

Proposed Housing Development
Land north of Hoveton, Norfolk

Landscape and Ecology
Strategy

July 2008



**ANGLIA
SURVEY
& DESIGN**

BOYER PLANNING
ENVIRONMENTAL PLANNING AND DEVELOPMENT CONSULTANTS



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Landscape and Ecology Strategy

for

Persimmon Homes

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1 Introduction

1.1 LDF promotion

- 1.1.1 Persimmon Homes, with Boyer Planning as lead and planning consultants, are pursuing development of a Site in Hoveton through the forthcoming Core Strategy and Site Specific Local Development Documents. The Landscape Partnership was commissioned to undertake ecological and landscape appraisal of the Site and its surroundings, and to assist in the preparation and submittal of Masterplan proposals to demonstrate the suitability of the site for development through the LDF process.
- 1.1.2 The Core Strategy submission published by North Norfolk District Council identifies Hoveton as being an appropriate location for the development of new dwellings. In 2006 the local authority published their preferred options for Site Specific Proposals which identified sites that should be developed in order to achieve the aims of the Core Strategy, Area HV01, which forms part of the Site, was amongst those named as suitable.
- 1.1.3 This study assessed the area around HV01 and developed an alternative site proposal. This area of land was identified as presenting an opportunity not only to meet a local housing demand, but also as a means of providing increased areas of public open space and public access, in perpetuity, for the benefit of the community.
- 1.1.4 This landscape and ecological strategy was prepared to assist in the masterplanning process to identify constraints and opportunities and allow them to be considered in the masterplanning process. The assessments were prepared through a combination of desk-top assessment and fieldwork using the standard assessment guidelines of the Landscape Institute and the Institute of Ecology and Environmental Management.
- 1.1.5 The objectives of the assessments were to:
- identify areas or features of particular ecological or landscape value in the study area
 - identify any potential ecological or landscape opportunities and constraints
 - present information, in conjunction with other disciplines, to inform the emerging design
 - complete an assessment of the likely impacts from potential development
 - present the findings in the form of a supporting document to be submitted to NNDC
- 1.1.6 The subsequent aim was to develop a Masterplan for an, approximately, 150 dwelling development with associated open space. The objectives were to:

- minimise landscape impacts and destruction of landscape or vegetative features
- minimise visual impacts on receptors in the surrounding area
- maximise links and access to integrate the Site with the surrounding countryside and village landuses
- provide an appropriate access point from the Stalham Road
- minimise damage to ecological assets and look for opportunities to enhance biodiversity
- integrate access and recreation for local people.

2 Site context

2.1 Site description

- 2.1.1 The study area lies immediately to the north of Hoveton village and comprises farmland, currently entirely under arable use. On the basis of the assessments, a site 8ha in size was selected from within a larger parcel of land (the study area) 22.5ha in size which stretches from the Stalham Road to the east to Tunstead Road to the west. The study area bounds a small number of properties, the medical centre and the High School to the south, which together currently form the northern edge of the existing settlement. To the north, it bounds open countryside. Access would be provided from the Stalham Road along the eastern side of the Site. Refer to Figure 01 for the Site location and to Figures 03 and 04 for a selection of illustrative Site photos.
- 2.1.2 The 22.5ha study area comprised farmland divided into 3 arable fields. It is flat, (between 12 and 14m AOD) and is largely featureless except for a number of mature oak trees (that appear to be in good condition) that punctuate the field boundaries, sometimes on raised banks. There is a dense, continuous hedge in good condition along the western side, next to Tunstead Road. There is a tall mixed native hedge along part of the eastern side of the study area, next to a drainage ditch. Along the boundary with the settlement there are a number of trees, some scrub and a few lengths of coniferous ornamental hedge that enclose private gardens. The sports field of the High School abuts the assessment area along a central stretch of the village boundary.
- 2.1.3 The village of Hoveton lies eight miles to the north-east of Norwich, and to the north of Wroxham, with which it has merged over the years to form a continuous large village settlement which, at the time of the 2001 Census, had a population of 3,128. Hoveton and Wroxham developed as a result of tourism associated with the Norfolk Broads and tourism remains a key influence in the area.
- 2.1.4 Hoveton is served mainly by the main A1151 Stalham road which bounds the Site to the east and that provides direct access in and out of Norwich. The village is also served by the National Express Bittern Line services between Norwich and Cromer/Sheringham.

3 Landscape and visual assessment

3.1 Methods

3.1.1 Landscape and visual impacts were assessed separately following the principles of the methodology in 'Guidelines for Landscape and Visual Impact Assessment' 2002¹.

3.1.2 An outline assessment was carried out by a Chartered Landscape Architect from The Landscape Partnership using a combination of desktop study and field survey. The landscape was assessed for its ability to withstand change without undue impact on its character and its subsequent capacity to accommodate a development of the form proposed. Additionally, the study considered impacts on landscape or heritage features or on designated landscapes. Key visual receptors with views of the Site were identified and the significance of the changes to these views were assessed. (The assessment took into account only the impact of the constructed development and did not consider impacts that might arise during construction, although it did consider any additional effects mitigation features might have, once mature vegetation became established).

Landscape Assessment Methodology

3.1.3 The landscape impacts were judged through an assessment of the character of the landscape around the Site. Character areas were defined and briefly described, and judgments about their sensitivity to change were made. Any relevant landscape designations were taken into account when defining sensitivity. The definitions used to assign sensitivity are set out in Appendix 1 - table A1.

3.1.4 The next step of the assessment was to judge the likely magnitude of the impact to the landscape as a result of the development. The magnitude was judged by considering the likely degree of change against the capacity of the character area to absorb that change. The change was considered either positive or negative. The criteria for assessing magnitude are set out in Appendix 1 - table A2.

3.1.5 Finally, the significance of the landscape impacts was considered. This is a function of landscape sensitivity against the magnitude of impact. The table showing how impact significance was assessed is set out Appendix 1 - table A3.

Visual Assessment Methodology

3.1.6 The visual impacts were assessed separately. Through field work, key locations were identified in the surrounding area, where visual change was considered a likely effect of the development. During the site visit, a number of visual receptors experiencing views of the Site were identified; these comprised residential properties, highways and public footpaths.

3.1.7 The second stage of the assessment was then to define the visual sensitivity of each key receptor. The definitions and criteria used to make this judgement are set out in Appendix 1 - table A4.

3.1.8 The magnitude of the likely visual impact was assessed from each viewpoint to compare the existing view with that likely to arise as a result of the development. The magnitude was judged using the criteria set out in Appendix 1 - table A5.

3.1.9 The final stage of the assessment was to work out the significance of the impact upon each visual receptor. This is a function of receptor sensitivity and the magnitude of impact. The table showing how impact significance was derived is set out Appendix 1 - table A6.

¹ Guidelines for Landscape and Visual Impact Assessment' Landscape Institute and IEMA. 2002

- 3.1.10 An initial desktop study was carried out to identify landscape and relevant designations, heritage features and footpaths within a 2km radius; these are illustrated on Figure 02. The Site is not within any designated landscape although it falls within the Area of High Landscape Value (Policy 21, saved) in North Norfolk District Council's Local Plan.
- 3.1.11 Site visits were undertaken in October and November 2007 to establish the significant and subtle landscape features, both in the countryside and adjacent urban settings, identify sensitive receptors and key viewpoints, current public access and opportunities for improvement. These were assembled to form a baseline against which to assess visual change and effects on landscape character. On the first visit the weather was clear and sunny, but was overcast on the second visit. A photographic record was kept of the key views. See Figure 04.

3.2 Landscape Assessment

National landscape character context

- 3.2.1 In the "Countryside Character Assessment for England and Wales", published by the Countryside Commission, Hoveton falls within Character Area 80 'The Broads'. This is an irregularly shaped area comprising the tributaries and the floodplains of the Waveney, Yare and Bure rivers. The Site occupies a position on the edge of this character area, close to the boundary with Area 78 'Central North Norfolk' and so demonstrates a somewhat transitional character.

- 3.2.2 The key characteristics of 'The Broads' include:

Mixed character but predominantly open water, fens, grazing marshes and carr formed artificially from a low lying complex of former peat workings.

Upper reaches of valleys woodland, copses and hedgerows give an intimate pastoral character.

Little vernacular character remains in settlements which are sparse and occupy higher ground. They tend to be tourist oriented and very busy in summer. Rest of landscape is isolated and remote.

Water ways often concealed by carr woodland.

- 3.2.3 However, the distinguishing characteristics of the Broads Area are not really evident around the Site and exert little influence, despite the relatively short distance to the watercourses. Instead, the area feels more contiguous with the flat, arable-dominated, enclosed farmland characteristic of land to the west. This is the 'Central North Norfolk' character area where the characteristics comprise flat terrain, incised by shallow river valleys. The area is very rural with a long settled agricultural character interspersed by woodland and heath. Some areas are characterised by dense hedges and hedgerow oaks. Field enclosure is often regularly spaced oak trees with wooded horizons, a characteristic which is locally distinctive north of Hoveton.

District level character assessment

- 3.2.4 At the district level in the North Norfolk character assessment study, Hoveton is in 'Randomly Enclosed Low Plain Farmland' character area ². The key characteristics are:

A landscape with an open character with long, uninterrupted views with a

² The Landscape Character Assessment for North Norfolk District Council Local Development Framework: Draft Version 2005

predominantly rural, and on the whole peaceful, character apart from areas adjacent to the A149, and in and around the urban areas

The landform is on the whole either flat or very gently undulating, which falls away towards the river valleys and areas of marshland

The land use is predominantly arable, with areas of localised rough grazing close to the river valleys and Broads, with medium to large sized fields

Field boundaries on the whole consist of low grass banks due to widespread hedge removal, however there are areas with high hedges, which results in localised enclosed areas

The skyline is very prominent for the most part in this character area, due to the large expanses of open, uninterrupted landscape. It is punctuated by many belts of trees, areas of woodland, and isolated trees. Some of these isolated trees are all that remain of the removed hedgerows

Prominent features in the landscape, which can often be seen on the horizon, include church towers and more unusual structures such as the Trimmingham dome, along with modern agricultural buildings

Views are generally uninterrupted, and aside from the structures detailed above, large expanses of this character area are relatively vacant/empty.

- 3.2.5 At the district level the Site is within the area covered by Policy 21 of the North Norfolk Local Plan (saved) – Area of High Landscape Value. A significant proportion of the eastern half of the North Norfolk District is covered by this policy which recognises the special character and qualities of the landscape. The policy directs that in areas covered by the policy the “*appearance and character.....will be conserved and enhanced. Development proposals that will be significantly detrimental to its appearance or character will not be permitted*”³

Local Landscape Character

- 3.2.6 The Site is on a low, flat ‘plateau’ north of the River Bure and Wroxham Broad. The village screens the Site from the Bure so there is little clue of the presence of the river valley, and surrounding woodland and vegetation encloses the Site and conceals wider patterns of topography.
- 3.2.7 The Site itself has a somewhat transitional character – influenced by both the village edge to the south and east, and the enclosed farmland to the north. The enclosed farmland is flat with contours between 14 and 10m AOD. Land use is arable and field sizes are medium to large, on the whole, and fairly regular in shape. Along roads and lanes there are hedges and tree belts but there are few internal field hedges. However, there are oak trees at regular intervals, remnants of previous field boundary hedges. Sometimes, these are on raised banks that divide the fields. The District Character Assessment notes that there has been much widespread hedge-removal in the area, although hedges still remain along the lanes, and there is also some planting of new hedgerows in some places. This combination of arable farming and low grassy banks in place of hedges contributes appreciably to the overall character of this area.

Townscape and historic influences

- 3.2.8 Hoveton St John was a small village in the late 1800’s and it expanded, along with Wroxham, in the 20th century in response to the growing recreational value of the Broads and access to them around Wroxham. The two farming villages were transformed from late Victorian times when boats began to be hired out from Wroxham for a growing holiday market that took off in the Broads in the 1920s and 30s. Hoveton means ‘hill by the water’.
- 3.2.9 Today, the two settlements lack a separate identity and are experienced as a single ribbon-like settlement spread out along the A1151. Hoveton has also expanded along the crossroads where routes lead to Coltishall in the west and Ludham in the east. The heart of the village lies to the south but it doesn’t really have a nucleus as such, the area around the ‘Roys’ complex tends to act as the village centre, albeit a very commercial one with a retail hinterland vastly exceeding that of most Norfolk villages. Hoveton and Wroxham remain popular because of their proximity to Wroxham Broad which is a key access point into the wider Broads area, and the villages are dominated by the associated recreational activities.

³ NNDC Local Plan saved policy. April 1998

- 3.2.10 The character of the village around the Site is somewhat suburban and has much in common with suburbs on the outskirts of Norwich. This is due to the ribbon-like form of the settlement and the age of the housing which dates predominantly from the middle and latter half of the 20th century, with few earlier buildings evident. The houses are a mix of bungalows, semi-detached, and detached houses of mixed post-war style. Gardens are often large and houses are set back from the road in grounds, often behind hedges. Therefore, mature garden vegetation contributes to the character of the area, particularly the edges, and helps the village be absorbed into the landscape.
- 3.2.11 Historical and cultural influences within the area include references to Humphrey Repton. Hoveton Hall, 1.2km to the north, is listed as a Historic Park and Garden in the North Norfolk Local Plan (although is not registered as such with English Heritage). The landscape around the Hall (built between 1809 and 1812) is attributed to Humphry Repton. The parkland surrounding the Hall was ploughed in the 1940's to provide food during the war years. Most trees were removed, and only the grass on the North side of the Lake left untouched. In 1993 the then arable parts of the park were resown with grass, under the Countryside Commission Scheme for the Restoration of Historic Parks⁴. St Peter's Chapel, a small thatched red-brick building due north of the Site, is a focal point and cultural point of interest to which the development of the Site could respond.

Assessment of landscape impacts

- 3.2.12 In summary, the landscape around north Hoveton partly displays the district level characteristics described above, although around the Site, the vacant openness and long views are not experienced. Instead, the landscape is well enclosed by the well defined village edge, tree belts and hedges on all sides resulting in a landscape less sensitive to change than it otherwise might be; the sensitivity value would be considered *low*. This localised enclosure means that the effects of a development would be restricted and would be unlikely to impact the wider landscape, although locally the magnitude of the effect would be considered *moderate* at first. These factors combine to generate a significance rating of *low*. In time, as screening vegetation matures around the Site, the development would become well absorbed into the landscape and the magnitude of the effect would decrease to *slight*. The significance of the impact therefore, after 15 years, would decrease to *negligible*. The landscape would, therefore, be considered to be robust and have capacity to absorb a housing development of the size envisaged without undue impact to its character, provided key landscape features and key views are retained and appropriate screening vegetation belts are incorporated into the design.
- 3.2.13 There would be no significant detrimental effects on nationally designated landscapes, Listed Buildings, or heritage features except for a minor incursion on the setting of St. Peter's chapel. The chapel overlooks the Site but at a distance of at least 500m. From the chapel, the new houses may impact adversely on the view at first, although in time screening planting would grow up to mitigate this effect. The view from the chapel is already of a somewhat poor village edge composition so the impact of further houses and rooftops, within vegetation, would be limited and could become an improvement.
- 3.2.14 One minor detrimental landscape effect would be the predicted loss of a section of hedgerow along the eastern Site boundary where the new access point is proposed. The intention would be to ensure that the section removed is as short as possible and that considerably more new hedge would be planted as part of the development, than would be removed; mitigating impacts of the hedge removal is discussed further in the Ecological report.

⁴ Information from <http://www.hovetonhallgardens.co.uk/>

3.3 Visual Assessment

- 3.3.1 As outlined above, the Site benefits from being in an enclosed landscape so the visual effects of development within it would be limited in extent. The village to the south and east, and vegetation to the west and north ensure that long views in or out of the Site are not possible. There are few viewpoints into the Site from any direction other than from the Stalham Road to the east.
- 3.3.2 To the north and west the horizon is relatively proximate and is formed by tall tree belts. Areas of older deciduous woodland associated with Hoveton Hall, and more recent tall belts of conifers bound St. Peter's Lane along the north side and create a strong edge feature which prevents longer views in or out of the Site. Similarly, the hedge to the west curtails any longer views, probably even in winter, because it is a dense and substantial feature.
- 3.3.3 To the south the village contains views out of the Site; the vegetated margins and school playing field mean that the village itself is contained and screened. From the Site, only occasional glimpses of roofs are seen between tree cover, in winter the framework of branches still offer considerable screening. As the village is on land that is sloping gently away, more extensive views are not possible.
- 3.3.4 To the east, views into the Site are obtained from a number of houses that face onto Stalham Road, and also from those people travelling along it. These houses screen any longer views out of the Site to the east, and prevent any glimpses beyond into the wider countryside.
- 3.3.5 The area within which potential receptors would experience visual change is therefore well defined and limited to a rectangular area contained by the village edge to the south, Stalham Road to the east, Tunstead Road to the west and St. Peter's Lane the lane to the north.
- 3.3.6 Within this area there are relatively few sensitive visual receptors that would experience significant change owing to the prevalence of bungalows in the vicinity, location of the school playing fields, and tree cover. Existing dwellings tend to be arranged lineally, facing onto the roads, and few have views over the surrounding countryside; there are only two properties along the southern boundary that would have very direct views of development on the Site.
- 3.3.7 Some of the most direct views would be achieved from one bungalow on Summer Drive, which unlike its neighbour, does not have the benefit of a screening hedge along its frontage. This property currently has uninterrupted views across open farmland to the woodland belt to the north.
- The sensitivity of dwellings is considered *high*. This bungalow would experience the greatest degree of visual change as it directly overlooks the Site at close distance. The magnitude of the effect would be considered *moderate adverse*. The significance of this would therefore be *medium-high*. The Masterplan should seek to minimise effects on this property through careful site planning, provision of open space in front of the dwelling, and provision of screening planting. In time the effects would diminish.
- 3.3.8 To the east, a number of properties along Stalham Road overlook the Site. These dwellings view farmland across the Stalham Road, the view is contained by the high hedge along the Tunstead Road to the west. Although the view is predominantly of farmland, the existing village edge is apparent with rooftops and glimpses of properties experienced within the view. The skyline is broken up by the row of oak trees in the middle distance.
- The sensitivity of dwellings is considered high. The magnitude of the effect from these dwellings would be considered *moderate adverse*. Overall, the significance of the impact would therefore be *medium-high*. However, the

Site frontage is set behind a green 'wedge' that has been designed into the layout to help reduce the impact on these dwellings and ensure that the edge of the development is soft and in keeping with the village-edge context. The green space here will provide opportunities to plant native stature trees to screen the development and help it integrate with its surroundings. Over time, with the growth of planting along the site frontage, the magnitude of the effect and the significance of the impact would decrease.

3.3.9 A comparable degree of change would be experienced by traffic heading south on the Stalham Road.

- The sensitivity of receptors on highways is considered low. So, although the magnitude of the effect would remain *moderate adverse*, the significance of the impact would be considered *low*. The measures described above to mitigate effects on the properties along Stalham Road would also help mitigate effects on those travelling past the Site.

3.3.10 From the west, views into the Site are generally not possible, in summer at least, because of the tall, dense (although deciduous) hedge to the west. There is a break in the hedge close to Two Saints Farm, which allows an oblique view from one window, but at some distance – 300m.

- Sensitivity of receptor – *high*. Because of the distance involved, the provision of screening planting and the fact that the view is not direct, the impact magnitude would be considered *negligible*. The significance of the impact would therefore also be considered *negligible*.

3.3.11 The other main receptors would be the users of the footpath along the Site's southern edge, particularly on the approach from the west.

- The sensitivity of those using rural public footpaths is considered *high* as people are primarily using footpaths for the enjoyment of the countryside and to appreciate local views. The impact magnitude would be considered *slight adverse* and the impact significance therefore *medium-low*. Although the new dwellings will be an obvious and significant addition to the views, housing is currently part of the local context and is not novel or out-of-place. Whilst the presence of new housing within the views may detract from the experience of a rural walk, the development offers the opportunity to significantly enhance the amount of public open space and footpath routes available to local residents. As well as improving existing access, new routes along the tree lines are proposed which would make a very positive contribution to improving recreational access and ensure that some of the important longer views are retained and enhanced.

3.4 Conclusions

3.4.1 There are a small number of sensitive receptors that will experience visual change as a result of the development; however, the nature of that change does not generate significant impacts. The development will fit into an existing village edge context where roofs and dwellings are seen on all sides. To minimise the effects and help the development become quickly absorbed into the landscape it will be important to retain existing vegetative features, where possible, and integrate mitigation measures such as screening belts and inclusion of new stature trees to break up roof lines. The layout of the new development must strive to reflect the local landscape and townscape character and retain some of the longer views that are currently experienced. This can be achieved through designing in green corridors and sensitive treatment of the edges of the development.

- 3.4.2 Overall, it is not considered that this development represents a significant impact either to the landscape or local views; only a relatively small number of visual receptors are likely to be affected and overall effects are very limited in extent. The contained nature of the landscape means effects on the wider area will not be experienced. With appropriate design measures the development can be well absorbed; in time the effects would be considered very minor, especially with the growth of screening planting around the periphery and structure planting within the development.
- 3.4.3 The addition of new local footpaths under the existing oaks giving access to the countryside, POS for playspace and the new hedges and trees will contribute much to the experience of this part of the northern fringe of Hoveton for existing and new residents.

4 Ecological Assessment

4.1 Background

4.1.1 The ecology study has been undertaken in two stages. The first of these was a scoping study, which was undertaken in autumn 2007 in order to identify any ecological constraints to the development⁵. This survey determined that there was potential for protected species to be present on the Survey Site, notably breeding birds, bats, and White-letter Hairstreak. Mature hedgerows on the Survey Site were also considered to be potentially of value. The scoping report is provided in the Detailed Ecological Assessment, under separate cover, and is summarised below. The second stage of the study was to undertake survey for those features and species identified by the scoping report as potentially being of ecological value. This protected species report is also provided in the Detailed Ecological Assessment and summarised below.

4.2 Survey objectives: Stage 1

4.2.1 The survey objectives are as follows:

- to determine whether the Survey Site (in whole or in part) is of ecological interest
- to identify areas of ecological value
- to determine the wider ecological context of the Survey Site and environs
- to identify the need for further detailed (protected) species surveys
- to identify any potential ecological constraints to development

4.3 Survey methodology: Stage 1

Desktop study

4.3.1 A desktop study was undertaken in October 2007 to identify any existing biological data and any wildlife designations relevant to the Survey Site and immediate environs.

On-site survey - Phase 1 survey

4.3.2 A walk-over survey of the Survey Site was carried out on 7th November 2007. The survey methodology followed Phase I survey methodology⁶ (JNCC, 1993). Phase 1 survey is a standardised system for surveying, classifying and mapping wildlife habitats including urban areas. The surveyor maps the different habitats present and records information about interesting ecological features related to each area of habitat.

4.3.3 The survey visit was also used to identify features and species of particular ecological interest.

⁵ The Landscape Partnership 2007 *Hoveton Outline Ecological Appraisal*. November 2007

⁶ JNCC (1993). *Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

4.4 Results: Stage 1

Desktop survey

- 4.4.1 A brief summary of the results of the desktop study are outlined below. A few sites with wildlife designations occur within the vicinity of the Survey Site. Refer to the Detailed Ecological Assessment for further information.

Sites of International Importance

- 4.4.2 The Broadland Ramsar lies approximately 2km to the southeast of the Survey Site. The Ramsar is designated for the presence of internationally important habitats and species.
- 4.4.3 Broadland Special Protection Area (SPA) lies approximately 2km southeast of the Survey Site. This area supports important numbers of breeding and wintering birds.
- 4.4.4 The Broads Special Area of Conservation (SAC) lies approximately 2km southeast of the Survey Site. The SAC is designated for wetland habitats and species.

Sites of National Importance

- 4.4.5 Bure Broads and Marshes Site of Special Scientific Interest (SSSI) lies approximately 2km southeast of the Survey Site. The SSSI is notified for the presence of excellent examples of un-reclaimed marshland supporting a wide range of plant communities which are typical of Broadland.
- 4.4.6 Bure Marshes National Nature Reserve (NNR) lies approximately 2km southeast of the Survey Site. The NNR displays a wide range of habitats from open water to fenland woods dominated by Alder.

Sites of Regional and Local Importance

- 4.4.7 No Local Nature Reserves (LNRs) occur within the search area:
- 4.4.8 Purple Moor Grass and Rush Pasture and Reedbed Biodiversity Action Plan (BAP) Priority habitats occur approximately 2km southeast of the Survey Site
- 4.4.9 No Ancient/Semi-Natural Woodland occurs within the search area.
- 4.4.10 Larch and Fleece Plantations County Wildlife Site (CWS) lies approximately 1.5km northeast of the Survey Site. This is a stretch of dense broad-leaved semi-natural coppice with standards.
- 4.4.11 No Roadside Nature Reserves (RNR) occur within the search area.

Records of Notable species

- 4.4.12 Records for several species groups occur within the search area; details of the species records are given in The Detailed Ecological Assessment. These include:

Birds

- 4.4.13 Records for birds listed as species of conservation concern occur within the search area. Species include Bittern, Corn Bunting, Lesser Spotted Woodpecker, Osprey and Yellowhammer. Where suitable habitat occurs on the Survey Site, these species may be present.

Land mammals

- 4.4.14 Brown Hare is a Biodiversity Action Plan (BAP) Priority Species and occurs within the search area. Where suitable habitat exists on the Survey Site, this species may be present.

Reptiles

- 4.4.15 Grass Snake, a Biodiversity Action Plan (BAP) Priority Species, has been recorded from the study area. Where suitable habitat exists on the Survey Site, this species may be present.

Invertebrates

- 4.4.16 Norfolk Hawker, Swallowtail and White-letter Hairstreak have been recorded from the search area. Where suitable habitat exists on the Survey Site (elm hedgerow), White-letter Hairstreak, a BAP Priority Species, may be present. Norfolk Hawker and Swallowtail are wetland specialists and would not occur on the Survey Site.

Phase I survey

- 4.4.17 The results of the Phase 1 ecological survey are summarised below and reproduced in full in The Detailed Ecological Assessment. Six phase 1 habitat categories were identified on, or bordering the Survey Site.

1. Arable

- 4.4.18 The majority of the Survey Site area is under arable cultivation, with little evident ecological interest. The land had recently been, or was in the process of being ploughed at the time of survey.

2. Species rich hedge with standard trees

- 4.4.19 Species rich hedgerows (i.e. five or more native woody species in a 30m length) occur on the Survey Site boundaries. These hedgerows have standard trees within them.

- 4.4.20 A hedgerow with mature standard trees occurs on the border between the Survey Site and a ditch (and Stalham road). Standard trees include mature Oak and Ash and Sycamore and young elm. Hedgerow species include Hawthorn, Dog Rose, Ash, Ivy, Blackthorn, Field Maple, Crab Apple, Holly and elm. The hedge will provide nesting habitat for breeding birds and will act as a flyway, and provide sheltered conditions for foraging for, bats. It will also act as wildlife corridor for birds and small mammals.

- 4.4.21 A species rich hedgerow with standard trees occurs on the south side of the footpath and incorporates some new planting. Species include Lilac, Sycamore, Field Maple, Hawthorn, elm, Oak, Blackthorn, Elder, Ivy, Bramble, Prunus sp and Hazel. The hedgerow habitat may provide suitable nesting habitat for birds and act as wildlife corridor.

3. Species poor hedge

- 4.4.22 Species poor hedgerows (i.e. less than 5 native woody species in a 30m length) occur on the Survey Site boundaries.

- 4.4.23 A tall and thick hedgerow occurs along the western boundary, bordering Tunstead Road. Hedge mainly comprises Hawthorn, but also Bramble, Ivy, Oak and Ash. It is likely to provide nesting habitat for breeding birds and act as a flyway for bats. It will also act as a wildlife corridor for birds and small mammals.

- 4.4.24 Remnants of a Hawthorn hedge with a small stand of Hazel occur along the northern boundary, between standard Oaks. There may be some opportunities for nesting birds.

- 4.4.25 A short stretch of Leylandii hedge with Ivy and some suckering elm occurs on the southern boundary, adjacent to the public footpath.

4. Scattered trees

- 4.4.26 Several mature Oak trees are present within the Survey Site; as a line dissecting the fields and on the Survey Site boundaries. Mature trees with cracks and crevices offer roosting opportunities for bats and perching places for birds of prey.
- 4.4.27 Other scattered trees occur in a small strip of ruderal vegetation on the southern boundary of the Survey Site. Species include mature and semi-mature Oak and Ash, field Maple, Hazel, Elder and Hawthorn.
- 4.4.28 Woody vegetation provides suitable habitat for birds to nest in during the breeding season.

5. Tall ruderal

- 4.4.29 Tall ruderal vegetation occurs across the Survey Site, mainly on its boundaries and on the shallow banks where the lines of mature Oak and Ash are situated. Long vegetation may provide suitable habitat for ground nesting birds, and a foraging opportunity for a variety of species.

6. Dry ditch

- 4.4.30 Dry ditch adjacent to Stalham Road. The ditch is dry; grassy for some of its length and bare of vegetation for the rest of it. Where bare, the ditch is shaded by tall hedges with trees on the road side.

4.5 Assessment of ecological interest: Stage 1

Assessment rationale

- 4.5.1 The ecological value of the Survey Site is considered below and the potential impact of the scheme provisionally assessed (see also the Detailed Ecological Assessment).

Wildlife Sites

RAMSAR

- 4.5.2 Broadland RAMSAR is classed as being of **Very High** value to wildlife at the **International** scale.

Special Protection Area

- 4.5.3 Broadland SPA is classed as being of **Very High** value to wildlife at the **International** scale.

Special Area of Conservation

- 4.5.4 The Broads SAC is classed as being of **Very High** value to wildlife at the **International** scale.

Sites of Special Scientific Interest

- 4.5.5 Bure Broads and Marshes Site of Special Scientific Interest (SSSI) is classed as being of **High** value to wildlife at the **National** scale.

National Nature Reserve

- 4.5.6 Bure Marshes NNR displays a wide range of habitats from open water to fenland woods dominated by Alder. This NNR is classed as being of **High** value to wildlife at the **National** scale.

Biodiversity Action Plan Priority Habitats

- 4.5.7 Reedbeds and Purple Moor Grass and Rush Pasture are found in the locality. These areas of habitat are classed as being of **Medium** value to wildlife at the **County** level.

County Wildlife Site

- 4.5.8 Larch and Fleece Plantations CWS is a stretch of dense broad-leaved semi-natural coppice with standards. This CWS is considered to be of **Medium** value to wildlife at the **County** scale.

Habitats

- 4.5.9 The hedgerows with associated standard trees provide nesting habitat for birds, and mature trees may provide roosting opportunities for bats. This habitat is provisionally classed as being of **Lower** value to wildlife at the **Parish/Neighbourhood** level. Sections of elm hedge may support White-letter Hairstreak. Hedgerow habitats should be incorporated into the Site Area layout for the new development, avoiding fragmentation of hedgerow corridors occur resulting in loss of foraging and bird nesting habitat.
- 4.5.10 The scattered trees across the Survey Site, particularly the mature Oak trees may have some value for nesting birds, and possibly roosting bats. The trees are considered to be of **Lower** value to wildlife at the **Parish/Neighbourhood** scale, although this assessment would change should populations of roosting bats be discovered. The Site Area layout for the new development should incorporate the trees into its design and use additional wildlife friendly landscape planting to mitigate against the impact of development.
- 4.5.11 The arable land has minimal value for wildlife, though it is possible that Brown Hare may be present. Ground nesting birds may use the long grass habitats on the field boundaries. This habitat is provisionally classed as being of **Lower** value to wildlife at the **Parish/Neighbourhood** level.
- 4.5.12 The dry ditch habitat on the Survey Site boundary is classed as being of **Lower** value to wildlife at the **Parish/Neighbourhood** level.
- 4.5.13 Overall, the Survey Site habitats are therefore provisionally assessed as being of **Lower** wildlife value at the **Parish/Neighbourhood**.

Rare, scarce and protected Species

- 4.5.14 The likely use of the Survey Site by protected and uncommon species, including BAP Priority Species is considered below. The potential impact of the scheme on these species cannot be formally assessed until more details of the proposed scheme are made available.

Breeding Birds

- 4.5.15 Use of the Survey Site and its boundaries by breeding birds is likely to centre upon the hedgerows and scattered trees and to a lesser extent, possibly the strips of long grass on the field boundaries. The value of the Survey Site to breeding birds is provisionally assessed as **Lower** at the **Parish/Neighbourhood** scale. It is recommended that a buffer strip of at least 10m be retained between the hedgerows and the development. Should any removal of woody vegetation be planned, a breeding bird survey should be undertaken in the appropriate season to ascertain the level of use of the hedgerows and grassland habitat by birds, prior to work starting. Development work at the Survey Site is likely to result in some localised disturbance to breeding birds, and mitigation in the form of bird-friendly native planting (shrubs and trees) is proposed.

Brown Hare

- 4.5.16 Brown Hare has been highlighted by the desk-top study as occurring in the vicinity of the Survey Site and it is possible that hares may use the arable land, although use of the area adjacent to the present development is unlikely. The value of the Survey Site to Brown Hare is considered to be **Lower** at the **Parish/Neighbourhood** level.

Bats

- 4.5.17 Although no records of bats were received from the Biological Records Centre, it is possible that the mature trees within the Survey Site and on its boundaries may provide potential roosting habitat for bats and the hedgerows will provide a foraging resource and flyway. The value of the Survey Site to bats is provisionally assessed as **Lower** at the **Parish/Neighbourhood** scale. It is recommended that the Survey Site is inspected by a bat specialist to ascertain its level of use by bats and the potential impact of the development upon this species.

Reptiles

- 4.5.18 Grass Snake has been recorded from the search area. Habitats on the Survey Site do not appear suitable to support this species. The Survey Site is considered to be of **Lower** value to reptiles at the **Parish/Neighbourhood** level.

Invertebrates

- 4.5.19 Norfolk Hawker and Swallowtail have been recorded in the vicinity of the Survey Site. Habitats on the Survey Site itself do not appear suitable to support these species. White-letter Hairstreak may be associated with elm-dominated hedgerow sections. If there is likely to be any impact upon hedgerows, a survey to determine the distribution of White-letter Hairstreak may be necessary. Any new hedgerow planting should incorporate *Ulmus* spp. The value of the Survey Site to invertebrates is provisionally assessed as **Lower** at the **Parish/Neighbourhood** scale.

4.6 Assessment of ecological impact: Stage 1

Designated sites

- 4.6.1 The proposed development lies at sufficient distance for the designated sites for impact, either direct or indirect, to be unlikely.

Habitats

- 4.6.2 The impact of the proposed development upon habitats of wildlife value present on the Survey Site is discussed below and in the Detailed Ecological Assessment.

Protected species

- 4.6.3 The impact of the proposed development upon protected species is discussed below.

4.7 Survey objectives: Stage 2

- 4.7.1 The study objectives are as follows:
- to determine presence or absence of White-letter Hairstreak
 - to determine level of bat activity and the potential for bat roosts to be present
 - to determine species range and location of breeding birds
 - to survey and evaluate the hedgerows on the Survey Site
 - to assess ecological value of the Survey Site and impact of proposals
 - to provide an outline mitigation strategy for the above protected species, if found to be present

4.8 Survey methodology: Stage 2

4.8.1 Refer to the Detailed Ecological Assessment for further detail.

White-letter Hairstreak survey

4.8.2 White-letter Hairstreak adults emerge at the beginning of June, with peak population counts in mid July. Survey effort is most effectively focussed on active males, which are evident from mid June, rather than on nectaring insects the following month, which are more difficult to locate in the canopy. Male activity is at its peak around the tree-tops between 09:00 and 12:00 and will then decline.

4.8.3 A survey visit was made on 26th June 2008.

4.8.4 The objectives of the survey were to:

- determine presence/absence
- approximate population size and location if present

Hedgerow survey

4.8.5 The status of each hedge with regard to the Hedgerows Regulations (1997) was assessed by survey of 30m sections according to standard procedure⁷. Species richness, hedge status and condition were assessed. Hedgerow survey took place on 26th June 2008.

Breeding bird survey

4.8.6 The Survey Site was visited three times between mid-April and mid-June 2007. The survey method was based on the territory mapping method, a standard technique for breeding bird survey.

Bat survey

4.8.7 A survey was carried out by experienced surveyors on 16th June 2008, to assess potential foraging habitat and flyways within the Survey Site and identify any potential tree roosts. The following methodology was used:

- A walk over survey to identify potential foraging habitat and roosting trees
- Survey along a standard transect (based on the National Bat Monitoring Scheme transect). The transect 'transect A' was marked out into 7 sections to incorporate areas identified as of important potential bat foraging habitat.

4.8.8 An assessment of the potential of features on the Survey Site to provide a roost either in the summer (nursery) or winter (hibernation) was undertaken, based on previous experience of bat occupancy at other sites.

4.9 Results and assessment: Stage 2

Hedge survey

4.9.1 Hedgerows form a large component of the western, eastern and southern boundaries of the Survey Site, with a very short section on the northern boundary. All the species recorded occur commonly in hedges in East Anglia. None of the hedgerows surveyed qualify as species-rich under the Hedgerow Regulations. In terms of

⁷ Bickmore C J (2002). *Hedgerow Survey Handbook: A Standard Procedure for Local Surveys in the UK*. Prepared on behalf of DEFRA, London (Steering Group for the UK Biodiversity Action Plan for Ancient and / or Species-rich Hedgerows).

species diversity, the hedgerow which is situated to the south of the Survey Site, adjacent to Summer Drive is the richest 5 woody species present in addition to Bramble and Ivy, within the 30m survey section. The most frequently occurring species amongst the hedgerows on the Survey Site are Blackthorn and Hawthorn. Please refer to the Detailed Ecological Survey for a more comprehensive description of the hedgerow survey.

Hedge Assessment

- 4.9.2 In line with guidance set out in the Hedgerows Regulations 1997, only the hedgerow that occurs on the southern boundary constitutes an 'Important' hedge and is classed as Biodiversity Action Plan (BAP) Priority Habitat. Although the other hedgerows do not qualify as BAP habitat, they are none the less of importance to wildlife in a local context as they will be used by nesting birds during the breeding season and they provide a foraging resource and flyway for bats. Hedgerows create green links between habitats, providing a safe corridor of movement for all kinds of wildlife.
- 4.9.3 The value of the study area for its hedgerow habitat is considered to be **Medium** at the **County** scale based on one of the hedgerows being classed as BAP Priority Habitat. The development will not directly impact upon this hedgerow. However, an access road will be made through part of the hedgerow on the eastern boundary of the Survey Site and this will cause impact upon hedgerows to be **Minor Adverse**. Negative impact caused by the creation of the access road may be offset by mitigation through the planting of new native species-rich hedgerows on the development area and strengthening of existing hedgerows with native species suitable to the local area. If this mitigation is put in place, impact may be reduced to **Neutral**.

White-letter Hairstreak survey

- 4.9.4 No White-letter Hairstreak butterflies were found on the Survey Site and it is unlikely that they would be present.

White-letter Hairstreak Assessment

- 4.9.5 The value of the Survey Site to White-letter Hairstreak is considered to be **Lower** at **Parish/Neighbourhood** scale. There is therefore no potential for impact to occur and impact from development is judged to be **Neutral**.

Breeding bird survey

- 4.9.6 In total 21 species were recorded in the survey area. Of these 16 were considered to be holding territory within or partly within the survey area in 2008. Most of the birds present were associated with the hedges and field banks forming the Survey Site boundaries and with adjacent gardens. The main exception to this was Skylark, one of the notable species recorded, with an estimated 3 to 4 pairs present, which was exclusively associated with the arable fields. Also notable were Dunnock, Song Thrush, Starling and House Sparrow. These species used the Survey Site boundaries and adjacent gardens and houses for nesting/breeding and the arable areas and grassy track margins for foraging in varying degrees.
- 4.9.7 The arable fields, which comprise most of the survey area, supported generally small numbers and a limited variety of breeding birds, although there was a small population of Skylarks. The hedgerows forming boundaries around, and to a lesser extent within, the survey area were used as foraging areas and as linkages with the wider countryside as well as providing shelter and probable roost sites. No evidence of nesting in these hedges was found during the survey but it should not be ruled out. The highest densities of breeding birds occurred around the edges of the Survey Site and were mainly associated with the gardens adjacent to the survey area.
- 4.9.8 The table below summarises the results of the survey. For further detail, refer to The Detailed Ecological Assessment.

Red-legged Partridge	1 pair on Arable land. Likely to be breeding in the survey area.
Sparrowhawk	Not seen during the survey but evidence of presence found in the form of three piles of plucked prey remains. Not breeding in the survey area.
Black-headed Gull	Foraging on arable land. Not breeding in the survey area.
Woodpigeon	Feeding on arable land and in gardens. Likely to be breeding in the survey area.
Skylark	Breeding on arable land in the survey area. Also breeding on adjacent fields.
Pied Wagtail	Foraging on arable land and other bare ground and on areas of mown grass. Unlikely to be breeding in the survey area.
Wren	Associated mainly with adjacent gardens also possibly breeding within the survey area.
Dunnock	Associated mainly with adjacent gardens also possibly breeding within the survey area.
Robin	Associated mainly with adjacent gardens also possibly breeding within the survey area.
Blackbird	Associated mainly with adjacent gardens also possibly breeding within the survey area.
Song Thrush	Associated mainly with adjacent gardens unlikely to be breeding within the survey area.
Blackcap	Associated mainly with adjacent gardens unlikely to be breeding within the survey area.
Blue Tit	Associated mainly with adjacent gardens but also possibly breeding within the survey area.
Great Tit	Associated mainly with adjacent gardens but also possibly breeding within the survey area.
Magpie	Foraging on arable land, unlikely to be

	breeding within the survey area.
Carrion Crow	Foraging on arable land, unlikely to be breeding within the survey area.
Starling	Associated mainly with adjacent gardens but also one in song in mature Oak inside survey area and therefore likely to be breeding within survey area.
House Sparrow	Associated mainly with adjacent gardens unlikely to be breeding within the survey area.
Chaffinch	Associated mainly with adjacent gardens but also possibly breeding within the survey area.
Greenfinch	Associated mainly with adjacent gardens but also possibly breeding within the survey area.
Goldfinch	Associated mainly with adjacent gardens but also possibly breeding within the survey area.

Breeding bird assessment

- 4.9.9 Most of the species breeding are widespread and abundant in lowland Britain, and their populations in the survey area are small in relation to their national totals. The overall range and number of species currently present in the area falls short of local importance, the lowest category in conservation terms.
- 4.9.10 Four species on the Red List and one on the Amber List of Birds of Conservation Concern, were recorded as holding territory within or partly within the survey area. All five species are Biodiversity Action Plan Priority (BAP) Species listed in the recently published JNCC UK List of Priority Species. All of these species are birds that are still relatively widespread and numerous but have experienced national population declines over the last 25 years.

Species of particular conservation value breeding in 2008

Species	BAP Priority	RSPB Red List	RSPB Amber List
Skylark	✓	✓	
Dunnock	✓		✓
Song Thrush	✓	✓	
Starling	✓	✓	
House Sparrow	✓	✓	

- 4.9.11 In summary, the survey area has a small, species-poor breeding bird community, which falls short of the category of local importance the lowest in conservation terms. Both species-variety and numbers of birds are typical of intensively farmed arable habitats. The only exception was the small number of Skylarks. Overall, the breeding bird assemblage within the Survey Site would therefore best be classified as of **Lower** value at the **Parish/Neighbourhood** level.
- 4.9.12 Site clearance operations have the potential for destruction, damage or disturbance of nests, both in woody vegetation and in open farmland habitat and the consequent incidental mortality of chicks or eggs. There may be temporary or permanent loss of nesting or foraging habitat depending upon specific species requirements. Site implementation works would result in noise and visual disturbance close to areas of retained vegetation, and therefore there may be an additional short-term degradation of habitat for breeding birds within the Survey Site.
- 4.9.13 It is assumed that marginal vegetation along the boundaries of the Survey Site will be largely retained and that there would be no net loss of hedgerow and scrub habitat. There may be short term reduction in nesting habitat availability for some species as a result of local noise and visual disturbance. Most of the species recorded at the Survey Site, for example, Robin, Blackbird, Chaffinch and Greenfinch are particularly adapted to living in and around gardens and consequently, in the longer term, are likely to continue to nest in the retained vegetation and would be able to expand into the proposed semi-natural vegetation (scrub and grassland) of the Public Open Space (POS). In the longer term populations of these species should therefore increase.
- 4.9.14 The value of the new habitats to breeding birds will be in part determined by the quality of the landscape planting within the POS and by levels of human disturbance, by dog walkers for example, to nesting birds in existing and new habitats. Areas of new planting should therefore be created which have no formal public access. Semi-natural planting should include berry bearing trees and shrubs and invertebrate-supporting native species to enhance food availability. The proposed planting should be structurally diverse with tree, shrub and ground layers with areas of dense scrub as well as more open areas, and should include species indigenous to Norfolk.
- 4.9.15 Provided that attention is given to appropriate landscape planting, the proposed development would probably be neutral or beneficial in terms of total numbers of breeding birds given that most of the birds recorded were using gardens, trees, and hedgerows adjacent to the Survey Site and that the farmland itself held very few birds.
- 4.9.16 The exception to this would be the Skylark breeding habitat, which will be lost in the proposed development. This impact would be difficult to mitigate although it could to some extent be offset by providing Skylark breeding plots on adjacent farmland.
- 4.9.17 Overall, the impact of the proposed development upon the breeding bird assemblage within the Survey Site would therefore best be classified as being **Minor Adverse**, or, where a significant increase in native woodland, tree and scrub habitats can be achieved through landscape planting, **Neutral to Minor Beneficial** (see proposals for mitigation below).

Bat survey

- 4.9.18 During the survey at least four species of bat were recorded using the Survey Site. The hedgerow and scrub along the Stalham Road is clearly an important flyway, with four species, namely Brown Long-eared Bat, Common Pipistrelle, Noctule, Serotine recorded here, flying in different directions during a 10 minute period.
- 4.9.19 Foraging activity was noted along the rear of properties facing onto Stalham Road, with several Common Pipistrelle feeding in gardens and partly over the arable crop.

Foraging activity might also be expected along the footpath between Tunstead Road and Stalham Road, but none was noted during the survey. The route of this footpath, and in particular the adjacent garden curtilages, provide a second, minor flyway through the Survey Site.

- 4.9.20 Significant feeding activity by 8 or 9 Common Pipistrelles was also noted in the vicinity of oak trees along the northern Survey Site boundary. Activity was very much confined to the canopy, and was observed soon after emergence might have been expected to take place, which may suggest a small roost in one of these trees.
- 4.9.21 There was no observed feeding activity over the arable fields.
- 4.9.22 Approximately 50% of the mature trees on the Survey Site were considered to have potential to support bat roosts, with either significant dead wood in the canopy or dense ivy growth on the tree trunks. The majority of the suitable trees were situated along the northern Survey Site boundary.
- 4.9.23 For further detail, refer to the Detailed Ecological Assessment.

Bat assessment

- 4.9.24 A significant number of bats forage on or commute through the Survey Site, particularly given the perceived impoverished feeding habitats. Given the presence of both commuting Noctule/Serotine and of a substantial number of foraging Pipistrelle (above 10 individuals), the importance of the population is therefore assessed as being of **Lower** Importance at the **District/Borough** scale. In the absence of mitigation, the impact would be **Major Adverse**. Mitigation can be employed to reduce the impact to an acceptable level (see below).

4.10 Mitigation requirements

White-letter hairstreak

- 4.10.1 White-letter Hairstreak was not found during the on-Site survey. It is therefore not considered that the development of the Site Area will have any impact upon this species and no mitigation measures specific to this species are required.

Hedgerows

- 4.10.2 Due to the loss of some hedgerow through the creation of an access road, impact upon this habitat has been judged as **Minor Adverse**. In order to lessen the impact to become neutral, the following mitigation is recommended.
 - a) Strengthening of existing hedgerows with native species typical of the local area such as Hawthorn, Blackthorn, Field Maple, English Oak, Elder, Ash, Crab Apple, Damson and Bullace.
 - b) Additional hedgerow planting to link in with existing hedges using a composition of native species as detailed above. Standard trees of Oak and Ash should be incorporated into the hedgerow design.

Breeding birds

- 4.10.3 Mitigation would require:
 - a) Retention of all standard mature trees and in particular retention of any dead wood or ivy cover.
 - b) No net loss of hedgerow habitat. New and retained hedgerow should not be subject to excessive management, and should be maintained at a minimum height and width of 2m (standard trees would obviously be allowed to reach a greater height).

- c) Retention of marginal tree and hedgerow habitats wherever possible, to ensure corridors are maintained. A wildlife corridor of at least 20m in width should be maintained along the eastern Survey Site boundary, and there should be no severance of the linkage with the hedgerow which continues along the rear of properties to the north of the Survey Site along Stalham Road.
- d) Provision of extensive native tree and shrub planting to enhance existing foraging habitats and linkages. Native shrub planting should include a proportion of berry and fruit-bearing species. Suitable species would include: *Malus sylvestris*, *Ilex aquifolium*, *Crataegus monogyna*, *Rosa canina*, *Sorbus aucuparia*, *Carpinus betulus*, *Quercus robur*, *Betula pendula*, *Prunus spinosa*, *Fraxinus excelsior*, *Acer campestre*, *Ulmus* spp.
- e) No clearance of woody vegetation to take place within the breeding season (March to July inclusive).
- f) Provision of Skylark plots on retained land elsewhere within the landholding
- g) Nestboxes and provision of nesting facilities for hole-nesting species such as Great and Blue Tits on trees and Starling, House Sparrows and Swifts on buildings would increase potential nesting habitats and provide mitigation for negative impacts.
- h) Creation of areas of rough grassland or wildflower meadow to diversify foraging habitats

4.10.4 Provided a) to f) above can be adhered to, the impact of the development upon breeding birds would be **Neutral**. Substantial native planting and implementation of g) and h) could enhance the habitat sufficient for a **Minor Beneficial** impact to result.

Bats

4.10.5 Mitigation would require:

- a) Retention of all standard mature trees and in particular retention of any dead wood or ivy cover. Where tree works are unavoidable, close inspection and if necessary emergence survey should be employed.
- b) Retention of an unlit wildlife corridor along the footpath which runs from the Tunstead Road to the Stalham Road
- c) Retention of the tree line and hedgerow along the Stalham Road, which is clearly an important commuting route for bats. The retained hedgerow should not be subject to excessive management, and should be maintained at a minimum height and width of 2m (standard trees would obviously be allowed to reach a greater height. An unlit wildlife corridor of at least 20m in width should be maintained along this boundary, and there should be no severance of the linkage with the hedgerow which continues along the rear of properties to the north of the Site along Stalham Road. It is understood that the Stalham Road corridor would necessarily be severed to provide access to the development. If this is unavoidable, then the width of any access should be kept to a minimum and alternative flyways provided through the Site Area.
- d) Provision of extensive native tree and shrub planting to enhance existing foraging habitats and linkages. New habitats should not be lit.
- e) Ensuring Site Area is managed to as to retain bat foraging habitat

- f) Mitigation for the use of the Site Area by foraging and roosting bats should ensure all lighting is downwards-directed, cowled, Low Spillage white or sodium lighting and is placed well away from trees and potential flyways
 - g) Creation of areas of rough grassland or wildflower meadow to diversify foraging habitats
- 4.10.6 Provided a) to f) above can be adhered to, the impact of the development upon bats would be reduced to **Neutral**. Substantial native planting and creation of wildflower meadow d) & g) could enhance the habitat sufficient for a **Minor Beneficial** impact to result.

4.11 Conclusions

- 4.11.1 No White-letter Hairstreak butterflies were found to be using habitats within the survey area and the value of the Survey Site to this species is considered to be **Lower** at the **Parish/Neighbourhood** scale. Impact of the development will be **Neutral**. No mitigation with reference to White-letter Hairstreak is required.
- 4.11.2 One out of four hedgerows within the survey area is considered to be important and is classed as BAP Priority Habitat. This leads to the assessment of the value of the Survey Site to hedgerows to be **Medium** in the **County** context. The creation of an access road through part of one of the hedges makes impact **Minor Adverse**. Mitigation through additional planting and strengthening of existing hedgerows using native species suitable to the local area would go some way to offset impact, which may be reduced to **Neutral**.
- 4.11.3 The range and number of breeding birds using the Survey Site is low, with much of the activity associated with Survey Site boundary features, and especially with adjacent gardens. The exception to this is Skylark. Off-Site mitigation would be required for impact upon this species. Overall, the impact of the proposed development upon the breeding bird assemblage within the Survey Site would therefore best be classified as being **Minor Adverse**, or, where a significant increase in native woodland, tree and scrub habitats can be achieved through landscape planting, **Neutral** to **Minor Beneficial** (see Section 4 above).
- 4.11.4 A significant number of bats forage on or commute through the Survey Site, particularly given the perceived impoverished feeding habitats. Given the presence of both commuting Noctule/Serotine and of a substantial number of foraging Pipistrelle (above 10 individuals), the importance of this population is therefore assessed as being of **Lower** value at the **District/Borough** scale. In the absence of mitigation, the impact would be **Major Adverse**. Mitigation can be employed to reduce the impact to an acceptable level (see Section 4 above).
- 4.11.5 Overall, the Survey Site is generally of low importance to wildlife, and there is substantial opportunity for wildlife enhancement to be built into the scheme. In particular, the following would be of benefit, and could result in an overall enhancement of the Survey Site and a **Minor Beneficial** ecological impact:
- a) Provision of extensive native tree and shrub planting to enhance existing foraging habitats and linkages. Native shrub planting should include a proportion of berry and fruit-bearing species and should be structurally diverse. Suitable species would include: *Malus sylvestris*, *Ilex aquifolium*, *Crataegus monogyna*, *Rosa canina*, *Sorbus aucuparia*, *Carpinus betulus*, *Quercus robur*, *Betula pendula*, *Prunus spinosa*, *Fraxinus excelsior*, *Acer campestre*, *Ulmus* spp. New habitats should not be lit.
 - b) Ensuring the green infrastructure of the Site Area is managed as to retain bat and bird foraging habitat

- c) Creation of substantial areas of rough grassland or wildflower meadow to diversify foraging habitats for bats and birds
- d) Nestboxes and provision of nesting facilities for hole-nesting species such as Great and Blue Tits on trees and Starling, House Sparrows and Swifts on buildings would increase potential nesting habitats and provide mitigation for negative impacts.
- e) Ensuring that at least 50% of public open space is managed for wildlife

5 The Masterplan

5.1 Summary of Opportunities and Constraints

5.1.1 The results of the assessments described above were integrated into the following set of opportunities and constraints:

Opportunities:

- The landscape is well contained so views of the Site are localised and visual impacts will be limited
- The landscape has a moderate capacity to absorb development without undue impact on its character
- It is considered the proposal would not have any detrimental impact on nationally designated landscapes or features
- The Site is readily accessible for both vehicles and pedestrians and could be easily integrated into the village
- New cycle and footpath links could be created, through green space, to key destinations, e.g. the high school and railway station (from residential area to the east) and the surgery (from the west). An Analysis plan showing local movement links and opportunities was prepared – see Figure 05 to illustrate how the Site could link into local routes and provide recreation opportunities
- Footpaths are currently very limited around Hoveton. In addition to recreational space in the proposed park, there is the potential for 'circular' walks associated with a series of 'Green Corridors'
- The recreational value of the footpath on southern edge of the Site would be enhanced with new links into green space
- A new green route between the village and the ribbon development to the north could be created
- Private farmland would be transformed into accessible green space for permanent use by people in the local area, which is currently lacking
- The existing network of trees and hedges creates landscape structure would be retained, and provides the framework for future planting strategies
- Further, the enhancement of field boundaries with further tree and hedge planting would help restore locally distinctive landscape features. This would in turn, strengthen wildlife corridors into the wider area
- The biodiversity of the area could be improved through habitat creation to benefit local wildlife. Key to this would be the creation of wildflower meadow and/or rough grassland habitats within the POS. Specific proposals are given below:
 - a) Provision of extensive native tree and shrub planting to enhance existing foraging habitats and linkages. Native shrub planting should

include a proportion of berry and fruit-bearing species and should be structurally diverse.

- b) New wildlife habitats should not be lit.
- c) Ensuring the green infrastructure of the Site is managed to as to retain bat and bird foraging habitat. This requires intact corridors of trees and scrub, and structural and species diversity.
- d) Creation of substantial areas of rough grassland or wildflower meadow to diversify foraging habitats for bats and birds
- e) Nestboxes and provision of nesting facilities for hole-nesting species such as Great and Blue Tits on trees and Starling, House Sparrows and Swifts on buildings would increase potential nesting habitats and provide mitigation for negative impacts.
- f) Ensuring that at least 50% of public open space is managed for wildlife. At least 25% of the POS should be rough grassland and scattered scrub

Constraints

- Key vegetative features, such as hedges and trees, must be retained as far as possible. Removal of the hedge along the eastern boundary must be kept to a minimum. The hedge along the Tunstead Road must be retained intact. To the west however, footpath/cycle/emergency access links could be provided without impact to the hedge.
- The edges of the development must be sensitively treated, green spaces and corridors must be incorporated, and local views into the countryside must be retained to ensure that effects on sensitive visual receptors are minimised.
- Key biodiversity constraints are as follows (suggested mitigation is also given):
 - a) At least 50% of the standard mature trees have potential to support roosting bats. Retention of any dead wood or ivy cover is critical if impact is to be avoided. Where tree works are unavoidable, close inspection and if necessary emergence survey should be employed.
 - b) The hedgerow which runs from Tunstead Road to Stalham Road is a key wildlife corridor and is also used by nesting birds and for foraging and commuting by bats. This route should be retained as an unlit wildlife corridor
 - c) The tree line and hedgerow along the Stalham Road is clearly an important commuting route for bats. Impact upon woody vegetation should be kept to a minimum. The retained hedgerow should not be subject to excessive management, and should be maintained at a minimum height and width of 2m (standard trees would obviously be allowed to reach a greater height. An unlit wildlife corridor of at least 20m in width should be maintained along this boundary, and there should be no severance of the linkage with the hedgerow which continues along the rear of properties to the north of the Site along Stalham Road. It is understood that the Stalham Road corridor would necessarily be severed to provide site access. The width of any access

should be kept to a minimum and alternative flyways provided through the Site

- d) Lighting can be hugely disruptive to bats and can change the way in which they use a site. All site lighting should be downwards-directed, cowled, Low Spillage white or sodium lighting and must be placed well away from trees and potential flyways

5.2 Masterplan layout

- 5.2.1 A Masterplan has been developed that takes account of all these factors – this is shown in Figure 06. The following describes the form of the Masterplan in more detail.
- 5.2.2 The Site has been separated into three developable areas that focus on a central open space that links though to the Stalham Road. This forms a new park for Hoveton. The positioning of the open space in the heart of the development means it will become a key space for both the existing and new communities and it will be the anchor point that links it both into the landscape and into the local community.
- 5.2.3 The LDF options report states that any development in Hoveton should; “*Secure the delivery of additional facilities and services to meet the needs of the local community arising from existing and proposed residential development, particularly education and open space*”. Development of the Site in the form proposed would contribute significantly to the aim for new open space with provision of 2.4ha of new accessible greenspace. Private farmland would be transformed to create a resource offering both new and existing residents access to recreation and play facilities; the existing local community are currently very restricted for such opportunities. The new park would be overlooked by dwellings on all sides and would function as the green heart of the development. It would be integrated into the existing landscape structure and could feature areas for kickabout, fitness trails, woodland walks, formal playgrounds, and footpath routes into the wider countryside.
- 5.2.4 The Site would be linked to the only ‘green’ footpath route in the village. It would be visible from the Stalham Road and would be provided close to key community facilities such as the school, youth centre and the surgery, all creating a number of interconnecting benefits. New facilities would improve inclusion particularly for young, disabled and older people through appropriate provision of accessible routes and facilities such as play equipment aimed at those with restricted mobility. The park could be used to host village fetes or suchlike.
- 5.2.5 The development would also help integrate the surgery into the village; the building is currently somewhat isolated on the edge of the village accessible only via Stalham Road. New footpath links would improve pedestrian access and promote walking rather than unnecessary journeys to the surgery by car.
- 5.2.6 There could also be opportunities for providing outdoor educational resources for the adjacent school such as habitat creation, perhaps a fitness trail. There maybe an opportunity for shared facilities or even the expansion of the school grounds into adjacent land to the west of the Site, for example, should the school find it necessary to expand in the future.
- 5.2.7 As well as the park, the creation of alternative and sustainable routes for circulation around north Hoveton, including safer routes to school, is a key benefit that this Site would offer. The houses along the west side of Stalham Road to the north of the Surgery, for example, are currently rather isolated and new routes in, through and round the Site would make destinations in west Hoveton such as the high

school and the station much more accessible and attractive on foot and by cycle. Development of the Site would create the opportunity to extend footpath routes into the wider landscape, perhaps associated with green corridors around the existing field boundaries and headlands, and bring substantial benefit for local people.

5.3 Minimising landscape and visual impacts

- 5.3.1 The layout was developed to ensure characteristic landscape features would be retained within open space or green corridors. Retention of the network of trees and hedges as far as possible, and their protection within a buffer zone, will provide landscape structure to function as a ready-made framework for new native planting. Additionally they will provide a potential framework for new recreational routes.
- 5.3.2 The hedge along the western boundary must be retained in its entirety. The main point of access will be from Stalham Road. The proposal would strive to minimise the length of hedge removal and seek to reinstate a greater length of hedge than is removed overall.
- 5.3.3 The existing footpath to the west would be upgraded to a cycle route and provide a connection with the Tunstead Road from the heart of the development. This would have little impact on the existing hedge on Tunstead Road.
- 5.3.4 The standard field boundary oaks are to be retained and integrated into the development within a 20m wide green corridor. The siting of the open space around the tree line will allow them to retain their setting and thrive. When viewed within this space, the key local landscape characteristics would be retained. The oak trees would break up the views of the roof lines of the development and help its integration into the landscape by their considerable stature and presence.
- 5.3.5 The siting of open space along Stalham Road has a key function. Dwellings would be set back from the road echoing one of the 'greens' that characterise other dwellings in Hoveton. It would help form a sensitive transition between the residential area of Hoveton to the south and the more open countryside to the north. Views to the north would be maintained and the character of the rural, village edge would still prevail.
- 5.3.6 Other visual impacts have also been taken into account in designing the form of the development. To minimise effects on the Summer Drive bungalow, the dwelling likely to experience greatest visual change, a degree of openness has been retained in front of this property, allowing views along the green corridor through into the POS and beyond into the open countryside. Additional tree and hedge planting would be employed to help screen the dwellings from viewpoints on Summer Drive.
- 5.3.7 From the open space, direct views towards St Peter's Chapel will be possible; although partly obscured by trees, the chapel is a local point of interest and views to it should be maintained.
- 5.3.8 The development would be enclosed by screening planting – tall dense hedges, belts of native planting and standard oak trees. They would be designed to tie in with the existing tree lines and hedges and to soften and screen the edges of the development and enhance wildlife value.

5.4 Enhancing Biodiversity

- 5.4.1 The ecological appraisal found that currently the Site does not have significant ecological value, although margin habitats are of importance to breeding birds, and

at least two of the boundaries provide important commuting flyways for bats. The standard oak trees in the north of the Site are also important foraging habitat for this last species group. The main habitats and species of interest are therefore associated with the hedgerow habitat and mature trees. It is considered that provided the hedgerow habitats together with a small buffer zone (at least 20m wide), and mature trees are retained within the development, and provided that mitigation appropriate to the level of species interest was undertaken, the interest of those species associated with such habitats could be safeguarded.

- 5.4.2 The development would, in time, create opportunities to enhance biodiversity through reinforcing existing habitats and corridors and diversifying the types of habitats. Reinforcement of hedgerows, margins and tree lines with new native and other wildlife friendly planting would encourage greater diversity and encourage greater dispersal of wildlife. Areas of longer grass at margins associated with trees, hedges and shrubs would increase the biodiversity value, as would creation of rough grassland/wildflower meadow habitat within the POS.
- 5.4.3 Opportunities to provide environmental infrastructure to improve run-off water quality and flood control would also have benefits for biodiversity. The creation of wet or intermittently wet ponds, swales or ditches would offer habitat creation opportunities.

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- 5.4.4 In summary, it is considered that with careful site planning, development of the Site would cause neither a significant detrimental impact to landscape character, to views or to ecological habitats or species. Minor sources of impacts have been identified but with an appropriate layout that places the open space at the heart of the scheme and in the foreground of important views, the Site could be developed for approximately 150 houses with no long term detrimental effect on the local area. With time, planting around the development, linked with the existing landscape structure, would screen and integrate the development and the provision of the associated open space would bring significant benefits for local residents.

APPENDIX 1

Appendix 1 L.V.I.A. definitions and criteria

Landscape Assessment

Table A1 Landscape sensitivity values

Rating	Description
High	<p>Landscape highly sensitive to change owing to one or more combinations of the following factors:</p> <ul style="list-style-type: none"> - where features forming basis of a landscape designation are vulnerable - in poor condition and where prevailing character has been eroded or destroyed, or where the scale of development would lead this to occur - little topographic variation or lack of enclosure means impacts would be widely experienced - scale of the landscape is such that the development would have significant visual influence - landscape type is nationally valued and/or is scarce and/or would be difficult to replicate - culturally valued with strong historical or topical cultural associations e.g. important with tourists - prevailing tranquillity that would be affected - presence of multiple receptors
Moderate	<p>Landscape moderately sensitive owing to one or more of the following factors:</p> <ul style="list-style-type: none"> - where features forming basis of a landscape designation are not vulnerable - where prevailing character has been partly eroded - topographic variation or enclosure patterns means impacts would be somewhat limited - scale of the landscape is such that the development would have a moderate visual influence - landscape type is regionally or locally valued and/or is reasonably widespread and/or would be moderately easy to replicate - Has some cultural value or associations - Moderate degree of tranquillity that may be affected - presence of several receptors - Landscape type is locally scarce but regionally or nationally common and/or is moderately easy to replicate - Some enclosure or varied topography means that effects are moderately contained
Low	<p>Landscape less sensitive owing to one or more of the following factors:</p> <ul style="list-style-type: none"> - where features forming basis of a landscape designation are not vulnerable - where prevailing character is robust, and landscape is in good condition and; - topographic variation or enclosure patterns means impacts would be well contained - scale of the landscape is such that the development would have a minor visual influence - landscape type is common and widespread and/or would be moderately easy to replicate - lack of cultural value or associations - lack of tranquillity - very few receptors

Table A2 Magnitude of Impact Values

Effect	Description
Severe	<p>The proposed development would result in a <i>dominant</i> change to the landscape with one or more of the following consequences:</p> <ul style="list-style-type: none"> • Permanent and irreversible changes to the changes to the character of the landscape, through the introduction of highly dominant features, which are wholly uncharacteristic of the landscape; • it would be experienced across an extensive area; • it would be completely incongruent with the landform, scale and pattern of the landscape; • it would be impossible to provide adequate mitigation measures; • it would constitute a highly intrusive alteration or influence on the character and quality of a statutory designated landscape or a landscape that is particularly vulnerable to change. <p>Effects of long term duration ie at least 20 years</p>
Substantial	<p>The proposed development would result in a <i>considerable</i> change to the landscape with one or more of the following consequences:</p> <ul style="list-style-type: none"> • Long term or permanent change to the character of the landscape, through the introduction of intrusive features, which are uncharacteristic; • it would be experienced over a wide area; • it would be at considerable variance with the landform, scale and pattern of the landscape; • it would constitute an intrusive alteration or influence on the character and quality of a statutory designated landscape or a landscape that is particularly vulnerable to change; • there would be little scope for adequate mitigation, where there is a substantial change to landscape character. <p>Effects of long term duration ie at least 20 years</p>
Moderate	<p>The proposed development would result in a <i>moderate</i> change to the landscape with one or more of the following consequences:</p> <ul style="list-style-type: none"> • constitute a moderate change to the landscape character of the area; • be experienced over a moderately sized area; • be discordant with the landform and scale of the landscape; • cannot be completely mitigated for, due to the nature of the proposals or the character of the landscape; • constitute an intrusive alteration or influence on the character and quality of a statutory designated landscape or a landscape that is particularly vulnerable to change. <p>Effects of medium term duration ie at least 5 to 20 years</p>
Slight	<p>The proposed development would result in a <i>minor</i> change to the landscape with one or more of the following consequences:</p> <ul style="list-style-type: none"> • constitute a relatively minor change to the landscape character, • not quite fit the landform and scale of the landscape; • cannot be completely mitigated for, due to the nature of the proposals or the character of the landscape; • Very minor intrusive alteration or influence on the character and quality of a statutory designated landscape or a landscape that is particularly vulnerable to change. <p>Effects of short term duration ie up to 5 years</p>
Negligible	<p>The proposed development would result in a <i>barely perceivable</i> change to the landscape with one or more of the following consequences:</p> <ul style="list-style-type: none"> • barely discernable change to the prevailing character; • it would be generally in keeping with the scale, landform and pattern of the landscape; • measures for mitigation would allow the development to largely blend with the surrounding landscape features and elements; and • would not affecting the character and quality of a statutory designated landscape or a landscape that is particularly vulnerable to change.

Table A3 Impact Significance – Landscape

<i>Sensitivity of receptor Magnitude</i>	High	Medium	Low
Severe	Very high	High	Medium-high
Substantial	High	Medium-high	Medium-low
Moderate	Medium-high	Medium-low	Low
Slight	Medium-low	Low	Negligible
Negligible	Negligible	Negligible	Negligible

Visual assessment

Table A4 Visual receptor sensitivity

Rating	Description
High	Where the view is of <i>principal interest</i> to the receptor, to include: <ul style="list-style-type: none"> - Residential properties - Informal recreation areas; key public rights of way (such as long distance footpaths, National Trails) and navigable waterways in designated landscapes - Culturally valued areas - curtilage of Listed Buildings, Conservation Areas
Medium	Where the view is of <i>moderate interest</i> to the receptor, to include: <ul style="list-style-type: none"> - All other public rights of way - Formal areas of recreation eg playing fields - Roads with scenic views such as within designated landscapes; Scenic drives
Low	Where the view is of <i> cursory interest</i> to the receptor, to include: <ul style="list-style-type: none"> - All other roads; railways - Places of work or commercial premises such as shops, offices - Public buildings such as schools, libraries

Table A5 Visual assessment - Magnitude of Effects

Effect (adverse or positive)	Description
Severe	The proposed development would become the dominant feature of the view to which other elements become subordinate. It would significantly affect and change the character of the area.
Substantial	The proposed development would become a significant and immediately apparent feature of the view. It would affect and change the overall character of the area.
Moderate	The proposals would constitute a visible and recognisable new element within the view which may be readily noticed by an observer.

Slight	The proposals would constitute a minor component of the wider view. Awareness of the development would not have a marked effect on the overall scene.
Negligible	Only a very small part of the proposals is discernable, or it is at such a distance that it is scarcely appreciable. There is consequently very little effect on the view.
None	No part of the development is discernable.

Table A6 Impact Significance – Visual effects

<i>Sensitivity of receptor Magnitude</i>	High	Medium	Low
Severe	Very high	High	Medium-high
Substantial	High	Medium-high	Medium-low
Moderate	Medium-high	Medium-low	Low
Slight	Medium-low	Low	Negligible
Negligible	Negligible	Negligible	Negligible