

8.92 The Site generally has a medium to low landscape character sensitivity, having medium to low landscape value with low susceptibility to residential development. During construction, the retention of important local landscape features, particularly tree belts and hedgerows will remain and form a structure to the Development. In this context, features typically associated with construction sites, such as security and office cabins, hoardings, car parking, fences, large vehicles and areas of hard-standing would appear contained across a localised area observed in the context of existing urban influences of Thorpe End and Salhouse Road. It is therefore predicted that the temporary effects of construction before mitigation on local landscape character will represent a minor/negligible negative magnitude of change on an existing area of medium to low sensitivity landscape, resulting in a minor adverse significance of effect.

**Effect of Construction Lighting**

8.93 The baseline survey of existing lighting demonstrates that the Site does not represent an area of truly dark skies and represents an overall level of sensitivity of low to medium in terms of its ability to introduce new lighting sources. In this context, the impact of lighting during construction on surrounding areas is considered to be relatively limited. There will be some effects as a result of lighting on surrounding receptors, as a result of winter working and use of lighting in the late afternoon onwards, however this will be temporary.

8.94 Overall, it is considered that the effect of the new lighting on surrounding receptors will represent a moderate negative magnitude of change resulting in a moderate adverse significance of effect during construction. Mitigation measures will help to minimise instruction from construction lighting resulting in a moderate/minor residual significance of effect.
Completed Development

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

- Changes to the baseline character and appearance of the Site as a result of the Development;
- Changes to the baseline character of the surrounding areas as a result of the Development;
- Changes to baseline views of the Site from the surrounding area as a result of the Development; and
- The creation of new views to, and from, the Site as a result of the Development.

8.96 The detailed assessment of the effects of the Development on views for visual receptors is set out in Appendix 8.4, and on landscape features and character receptors is set out in Appendix 8.5. A summary of the findings of this assessment has been set out below.

8.97 This section describes the landscape and visual effects of the Development immediately following completion (Year 1). Effects associated with the Development must also be considered in the context of the existing urban edge character associated with the Site. Established areas of retained vegetation within these parcels of land and surrounding them also influence potential visual effects. Landscape and planting buffers, extending around some of the boundaries of the Site, will have been implemented throughout the Development, which will further mitigate visual effects.

Visual Effects on Residential Properties (Year 1)

8.98 Residential receptors with near distance partial or open views of the Development include properties on the western edge of Thorpe End at Broadland Drive, Barker Way, St David’s Drive and Heath Road. At completion, views of residential development will replace views across existing arable grassland in the foreground with woodland in the background. Development will be viewed through new vegetation along the southern and eastern boundaries, softening the edge of the Development. From these properties this is predicted to result in a major magnitude of change with a moderate-major adverse significance of effect.

8.99 Visual effects of the completed development from other properties in the vicinity of the Site are restricted as a result of intervening existing vegetation or buildings. These receptors include those properties on the eastern edge of Harrisons Drive and Greenborough Road including Grange Cottage on Salhouse Road; Grange Farm, other properties on Salhouse Road, White House Farm, Rackheath Hall (Grade II listed Building) and Hall Farm as well as properties on the western edge of Rackheath and properties on Plumstead Road. These receptors are
predicted to experience negligible to minor magnitudes of change with a negligible adverse, moderate-minor adverse and neutral significance of effect on completion of the Development.

_Note: Visual Effects on Listed Buildings (Year 1)_

8.100 Views from the Grade II listed Rackheath Hall to the north of the Site are curtailed by woodland and the completed development is predicted to have a neutral visual effect upon this receptor.

_Note: Visual Effects on other Properties (Year 1)_

8.101 Views of the completed Development from Castle Carvery to the west of the Site will be seen as a replacement of the business centre which was previously visible in the view. Landscaping along the western edge of the Site will further reduce visual effects from this property. This is predicted to result in a minor magnitude of change on moderate/low sensitive visual receptors resulting in a minor adverse significance of effect.

8.102 No other property receptors have been identified with potential to obtain significant adverse visual effects on completion of the Development of the Site.

_Note: Visual Effects on Roads (Year 1)_

8.103 Salhouse Road is the road most likely to experience visual effects on completion of the Development of the Site. Salhouse Road runs from Norwich towards Rackheath and Salhouse. Views from a short distance of Salhouse Road of the completed development will be possible between Castle Carvery and Grange Farm. This view is transient in nature and will be seen in the context of existing built form along Salhouse Road. These existing buildings and roadside vegetation will curtail views of the completed development from beyond the immediate northern boundary of the Site. This is therefore predicted to result in a minor magnitude of change, with a minor adverse significance of effect upon completion.

_Note: Effect of Proposed Lighting (Year 1)_

8.104 The baseline survey of existing lighting demonstrates that the Site does not represent an area of truly dark skies and represents an overall level of sensitivity of low to medium in terms of its ability to introduce new lighting sources. In this context, the impact of new lighting on surrounding areas is considered to be relatively limited.

8.105 The inclusion of zones for strategic landscaping within the Site will reduce the potentially adverse effect of luminance and light presence (visibility of lit elements affecting the character of the nightscape) when viewed from surrounding residential properties and roads on completion of the Development.
8.106 With regard to viewpoints from B1140 (Salhouse Road) and Plumstead Road East, the Development has the potential to result in a small magnitude of effect owing to the introduction of new lighting within the Site, taking into account the partially lit character of these viewpoints (IPL Environmental Zone E3 (Suburban) due to direct glare from streetlights, headlights, and isolated properties and sky glow perceived from Norwich, Thorpe End and Rackheath. In addition, the enclosed/vegetated character of the road viewpoints would limit direct glare from the Development. This would result in effects on the character of the night sky in this area of Minor Adverse.

8.107 The Development would result in the potential for a small magnitude of effect, as a result of the introduction of new lighting within the Site on the viewpoints within Thorpe End, south-west of the Site, although reflecting the already lit character of Plumstead Road/Plumstead Road East, and seen in context of the sky glow associated with Norwich. This would result in Minor Adverse effects on the character of the night sky in this area.

8.108 The more open viewpoints on the south-western edge of Rackheath have a darker character (broadly corresponds to IPL Environmental Zone E2 (Rural)). Due to existing significant sky glow associated with Norwich and Thorpe End, perceived in the direction of the Site, and existing intervening vegetation curtaining most direct glare from the Development, it is considered that the Development would result in a very low magnitude of effect to the character of the night sky in this area, resulting in Negligible Adverse significance of effect.

8.109 From the viewpoints north-west of the Site near Sprowston Manor, due to the existing lit character of the area which comprises of prominent floodlights, street lights and Sky glow from Norwich, it is considered that the Development would result in a very low magnitude of effect to the character of the night sky in this area, resulting in Negligible Adverse significance of effect.

Effects on Landscape Features (Year 1)

8.110 The Development will reinforce existing landscape features proposed to be retained that will help offset the loss of landscape features during construction.

8.111 The majority of existing hedgerows tree belts and woodland are proposed to be retained within the Site and around its boundaries although there will be some minor loss of existing hedgerow and part of the central tree belt. The retention of tree belts within the Development, and inclusion of zones for strategic landscaping will result in a minor magnitude of change and a moderate significance of effect. Grassland and arable land will be lost throughout the Site however amenity grassland will be reinstated within the provision of informal and formal open space. At completion (Year 1), such development is considered to help improve the condition and quality of landscape features represented in the local landscape and help offset the effect.
of landscape features removed. In this context, the Development is predicted to result in an overall moderate to minor magnitude of change and a moderate adverse to minor beneficial significance of effect on landscape features.

*Effects on Landscape Character (Year 1)*

8.112 Given the level of containment of the Site and its semi-urbanised context, the effects of the Development are considered to be of local importance and there are many beneficial effects that arise from the reinforcement of existing landscape features and enhancements to green infrastructure incorporated within the Development. The Development has responded to the existing grain or pattern of existing field boundaries to ensure development is contained within an existing landscape structure. Zones for strategic landscaping and retention of boundary features are incorporated throughout the Development to further contain built elements within a strongly vegetated framework and reinforce the contribution of the Site to the surrounding landscape character.

8.113 The local level landscape character area with potential to experience landscape effects is the Spixworth Wooded Estatelands within the South Norfolk Landscape Character Assessment. The impact of the Development on this receptor is considered localised and contained by adjoining areas of development at Thorpe End and by surrounding woodland vegetation.

8.114 The key landscape features which contribute to the character of the landscape will be retained and their quality enhanced through the provision of a comprehensive network of green infrastructure and ongoing management. Effects on views towards the Development from wider areas will be unaffected.

8.115 As with any site on the edge of a settlement proposed for housing and mixed use development, there will be a change from semi-rural to urban landscape within the Site. However, the character of this area is already influenced by its proximity to the existing urban edge of Norwich and Thorpe End. In addition, key elements of the existing landscape structure will be retained including the majority of hedgerows/tree belts retained along internal green corridors and along the boundaries.

8.116 In summary, although the Site will change in character, the main features that contribute to that character will be retained and assist with absorbing the Development within its landscape context. As a result, the potential impact of the Development on the character of the surrounding landscape will be reduced. Much of the land surrounding the Site is already influenced by its proximity to adjoining built up areas. This context reduces the landscape character sensitivity within the Site. The change in character from settlement edge to urban as a result of the Development will result in a minor magnitude of change and represent a minor adverse significance of effect at completion, for county and local level character areas.
Mitigation Measures

Construction Mitigation

8.117 During construction, a number of specific mitigation measures have been designed to reduce the magnitude of effect across the Development. Measures 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, ensuring that the minimum area only is lit, for the minimum period of time;
- Agreeing appropriate working hours with BDC to ensure that adverse visual effects of construction are not experienced by residential 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 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.

8.118 Notably, all retained vegetation on the 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 design, demolition and construction) recommendations.

Mitigation associated with the Completed Development

8.119 The design, form, layout and appearance of the Development are set out within the Design and Access Statement. In summary, development of the Site for new housing would result in the integration of new buildings into the existing landscape setting, which would be improved and enhanced by a landscape strategy and management regime proposed for the Site. The residential development provides a unified form and layout that connects well with potential future residential development while minimising the perceived impact of development from surrounding areas. The scale and massing of the Development responds to the existing urban edge context and introduces further open space areas to create a connected framework of attractive public space that increases green infrastructure provision through improved recreational and habitat opportunities in this area.

8.120 The proposed alignment of the new access road creates a legible entrance into the Site. All of the proposed buildings would be of a “domestic” scale comprising up to 4.5 storeys at the
northern part of the Site, 3 storeys in the central area and 2 storeys adjacent to Thorpe End on the eastern parts of the Site, all set back from vegetated site boundaries. A varied roofscape would further reduce adverse visual effects by breaking up the built form and assimilating built form into its surroundings.

**Development Proposals and Landscape Strategy**

8.121 The iterative design process for the Development has been led by the consideration of landscape and visual issues, as identified in the Site and Visual Appraisal and review of published landscape studies and relevant policy.

8.122 The Site provides the following opportunities to respond to planning policy and guidance:

- The GTAAP identifies a Mixed-use Allocation (Policy GT7) including the Site;
- The Site is not covered by any national or regional landscape designations;
- The Development could incorporate the NCA Statement of Environmental Opportunity (SEO2) to connect fragmented habitats improving the area for biodiversity and recreation;
- The Development could reflect the key characteristics of Spixworth Wooded Estateland LCA through maintenance and enhancement of copses of mature trees and existing robust hedgerows;
- Retention and promotion of wildlife linkages through the Site as part of the green infrastructure network as promoted through the GTAAP, the Greater Norwich Green Infrastructure Strategy, The Development Management DPD and the Joint Core Strategy;
- The retention of large areas of open space within the Development, which would provide new areas of publicly accessible open space, managed positively for biodiversity and water attenuation;
- Orientation of formal recreation and open space to form part of the infrastructure corridors linking Thorpe Woodlands with Rackheath Park;
- The introduction of new trees, site-wide;
- The introduction of a network of paths which would enhance connectivity and provide circular routes around and through the Site; and
- The introduction of new play areas to encourage natural play;
- Retention of the vegetation along the track leading from Plumstead Road; and
- Opportunity to improve the track sensitively to improve access for pedestrian and cycle linkages.

8.123 It is proposed that the majority of new planting would comprise of locally occurring species and consequently appear in scale and harmony with the surrounding landscape. The proposed
planting measures would also provide landscape and visual amenity enhancement, and assist with improving the appearance and nature conservation value of the local landscape.

8.124 The landscape objectives for the Development are as follows:

- To retain, wherever possible, all existing high quality landscape features, such as areas of established woodland, tree belts and hedgerows on and adjacent to the Sites, and to ensure the long-term positive management of these features;
- To retain and reinforce the pattern of planting established along the boundaries of the Sites in order to contain the visual effects of built elements from surrounding public and private vantage points;
- To provide a cohesive open space framework that extends the existing open space provisions with the existing adjoining residential developments;
- To provide legible and permeable connections between adjoining development while respecting the contribution of important landscape features to the character of this area;
- "Soften" available views from adjoining residential properties at Thorpe End;
- To provide a high-quality landscape setting to the built development through the provision of a robust landscape framework, comprising of retained vegetation and supplemented with new woodland planting, street trees and pocket parks with small play facilities;
- Provision of informal open space and formal recreation in accordance with policies EN3 and RL1 of the Broadland Development Management DPD;
- To contribute to a multifunctional green infrastructure network including areas of open space, wildlife resources and effective linkages between them including connections to adjoining areas; and
- To provide ecological and amenity enhancement through the introduction of appropriate management of new tree planting, hedgerows, and meadow areas, linked to the reinforcement of existing landscape features whenever possible.

8.125 A principal landscape objective for the Site relates to the retention and positive management of existing woodland, tree belts and hedgerow features along the boundaries of the Site, particularly where this provides an established landscape framework within which the Development will become absorbed. This also assists with the visual absorption of the Development within the wider landscape.

8.126 Tree planting would be undertaken in open space areas and throughout the residential streetscape in order to increase the total tree cover established in this area. Planting would consist of a mix of locally occurring species, such as oak, alder, Scots Pine, cherry, willow, and
field maple, with an understorey of hawthorn, holly and blackthorn and complement the existing woodlands and copses in the local landscape.

8.127 The location of green corridors and green links would be considered alongside the incorporation of SuDS elements throughout the Development with ponds, attenuation basins and grass swales forming an integral landscape element associated with green space. Where attenuation basins occur in tandem with recreation corridors, the margins of these elements shall be graded no steeper than 1:7 in order to enhance their accessibility for recreation opportunities and in order to increase their contribution to visual amenity and habitat potential through the Site.

8.128 Proposed street planting would include avenue planting along the primary vehicle corridors and the margins of open space, dispersing to a more informal pattern along secondary road corridors and lanes which extend through the remainder of the Site. Entrance spaces, greens and squares would include further structural shrub and tree elements to provide green refuges throughout the urban environment and reinforce a coherent layout across the Site. This planting will assist with legibility moving through the Development and also contribute a softening effect for built elements observed from the proposed open space areas.

8.129 The proposed landscaping measures would result in the enhancement of the existing natural features on the Site and provide an attractive setting for the Development. This would complement areas of established woodland located in close proximity of the Site and assist with softening the scale and appearance of the built form where observed from the limited identified viewpoints in the surrounding area. The landscape mitigation proposals for the Site would also ensure that the Development is satisfactorily integrated into its surroundings.

8.130 The landscape mitigation measures would also conform with the guidelines for the Spixworth Wooded Estateland landscape type in the Broadland District Council Landscape Character Assessment and “seek to maintain and enhance copses of mature trees and existing robust hedgerows” through retention and enhancement of existing blocks of woodland.

8.131 In general, the proposed landscape and structural planting to be introduced across the Site will be planted in parallel with the phasing of the Development. However, where possible any planting which will not be affected by construction activities over the development period will be planted at Year 1 or before.

8.132 Wherever possible, the exterior lighting associated with the Development would comprise low level bollard lighting or be mounted on walls and buildings to reduce clutter at street level. However, where lighting columns are required along roads and paths, the fittings would utilise the horizontal cut-off lanterns to reduce the spillage of light into the open countryside areas beyond the Site and could comprise dimmed or twin lamp luminaires, switched to 50% to reduce energy use and light levels. Lighting columns and fittings would therefore be chosen to
prevent excessive light pollution at night, and the lighting layout would be carefully designed to take account of the position of existing and proposed trees on the Site to avoid future management problems.

8.133 Once established, the lighting associated with the Development would be predominantly contained by the existing vegetation on the periphery of the Site and substantial new planting. New hedgerow and tree planting would provide a further visual screen, to ensure that the lighting introduced as part of the Development would not spill out into the adjacent areas. In any event, the Site is not in an area of 'truly dark' sky given its close association with Norwich and Thorpe End.

8.134 The Development is therefore considered to comply with the Joint Core Strategy Policy 1 "to expand and link valuable open space and areas of biodiversity, to create green networks and ...seek to increase public access to the countryside" by contributing to providing a multifunctional green infrastructure network.

**Residual Effects**

**Construction**

8.135 The residual visual effects of the Development during construction are likely to be more significant than following completion, given the additional elevated equipment, movement and fragmentation of forms generated by construction activity. Whilst mitigation is considered effective in reducing the visual significance of construction effects, the following receptors are predicted to experience adverse residual effects of minor or above:

- Residential properties on the western side of Thorpe End, at Broadland Drive, Barker Way, St David’s Drive and Heath Road adjoining the Site (Major Adverse);
- Residential properties on the eastern side of Harrisons Drive and Greenborough Road including Grange Cottage on Salhouse Road (Minor Adverse to Neutral);
- Grange Farm on Salhouse Road to the north east of the Site (Moderate to Minor Adverse);
- Castle Carvery (Minor Adverse to Neutral);
- Users of Salhouse Road (Minor Adverse to Neutral);
- Listed Buildings (Neutral);
- Landscape Features (Neutral to Moderate Adverse);
- Landscape Character (Negligible to Minor Adverse); and
- Construction lighting (Moderate to Minor Adverse)
- Residential Properties at Grange Farm (Moderate / Minor Adverse);
- Landscape features – Amenity Grassland/Arable (Moderate Adverse); and
Landscape character (Minor Adverse).

Completion (Year 25)

8.136 Residual effects at completion (Year 25) identifies the effectiveness of mitigation measures used to reduce potential significant effects and reflect the time taken for the proposed landscape measures to mature. The residual effects are summarised below, with further details outlined in the Visual Effects Table included in Appendix 8.4.

Residual Visual Effects on Residential Properties

8.137 The Visual Effects Table included in Appendix 8.4 demonstrates that there will be an evident reduction in adverse visual effects associated with the Development by Year 25 after completion. Once mitigation measures have established the potential for adverse residual visual effects are predicted to reduce for most receptors. Structural planting will have matured across the Site and as such, residual adverse effects are predicted to be limited.

8.138 At this time, properties to the west and north-west of Thorpe End to the east of the Site are predicted to experience a major magnitude of change with a resulting moderate adverse significance of effect.

8.139 Residential properties on the eastern edge of Harrisons Drive and Greenborough Road including Grange Cottage on Salhouse Road; Grange Farm, other properties on Salhouse Road, White House Farm, Rackheath Hall (Grade II listed Building) and Hall Farm as well as properties on the western edge of Rackheath and properties on Plumstead Road are predicted to experience a negligible or minor magnitude of change with a resulting neutral to minor beneficial significance of effect resulting from the growth in boundary vegetation to the west to the Site.

8.140 The remainder of residential properties are predicted to experience neutral residual effects.

Residual Visual Effects on Listed buildings

8.141 Substantial blocks of woodland to the south of Rackheath Hall (Grade II listed building) curtail views towards the Site resulting in a neutral significance of effect from this location.

Residual Effects on Other Buildings

8.142 As with residential properties, residual visual effects on Other Buildings within the vicinity of the Site are predicted to reduce as planting introduced in association with the Development matures. Castle Carvery to the west of the Site is the ‘Other Building’ most likely to experience visual effects. For this receptor it is predicted that there will be minor magnitude of change with a minor beneficial significance of effect.
Residual Effect on Roads

8.143 By year 25 after completion, there will be a further reduction in adverse visual effects identified from Salhouse Road. Landscape enhancement and structural planting will soften the Development, and as vegetation matures, the effect on views will be lessened. In this context and due to the low sensitivity and transient nature of this receptor, it is predicted to result in a minor magnitude of change and a resulting neutral significance of effect.

Residual Lighting Effects

8.144 By year 25, after completion, there will be a further reduction in adverse effects identified from proposed lighting. Landscape enhancement, the development of open-space structural planting will soften development, and as vegetation matures, the effects of lighting will be significantly lessened. In this context and due to the low-medium sensitivity of the Site to new lighting sources, it is predicted that there will be a low adverse magnitude of change and a minor adverse significance of effects.

Residual Effect on Landscape Features

8.145 By year 25, it is considered that the residual effect on existing landscape features will be substantially offset by the maturity of the significant landscape measures associated with the Development. Whilst the agricultural use within the Site will be lost, the improvement in condition of retained landscape features and the establishment of substantial new areas of planting will outweigh any residual negative effects. By year 25, such features will represent a substantial net gain in terms of their contribution to the quality of the landscape with ongoing management having a notable residual effect. Accordingly, it is considered that the residual effects of the Development on landscape features after mitigation, at year 25, would represent a magnitude of change which ranges between minor negative to moderate positive change, with a negligible to moderate beneficial significance of effect.

Residual Effects on Landscape Character

8.146 By year 25, new residential and mixed use development will have become established within an enhanced network of landscape features, contributing improvements to the quality of the landscape and associated improvements in green infrastructure. Furthermore, the maturity of the proposed specimen and structural planting within the Development will help soften and assimilate built forms and create a strong landscape structure within the Site. As such magnitude of change will be minor, and therefore result in a neutral effect on the wider landscape character.
Cumulative Effects

8.147 The development of land to the south of Salhouse Road covered by the outline planning applications references 20160498 and 20160499 within the GT7 Mixed Use Allocation will result in cumulative effects when considered alongside the Development given the proximity of the Sites as illustrated by Figure 8.1 Site Context Plan.

Cumulative Visual Effects

8.148 The cumulative visual effects of the combined development will largely reflect the visual effects for development of the other application Sites within the GT7 allocation, with the exception of visual effects of receptors on the western edge of Thorpe End which will experience visual effects of the Development.

8.149 The Development of the other application Sites within the GT7 allocation will result in visual impact from locations overlooking the those sites on the southern side of Salhouse Road to the east and west of the Site with major magnitude and major adverse significance before mitigation. From these locations the Site is not currently visible and will be further screened from view by development of other application Sites within the GT7 allocation Development. The cumulative impact from these locations would also be of major adverse significance before mitigation. Strengthening of the existing and proposed vegetation on the northern boundary and within the Sites will soften the appearance of the new development as it matures resulting in a residual significance of effect of moderate adverse.

8.150 From Salhouse Road, directly to the north of the Site at Eastgate Place Business Centre, the magnitude of visual change is considered to be major as a result of the Development with moderate adverse significance. The cumulative effect from this location with development of other application Sites within the GT7 allocation will also be major, with moderate significance. Proposed vegetation on the northern boundary and within the Sites will soften the appearance of the Development as it matures resulting in a residual significance of effect of moderate/minor adverse.

8.151 In views from the eastern edge of Harrisons Drive and Greenborough Road to the west of the Site the magnitude of change as a result of the Development on other application Sites within the GT7 allocation will be major with major adverse significance before mitigation. The Site is largely screened behind the belt of woodland which will be retained. During construction in winter months it may be possible to view activity beyond or above the tree belt depending on the timing of phasing of construction activity. The cumulative impact from this location would also be of major adverse significance before mitigation. Strengthening of the existing and proposed vegetation on the western boundary will soften the appearance of the Development as it matures resulting in a residual significance of effect of major/moderate adverse.
8.152 The magnitude of visual change in views from the edge of Thorpe End as a result of the Development is considered to be major with a major adverse significance before mitigation. The Development of other application Sites within the GT7 allocation will be screened behind the tree belt to the north separating it from the Site. During construction in winter months it may be possible to view activity beyond or above the tree belt depending on the timing of phasing of construction activity. The cumulative effect from this location would be of major adverse significance. Strengthening of the existing and proposed vegetation on the southern and eastern boundaries with Thorpe End and within the Site will soften the appearance of the Development as it matures resulting in a residual significance of effect of major/moderate adverse.

8.153 The effect on views from Grange Farm as assessed for the Development will be negated in the cumulative assessment as this property will be absorbed by the Development other application Sites within the GT7 allocation.

8.154 The effect of the development of other application Sites within the GT7 allocation on views from the properties to the north of Grange Farm will be of major magnitude with major adverse significance before mitigation. The cumulative effect will be the same considering that the Development constitutes a minor magnitude of change and minor significance from this location. Proposed vegetation on the northern boundary and within the Sites will soften the appearance of the Development as it matures resulting in a residual significance of effect of major/moderate adverse.

8.155 From locations on Salhouse Road to the east the Site, south of Pigs Park, development of other application Sites within the GT7 allocation will result in visual impact considered to be of medium magnitude and moderate adverse significance before mitigation. The cumulative effect will be of moderate adverse significance before mitigation from these locations as the Site is not currently visible and will be further screened from view by development of other application Sites within the GT7 allocation. Proposed vegetation on the northern boundary and within the Sites will soften the appearance of the Development as it matures resulting in a residual significance of effect of moderate/minor adverse.

8.156 From the western edge of Rackheath, the Development of other application Sites with the GT7 allocation will result in visual effects of minor magnitude and minor adverse significance. The cumulative effect will reflect this evaluation as the Development will not be visible. Proposed vegetation on the eastern boundary of the Development area will soften the appearance of the Development as it matures resulting in a negligible residual significance of effect.

8.157 From Salhouse Road, to the west of the Site between Harrisons Plantation and Castle Carvery, the magnitude of visual effects for the development of other application Sites with the GT7...
allocation is minor due to the dense roadside vegetation and existing buildings at Castle Carvery and Eastgate Place with minor neutral significance. The cumulative effect will reflect this evaluation as the Development will not be visible. The cumulative residual effect on maturity of vegetation will be minor adverse/neutral.

*Cumulative Effects on Landscape Features*

8.158 Both Developments will reinforce existing landscape features proposed to be retained and introduce a number of new positive landscape features at completion that will help offset the loss of landscape features during construction.

8.159 The majority of existing hedgerows tree belts and woodland are proposed to be retained within the Site and around its boundaries however the loss of hedgerows within the other application Sites with the GT7 allocation will result in a major adverse effect upon this landscape feature overall. The retention and enhancement of tree belts within the Development, and inclusion of zones for strategic landscaping will result in a low and medium positive magnitude of change and a minor and moderate beneficial significance of effect. Grassland and arable land will be lost throughout both Sites, however amenity grassland will be reinstated within the provision of informal and formal open space. At completion, such development is considered to help improve the condition and quality of landscape features represented in the local landscape and help offset the effect of landscape features removed. There will be enhancement of wetland systems including the provision of SuDS throughout the Development, which will result in a minor beneficial significance of effect. In this context, the Development is predicted to result in an overall major negative to low positive magnitude of change and a moderate-major adverse to minor beneficial significance of effect on landscape features.

*Effects on Landscape Character*

8.160 The local level landscape character area with potential to experience landscape effects is the Spixworth Wooded Estatelands within the South Norfolk Landscape Character Assessment. The impact of the combined development on this receptor is considered to affect a broad area from the existing edge of Norwich to the north of Thorpe End.

8.161 The key landscape features which contribute to the character of the landscape will be retained and their quality enhanced through the provision of a comprehensive network of green infrastructure and ongoing management. Views towards the wider Development from Salhouse Road, the edge of Norwich and Thorpe End will be affected.

8.162 There will be a change from semi-rural to urban landscape within the combined Site. Key elements of the existing landscape structure will be retained including the majority of hedgerows/tree belts retained along internal green corridors and along the boundaries.
The change in character of the cumulative development will result in a medium magnitude of change and represent a moderate adverse significance of effect at completion, for local level character areas.

Summary

The Site comprises land immediately abutting the existing settlement of Thorpe End in the context of the existing north-east fringes of the settlement of Norwich.

Although the land subject to development would change in character, the key landscape features that contribute to the character of the surrounding landscape would be retained, maintaining a physical and visual enclosure of substantial vegetation which contains the potential visual effects of development from surrounding areas of countryside. The impact of the Development on the character of adjacent areas would be minimised by the proposed landscape strategy which reinforces existing landscape features that contain available views and achieves a cohesive open space framework that reinforces the representation of planting characteristic of the wider Spixworth Wooded Estateland.

The findings of the visual appraisal conclude that visibility from surrounding areas towards the Site is very limited, primarily due to the existing surrounding vegetation, vegetation in the wider landscape and existing development along Salhouse Road and at Thorpe End. Open views are available into the Site from the western edge of Thorpe End; views from the countryside areas beyond and from the eastern edge of Norwich are largely curtailed by vegetation along the boundaries of the Site and woodland, hedgerows and tree belts beyond the boundaries of these Sites. This vegetation provides a substantial development edge and with the enhancement and creation of new landscape elements will successfully create a sympathetic edge between the Site and adjoining areas of housing and agricultural land. The total number of properties and roads that will be adversely affected to a significant degree is limited.

In this context, it is considered that the Site remains physically and visually contained and does not result in ribbon development or a fragmented pattern of development that extends into open areas of rural countryside. Rather it is part of an allocated site which will form part of a planned mixed use development area. It is considered the Site is able to suitably accommodate change and absorb built development without resulting in significant adverse impacts.

Given the limited public viewpoints from within surrounding areas of countryside and the limited contribution of the Site with regard to the landscape setting on the north eastern edge of Norwich, the Development is considered to avoid any significant harm to the character of the landscape.
8.169 Overall, the detailed assessment demonstrates that the Site is capable of absorbing or accommodating the Development without significant adverse landscape or visual impacts. Whilst the character within the Site would change, the enclosed nature of the Site in combination with the screening and context provided by existing features and forthcoming landscape proposals along their boundaries, would effectively limit the visual impact of the Development from surrounding areas. The Development therefore promotes a reinforced landscape setting without resulting in significant harm to surrounding areas of open countryside.

8.170 A summary of the significant effects outlined in this chapter is included in Table 8.4.
### Table 8.4: Table of Significance – Landscape and Visual Effect

<table>
<thead>
<tr>
<th>Potential Effect</th>
<th>Nature of Effect (Permanent/Temporary)</th>
<th>Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)</th>
<th>Mitigation / Enhancement Measures</th>
<th>Geographical Importance*</th>
<th>Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual effect on Properties on the western side of Thorpe End, at Broadland Drive, Barker Way, St David's Drive and Heath Road adjoining the Site</td>
<td>Temporary</td>
<td>Major Adverse</td>
<td>Compliance with BS 5837:2012 (Trees in relation to design, demolition and construction) recommendations</td>
<td>*</td>
<td>Major Adverse</td>
</tr>
<tr>
<td>Visual effect on residential properties on the eastern edge of Harrisons Drive and Greenborough Road including Grange Cottage on Salhouse Road</td>
<td>Temporary</td>
<td>Minor Adverse</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Visual effect on residential properties at Grange Farm on Salhouse Road to the north east of the Site</td>
<td>Temporary</td>
<td>Moderate Adverse</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Visual effect on Castle Carvery</td>
<td>Temporary</td>
<td>Minor Adverse</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Visual effect on users of Salhouse Road</td>
<td>Temporary</td>
<td>Minor Adverse - Negligible</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Visual Effects on Listed Buildings</td>
<td>Not applicable</td>
<td>Neutral</td>
<td></td>
<td></td>
<td>Neutral</td>
</tr>
<tr>
<td>Landscape effects on Site landscape features (grassland/ woodland and hedgerows/ wetland)</td>
<td>Permanent</td>
<td>Neutral to Moderate adverse</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Landscape effects upon national and district landscape character areas</td>
<td>Temporary</td>
<td>Negligible- minor adverse</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Effects of Construction Lighting on surrounding receptors</td>
<td>Completed Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>-----------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary Moderate adverse</td>
<td>Permanent Major/Moderate Adverse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Planting of a hedgerows and tree boundary on the eastern boundary of the Site will soften the Development over time. A maximum 2 storey height and inclusion of substantial areas of open space in this south eastern part of the Site will mitigate for the loss of the perception of open space from these properties.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permanent Negligible Adverse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strengthening of the existing vegetation on the western boundary of the Site will further enclose views from this location.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permanent Moderate-minor adverse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strengthened boundary vegetation on the eastern edge of the Site will become established over time and by year 25 will screen development within the Site.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permanent Neutral</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New boundary planting on the northern part of the Site</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permanent Minor adverse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>On completion buildings within the Site may be visible from part of the carpark and upper story windows, these views will be softened over time as boundary vegetation matures.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permanent Minor Adverse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New boundary planting on the northern part of the Site will</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Moderate/Minor adverse

* Neutral

* Minor beneficial
### Landscape and Visual Effects

<table>
<thead>
<tr>
<th>Effects of Operational Lighting on surrounding receptors</th>
<th>Permanent</th>
<th>Minor Adverse</th>
<th>Low level bollard lighting. Horizontal cut off lanterns to reduce spillage of light. Dimmed and twin lamp luminaires. Lighting contained by existing vegetation</th>
</tr>
</thead>
</table>

| Landscape effects on Site landscape features (grassland/ woodland and hedgerows/ wetland) | Permanent | Moderate adverse (trees and woodland)– minor beneficial (wetlands) | Retention of important green corridors which will enable the Development to retain habitat links to the surrounding countryside. Enhanced hedgerows / tree belts where existing gaps will be filled providing a visual buffer surrounding the Development. Over time this will provide additional habitats and will enable the Development to assimilate into the urban edge of Norwich and the surrounding countryside. Ditches will be enhanced by planting proposals, and the Development of SuDS system throughout the Development will enhance and create new wetland habitats throughout the Site, and provide new habitats and improved biodiversity links. These habitats will result in greater connectivity within the Site. |

| Landscape effects upon landscape character areas | Permanent | Minor adverse | In relation to landscape effects, the Site will retain its primary landscape framework and will improve upon this over time when planting proposals mature providing a strong relationship with the urban edge of Norwich |

---

20976/A52ES20167

January 2017
### Cumulative Effects

| Construction | Visual effect on properties on the southern side of Salhouse Road to the east and west of the Site | Temporary | Major adverse | Compliance with BS 5837:2012 (Trees in relation to design, demolition and construction) recommendations | * | Moderate adverse |
|--------------|------------------------------------------------------------------------------------------------|----------|---------------|-----------------------------------------------------------------------------------------------| * | Moderate adverse |
| Visual effect on Salhouse Road, directly to the north of the Site | Temporary | Moderate adverse | Property will be removed under development of other application. |                                      | * | Moderate adverse |
| Visual effect on Residential properties the eastern edge of Harrisons Drive and Greenborough Road to the west of the Site | Temporary | Major adverse | * | Moderate adverse |
| Visual effect on Residential properties overlooking the Site on the western edge of Thorpe End | Temporary | Major adverse | * | Major/moderate adverse |
| Visual effect on Residential properties at Grange Farm | Temporary | Major adverse | * | Major adverse |
| Visual effect on Residential properties to the north of Grange Farm | Temporary | Major adverse | Major/moderate adverse | |
| Visual effect on Salhouse Road, to the east of the Site, south of Pigs Park. | Temporary | Moderate adverse | * | Moderate/minor adverse |
| Visual effect on Residential Properties on the western edge of Rackheath | Temporary | Minor adverse | * | Minor adverse |
## Landscape and Visual Effects

<table>
<thead>
<tr>
<th>Visual effect on Salhouse Road, to the west of the Site</th>
<th>Temporary</th>
<th>Minor adverse</th>
<th></th>
<th>*</th>
<th>Minor adverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effects on Landscape Features</td>
<td>Temporary</td>
<td>Moderate/major adverse</td>
<td>*</td>
<td>*</td>
<td>Moderate adverse</td>
</tr>
<tr>
<td>Effects on Landscape Character</td>
<td>Temporary</td>
<td>Moderate adverse</td>
<td>*</td>
<td>*</td>
<td>Moderate/minor adverse</td>
</tr>
</tbody>
</table>

### Operation

| Visual effect on properties on the southern side of Salhouse Road to the east and west of the Site | Permanent | Major adverse | Strengthening of the existing and proposed vegetation on the northern boundary and within the Sites will soften the appearance of the new development as it matures. | * | Moderate adverse |
| Visual effect on Salhouse Road, directly to the north of the Site | Permanent | Moderate adverse | Proposed vegetation on the northern boundary and within the Sites will soften the appearance of the new development as it matures. | * | Moderate/minor adverse |
| Visual effect on Residential properties the eastern edge of Harrisons Drive and Greenborough Road to the west of the Site | Permanent | Major adverse | Strengthening of the existing and proposed vegetation on the western boundary will soften the appearance of the new development as it matures. | * | Moderate adverse |
| Visual effect on Residential properties overlooking the Site on the western edge of Thorpe End | Permanent | Major adverse | Strengthening of the existing and proposed vegetation on the southern and eastern boundaries with Thorpe End and within the Site will soften the appearance of the new development as it matures. | * | Major/moderate adverse |
| Visual effect on Residential properties at Grange Farm | Permanent | Major adverse | Property will be removed under development of other application Sits within the GT7 allocation | * | Major adverse |
| Visual effect on Residential properties to the north of Grange Farm | Permanent | Major adverse | Proposed vegetation on the northern boundary and within the Sites will soften the appearance of the new development as it matures. | * | Major/moderate adverse |
| Visual effect on Salhouse Road, to the east of the Site, south of Pigs Park. | Permanent | Moderate adverse | Proposed vegetation on the northern boundary and within the Sites will soften the appearance of the new development as it matures. | * | Moderate/ Minor adverse |
| Visual effect on Residential Properties on the western edge of Rackheath | Permanent | Minor adverse | Proposed vegetation on the eastern boundary of the development area will soften the appearance of the new development as it matures. | * | Negligible |
| Visual effect on Salhouse Road, to the west of the Site | Permanent | Minor adverse | Proposed vegetation on the northern boundary and within the Sites will soften the appearance of the new development as it matures. | * | Minor adverse/ negligible |
| Effects on Landscape Features | Permanent | Moderate/major adverse | Enhanced hedgerows / tree belts where existing gaps will be filled providing a visual buffer surrounding the Development. Over time this will provide additional habitats and will enable the Development to assimilate into the urban edge of Norwich and the surrounding countryside. Ditches will be enhanced by planting proposals, and the development of SuDS system throughout the development will enhance and create new wetland habitats throughout the Site, and provide new habitats and improved biodiversity links. These habitats | * | * | * | Moderate/Minor Adverse – Minor Beneficial |
In relation to landscape effects, the Sites will retain their primary landscape framework and will improve upon this over time when planting proposals mature providing a strong relationship with the urban edge of Norwich and linkages to surrounding countryside.

* Geographical Level of Importance

I = International; UK = United Kingdom; E = England; R = Regional; C = County; B = Borough; L = Local
References

3. Greater Norwich Development Partnership, Adopted 2011 (amendments adopted 2014) *Joint Core Strategy for Broadland, Norwich and South Norfolk*

N. British Standards Institution (2012) *BS 5837: 2012 Trees in relation to design, demolition and construction*