Beech Avenue, Taverham
Abel Homes
Iain Hill
March 2021

BIDWELLS

GREATER NORWICH LOCAL PLAN REGULATION 19 (GNLP0159R) REPRESENTATIONS ON BEHALF OF ABEL HOMES

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1.0 Introduction

1.1 On behalf of Abel Homes, we are instructed to submit representations to the draft Greater Norwich Local Plan Regulation 19 consultation. The representations relate to the Sites Plan and specifically Policy GNLP0159R - land off Beach Avenue, Taverham.

2.0 Reponses to Draft Greater Norwich Local Plan – Sites Plan

2.1 On behalf of Abel Homes, we strongly support the allocation of GNLP0159R for residential development. The site is entirely deliverable, and capable of making a valuable contribution towards satisfying the Councils' housing needs during the period to 2038.

2.2 The suitability of the site is detailed below. In considering the suitability of the site regard has been given to the specific requirements of Policy GNLP0159R, and technical work undertaken to inform the development of the site.

2.3 However, whilst the principle of the policy is considered sound, in accordance with the tests set out in paragraph 35 of the NPPF, the detailed wording (specifically the identified quantum of the development that can be accommodated on the site) is not sound, as elements are neither effective or justified. Accordingly, minor alterations to Policy GNLP0159R are sought to ensure its soundness. These are considered in further detail below.

Confirmation of Delivery

Suitable

Location

2.4 Taverham is identified in the draft Greater Norwich Local Plan as being within the Urban Fringe. Norwich and the Urban Fringe are identified as the location to accommodate 66% of the housing growth during the period to 2038 on the basis that it is the most sustainable location within the Greater Norwich area and is the focus for significant economic growth.

2.5 Taverham represents a highly sustainable location with good access to Norwich, that has been significantly enhanced by the delivery of the Broadland Northway. Taverham already benefits from a variety of amenities including a pub, a supermarket, takeaways, petrol filling station and a garden centre. In addition, the area is within close proximity of the amenities provided within Thorpe Marriott and Drayton. Nightingale and Ghost Hill Infant schools are located in close proximity of the site, as are Taverham Junior and High Schools. A private school (Langley Preparatory School at Taverham Hall) is located nearby.

2.6 The suitability of the site for development is recognised by the development of the adjacent site under Planning Permission Ref: 20191065 for 93 residential units by Abel Homes (referred to as Taursham Park). Construction at Taursham Park commenced in March 2020 and is due be completed by January 2023. The site would represent a logical extension to Taursham Park and, as detailed below, can be fully integrated with that development.

2.7 In addition, the HELAA Comparison Table included within the Norwich and Urban Fringe Assessment Booklet confirms that there are no issues that, subject to mitigation, could preclude development on the site. The HELAA notes that the connection between the site and the adjacent site would reduce any impact on the character of the village, whilst improving connectivity.

2.8 Accordingly, it is evident that the identification of Taverham, and specifically land covered by Policy GNLP0159R, is fully justified.

Density, Quantum of Development & Site Area

2.9 The draft policy identifies the site as being suitable to accommodate up to 12 homes. The policy does not, unlike other policies in the draft Greater Norwich Local Plan, state either that the figure is an approximate or minimum figure, or that more homes may be accommodated on site, subject to an acceptable design and layout, as well as infrastructure constraints being addressed.

2.10 Based on the identified site area of 0.97ha, the proposed density of development would equate to 12 dwellings per hectare. A figure that is substantially lower than the indicative minimum density set out in Policy 2 of the draft GNLP, which seeks a minimum net density of 25 dwellings per hectare to make efficient use of land.

2.11 An Indicative Masterplan has been prepared for the site by Feilden and Mawson and is attached as Appendix 1. The Indicative Masterplan has been informed by technical evidence, relating to ecology, trees, highways and surface water drainage.

2.12 The Indicative Masterplan details how the site can be developed to provide 25 homes, whilst having regard to the identified site constraints. To accommodate this increase in numbers, the area of the proposed allocation would need to be revised slightly, as detailed on the Indicative Masterplan. The increased area, which is the same ownership, would in the main be used to provide informal open space, as well as a link to the adjacent development in the form of a woodland walk, increasing the size of the wooded area being provided as part of the onsite open space.

2.13 The revised area would result in a site area of approximately 2 hectares. This would give a net density of 18.72 dwellings per hectare in accordance with Policy 2 of the draft GNLP.

2.14 Overall, the Indicative Masterplan demonstrates how a high-quality layout and design providing 25 homes can be comfortably achieved on the site, whilst having regard to the identified site constraints. The site provides a logical extension to Taursham Park, enabling a cohesive link via the woodland open space between the two phases, as demonstrated in Appendix 2.

2.15 In addition, the proposed increase in the number of units would result in an increase in the number of affordable units from 4 to 8; a significant benefit of the number of units being increased.

2.16 On this basis, it is recommended that the wording of Policy GNLP0159R is revised to state that the site will accommodate approximately 25 new homes. To facilitate this amendment, it is necessary to revise the red line and extend the site area to approximately 2 hectares.

2.17 The proposed amendments will ensure that the policy is positively prepared and justified and, therefore, sound.

Vehicular & Pedestrian Access

2.18 The Indicative Masterplan demonstrates how, in accordance with the requirements of the draft policy, the site can connect to the site to the east (Taursham Park).

2.19 The proposed 25 residential dwellings will be served from a new adoptable highway and connecting private driveways. The new adoptable highway will be a single 'Type 6', 5.8m wide shared surface carriageway, designed and constructed in accordance with the Norfolk County Council Residential Design Guide. The new shared surface will be accessed via the existing Phase 1 development, a 'Type 3' adopted carriageway, which in turn, is accessed via Beech Avenue. In accordance with the Norfolk Residential Design Guide, the new shared surface can serve up to 25 residential dwellings.

2.20 The new shared surface will also provide an adoptable pedestrian link to the existing Phase 1 development, which itself provides further pedestrian links to Beech Avenue and local facilities via a 1.5m wide adopted footway. An informal pedestrian link to the adjacent Phase 1 public open space will also be provided through the new public open space.

2.21 The plan attached (Appendix 2) details how the site will connect with Taursham Park and the wider area.

2.22 Accordingly, it is evident that the proposed development is capable of satisfying Criterion 1 of draft Policy GNLP0159R.

Trees

2.23 An Arboricultural Impact Assessment has been prepared by AT Coombes and has been used to inform the preparation of the Indicative Masterplan. A copy of the Assessment is attached as Appendix 3.

2.24 The Assessment demonstrates how a development of 25 homes can take place on the site without impacting on trees. More specifically, the Assessment concludes that no tree removal will be required to deliver the proposed development. The Assessment makes a number of recommendations, relating to demolition and construction, that will be adhered to at the relevant stage of the development.

2.25 Accordingly, it is evident that the proposed development is capable of satisfying Criterion 2 of draft Policy GNLP0159R.

Ecology

2.26 A Preliminary Ecological Appraisal (PEA) has been prepared by Riverdale Ecology and is attached as Appendix 4. The PEA, which has informed the preparation of the Indicative Masterplan, concludes that the habitats within the development are generally common and widespread, existing locally in both larger areas and in higher quality to the site. It goes on to state that assuming no additional loss to the woodland (which is not proposed as part of the development), the loss of the habitats from within the site would be unlikely to affect the overall assemblage of species or the conservation status of any individual species beyond the context of the site.

2.27 The Appraisal identifies a number of mitigation measures, together with opportunities to enhance the wildlife potential of the site through biodiversity net gain. These include, amongst other things, the inclusion of bat and swift boxes, as well the enhancement of woodland flora, and will be addressed at the planning application stage.

2.28 Accordingly, it is evident that the proposed development is capable of satisfying Criterion 3 of draft Policy GNLP0159R.

Minerals & Waste

2.29 The potential to extract minerals will be explored at the appropriate stage of the project.

2.30 Accordingly, it is evident that the proposed development is capable of satisfying Criterion 4 of draft Policy GNLP0159R.

Other

Drainage

2.31 Work undertaken by ASD Consultants has informed the preparation of the Indicative Masterplan in terms of drainage.

2.32 All surface water resulting from the proposed development will be drained via infiltration features, discharging urban run-off directly to the sub grade. All residential run-off (roofs & driveways) will be drained via private permeable paving and rear garden crate soakaways. The proposed adoptable highway will be drained via a traditional piped gravity highway system, discharging to the sub grade via a proposed highway crate soakaway, water quality treatment will be provided by a proprietary 'Downstream Defender' unit.

2.33 All foul water from the proposed development will be drained via a traditional piped gravity system and routed to a new on-site pumping station. The new pumping station will discharge flows via a rising main to the existing public foul water sewer located on the adjacent residential development.

2.34 The drainage strategy for the site is identical to that approved and being constructed on Taursham Park.

Archaeology

2.35 Norfolk County Council's Historic Environment Service have advised that there is little evidence that the proposed development would impact on the historic environment. They have recommended that no conditions be attached to any planning permission. A copy of the advice provided by Norfolk County Council's Historic Environment Service is attached as Appendix 5.

Deliverability and Proposed Housing Trajectory

2.36 Abel Homes are committed to providing contemporary, award winning homes across the region. Abel Homes have demonstrated this dedication, and their commitment to bringing new homes to the district, through a range of recently completed developments, such as the Hops in Hingham (88 dwellings), Swan's Nest, Swaffham (219 dwellings), and The Limes, Little Melton (28 dwellings). In addition, Abel Homes are developing 93 units on the adjacent site (Taursham Park).

2.37 The following Housing Trajectory relating to the site has been informed by robust local evidence, including the development of a range of sites across the GNLP area by Abel Homes, notably Taursham Park.

2.38 Due to the obvious linkages, Abel Homes are keen that the development of the site is undertaken in conjunction with Taursham Park. This will ensure an efficient, cost effective approach whilst minimising any impact on the surrounding community. As a result, Abel Homes are keen to submit an application as soon as the draft Local Plan is submitted to the Secretary of State (summer 2021). Assuming 6 months for the determination of the planning application, housing could start to be delivered on site in 2022, with the development completed within 12 months; well within the first five years of the Local Plan period. The Housing Trajectory has been based on the site accommodating the maximum growth identified within Policy GNLP0159R.

	2022	2023
Units	20	5
Cumulative Total	20	25

Available

2.39 Abel Homes are the freehold owner of the land and as such the site is immediately available for development.

Achievable

2.40 As detailed above, there are no site-specific constraints which could threaten the delivery of residential development on the site. Abel Homes have demonstrated that they are committed and able to achieve the delivery of housing of large-scale housing developments. Therefore, residential development on the site is deemed to be entirely achievable.

Viable

2.41 Abel Homes are confident that the delivery of the site is viable having regard to the policy requirements of the draft GNLP and there are no factors that we are aware of, at this moment in time, that could prevent the delivery of the site.

Statement of Common Ground

2.42 Based on the foregoing, a draft Statement of Common Ground (SoCG) has been prepared by Abel Homes. The SoCG confirms that the site is, in principle, compliant with relevant planning considerations and deliverable. A copy of the draft Statement of Common Ground is attached.

Summary

2.43 As outlined above, the site is entirely suitable for residential development. Taverham is a highly sustainable location, and a preferred location for growth. The foregoing text, as well as the ongoing development of Taursham Park, demonstrates that the site is a suitable location for development in all respects.

2.44 Abel Homes fully supports, the allocation of the site under Policy GNLP0159R. However, as detailed above, to ensure its soundness, a minor alteration to the policy is suggested.

Revised Policy Wording

Policy GNLP0159R

Land off Beech Avenue, Taverham (0.97 ha) is allocated for residential development. The site will accommodate ~~up to~~ approximately ~~12~~ 25 dwellings.

The development will be expected to address the following specific matters:

1. Vehicular and pedestrian access through the site to the east
2. Mitigation for impact on trees and woodland (established through an Arboricultural Impact Assessment)
3. Submission of ecological assessment to identify key ecological networks and habitats to be preserved and enhanced through the development
4. Norfolk Minerals and Waste Core Strategy Policy CS16 applies, as this site is underlain by safeguarded minerals resources. The benefits of extracting the minerals, if feasible, will be taken into consideration

Key

Red text – Proposed Amendments

Strikethrough – Proposed Text to be Removed

APPENDIX 1
PROPOSED MASTERPLAN WITH SITE ALLOCATION BOUNDARY PREPARED BY FEILDEN + MAWSON

Connection to 'Woodland Walk'

Informal POS

Potential 'Trim Track'

Informal POS

POS

T3

Existing dwelling to be retained

42

Vehicular access to existing dwelling retained

Site Under Construction
Planning Application Reference Number: 20191065

RINGLAND ROAD

N

0"

REV	DATE	CHK	AMENDMENTS
A00	08.03.2021	DD	Initial issue

NOTES
...

Legend

Total Site Area- 1.804ha
Total Open Space- 0.441ha

Site Allocation Boundary (GNLP0159R)

G: Timber gate
CF: Close-boarded timber fence
WF: Woven willow fence

Landscape proposals are only indicative. Landscape Architect to confirm detail design of proposals and planting specification

Front gardens:
Rear gardens:
Open Space:
Existing trees

Type 3 Roads
Type 6 Mews
Priavte/Shared Drives Block Paving
Loose Shingled Parking Driveways

House Type/Plot Number (H-2A / 05)

Tree category: (please see AIA for further detail)

Rendered Plots

1:500 0 5m 10m 15m 20m 25m 50m

DO NOT SCALE FROM THIS DRAWING ALL DIMENSIONS TO BE CONFIRMED ON SITE BY THE CONTRACTOR PRIOR TO CONSTRUCTION

Feilden+Mawson
21-27 Lamb's Conduit Street London WC1N 3NL
1 Ferry Road Norwich NR1 1SU
6 Clifton Court Cambridge CB1 7BN
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tel: 01603 629571
tel: 01223 350567
www.feildenandmawson.com

CLIENT
Abel Homes

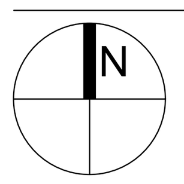
JOB
Residential Development, Beech Avenue, Taverham Phase 2

DRAWING
Proposed Masterplan with Site Allocation Boundary

PLANNING

SCALE	1:500	PAPER	A1	DATE	08.03.2021
JOB	**9350**	DWG	**004**	REV	**A00**

APPENDIX 2
PROPOSED MASTERPLAN IN THE CONTEXT OF PHASE 1 PREPARED BY FIELDEN + MAWSON



REV	DATE	CHK	AMENDMENTS
A00	09.03.2021	DD	Initial issue
A01	09.03.2021	DD	Topography lines turned off

NOTES
...

Legend

Total Site Area- 1.804ha
Total Open Space- 0.441ha

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Landscape proposals are only indicative. Landscape Architect to confirm detail design of proposals and planting specification

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Existing trees

Type 3 Roads
Type 6 Mews
Priavte/Shared Drives Block Paving
Loose Shingled Parking Driveways

House Type/Plot Number (H-2A / 05)
Tree category:
(please see AIA for further detail)
Rendered Plots

1:1000 0 10m 20m 30m 40m 50m 100m

DO NOT SCALE FROM THIS DRAWING   ALL DIMENSIONS TO BE CONFIRMED ON SITE BY THE CONTRACTOR PRIOR TO CONSTRUCTION

\\fm\files\Jobs\Current\9350 Extension of Abel Homes Taverham Site\K-Drawings\03-Current drawings\AA-Master\01-Plan\9350 003 Site Plan.dwg/005 Proposed Plan In Context of Phase 1/ISO full bleed A1 (594.00 x 841.00 MM)/David Drew/3/9/2021 12:23 PM

Feilden+Mawson
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1 Ferry Road Norwich NR1 1SU tel: 01603 629571
6 Clifton Court Cambridge CB1 7BN tel: 01223 350567
email: info@feildenandmawson.com www.feildenandmawson.com

DRAWING
Proposed Masterplan in the Context of Phase 1

CLIENT
Abel Homes

JOB
Residential Development,
Beech Avenue, Taverham Phase 2

PLANNING

SCALE 1:1000	PAPER A1	DATE 09.03.2020
JOB **9350**	DWG **005**	REV **A01**

APPENDIX 3
ARBORICULTURAL IMPACT ASSESSMENT PREPARED BY AT COOMBES

ARBORICULTURAL IMPACT ASSESSMENT
AT LAND TO THE REAR OF 42 RINGLAND ROAD, TAVERHAM

Prepared for Abel Homes Ltd

By A.T. Coombes Associates Ltd.
Chartered Foresters and Consulting Arboriculturists
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TREE SURVEYS

Executive Summary

This assessment outlines the tree constraints that affect the construction of an additional twenty-four dwellings as part of an extension to the adjacent housing development and demonstrates how the retained trees can be protected throughout the development process.

The design has been developed to work in harmony with the surrounding landscape and will incur no tree losses.

All the trees will be provided with proper protection as set out in BS5837:2012 during the construction phase. Protection measures will include erecting temporary protective fencing, temporary ground protection, pre-emptive root pruning and the use of No-Dig surfaces as appropriate.

This assessment forms an important stage in the process of managing and protecting the trees on site in relation to the proposed development. However, it will only ensure the protection of the trees on site if the tree protection measures in the Arboricultural Method Statement are implemented in full and the prescribed system of arboricultural supervision is followed. Tree protection works must be fully integrated into the construction process.

From an Arboricultural standpoint the proposed development will have minimal impact on the retained trees provided the proposed protection methods are carefully implemented.

A.T. Coombes
AT Coombes Associates Ltd.
10 February 2021

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1. Terms of Reference

1.1 The aim of this assessment is to survey trees that may be affected by the construction of an additional twenty-four dwellings as part of an extension to the adjacent housing development.

1.2 The assessment addresses the likely impact of the proposed development on surrounding trees and provides recommendations for the protection of retained trees during construction work based on BS 5837:2012 "Trees in relation to design, demolition and construction-Recommendations".

1.3 The client has provided a topographical survey showing the accurate position of all trees and features on site. Also provided was the proposed layout for the development. These plans have been used to form the basis of the Tree Constraints Plan (TCP, Appendix 3) and Tree Protection Plan (TPP, Appendix 4).

2. Site Description

2.1 The site is an open area with tree cover limited to the woodland to the north, as shown in Figure 1 and a fringe of trees along the western boundary, as shown in Figure 2.

Fig 1: Northern boundary.

Fig 2: Western boundary.

3. Tree Survey Details

3.1 Appendix 1, the Tree Survey Schedule gives the survey findings in tabular form. The schedule contains all the information specified in section 4.4.2.5 of the British Standard. Appendix 2 gives a full explanation of the survey headings.

3.2 The trees were surveyed on 6 January 2021; they were not climbed, but surveyed from ground level.

3.3 The details recorded during the tree survey have been collected independently of any development proposals, and the categorisation of the quality and amenity value of the trees is made purely on arboricultural grounds.

3.4 No assessment of the soil has taken place as part of this report. The British Standard states that a soil assessment should be carried out by a competent person to establish the structure, clay content and potential for volume change of the soil. A survey of this nature is considered outside the scope of this Arboricultural Assessment. For guidance on soil structure in relation to construction advice should be sought from a Structural Engineer. Guidance on foundation depth in relation to building and trees can be found in NHBC Chapter 4.2.

4. Assessment of Tree Constraints

4.1 To facilitate the proper assessment of tree constraints a Tree Constraints Plan (TCP) has been prepared and forms Appendix 3. The plan has been produced as a basis for the assessment of the constraints imposed by existing trees on the proposed design.

4.2 Appendix 3 shows the position of trees marked by a coloured dot matching the retention category status and a reference number (as listed in Appendix 1). Heights (Ht) are marked in metres for each tree, together with the predicted ultimate heights (U/Hgt).

4.3 The plan deals with constraints that the trees may place on the development in two areas as follows:

Below ground Constraints

4.4 The Root Protection Areas (RPA) for the trees are shown as a coloured circle to match the retention category colour. The RPA will be used to help inform the closest positions of any future buildings. The RPA will be protected during any development work with temporary barriers as prescribed by the British Standard.

Above Ground Constraints

4.5 The branch spreads were measured at the four cardinal compass points, with a shape drawn around these points to indicate approximate branch spread, represented by green broken lines on the plan. The ultimate crown spread has been shown with an orange dashed line. This is a predicted distance, and is based on personal experience of how far it is likely the crown will grow.

4.6 A shade pattern has been shown for each tree forming an arc from north west to due east. This gives an indication of the patterns of shadows created by the trees around mid-day in the summer. This is as recommended in BS5837:2012 (Section 5.2.2) but actual shade patterns throughout the year will vary widely. If shading is likely to be a serious constraint a more detailed analysis of shade pattern using proprietary software may be deemed necessary.

5. Arboricultural Impact Assessment

5.1 A total of twelve individual trees and two tree groups were included in this report. Groups contain trees forming continuous features or clusters with similar characteristics.

5.2 One pedunculate oak (T11) has been classed as Category A which is the highest category available under the British Standard 5837:2012. This tree is of considerable size and age and offers valuable visual amenity and wildlife habitats.

5.3 Six individual trees (T4, T5, T7, T8, T9 and T10) and one tree group (G1) have been classed as Category B. These trees are generally in good condition and confer landscape values. They should be retained where possible in the context of a development.

5.4 Five individual trees (T1, T2, T3, T6 and T12) and one tree group (G2) have been classified as Category C. These trees are small or in poorer condition and do not play such a significant role in the local landscape. C category trees are usually of such a quality that the Local Authority may consider it acceptable for them to be removed for development purposes, if required.

5.5 Any trees that are retained will be provided with their proper protection according to BS5837:2012 regardless of which category they have been placed in.

5.6 The tree constraints for each element of the development, are considered separately below:

Element	Detail
Demolition of Existing Buildings and Removal of Existing Surfaces	Some of the existing buildings are within the RPA of adjacent trees. Their foundations and associated hard standing are likely to be inhibiting the extent of rooting. However, demolition must take place in a top-down, pull-back method, ensuring that debris falls away from trees outside of the RPAs. Where surfaces are to be removed within the RPA of these trees, this work must be carried out very carefully and under arboricultural supervision. Hand held tools, or appropriate machinery (such as an excavator fitted with a non-toothed ditching bucket) will be used, with due care and attention paid to any roots that may be underneath the surface. If roots are found they must be covered with good quality topsoil to a depth no greater than 150mm within 24 hours.
Plots 94 – 106	There are no tree constraints with these aspects of the development.
Plot 107	The proposed dwelling for Plot 107 encroaches into the RPA of one B category pedunculate oak (T10), amounting to less than 7% of the overall RPA of the tree. Therefore pre-emptive root pruning will be carried out to minimise the damage caused to roots, should they be present. Temporary ground protection will be used to minimise soil degradation and compaction where traffic is likely to require access during the construction process. This is shown on Appendix 4 – TPP as orange crosshatch and detailed further in Appendix 5 – AMS. The proposed dwelling is situated within the current branch spread of the pedunculate oak (T10) which will need facilitative pruning to provide clearance between the outer branches and the new building and provide sufficient clearance for construction works. The amount of facilitative

Element	Detail
Plot 107 Cont.	crown pruning will be agreed and carried out prior to the commencement of construction works. T7, T8 and T10 will cast some shading onto the proposed dwelling. This needs to be mitigated by adequate fenestration, light gathering features or placing habitable rooms away from the shaded areas.
Plot 108	The proposed dwelling encroaches into the RPA of one B category tree within G1, amounting to less than 2% of the overall RPA of the tree. Therefore pre-emptive root pruning will be carried out to minimise the damage caused to roots, should they be present. The proposed dwelling is situated within the current branch spread of one B category tree within G1, which will need facilitative pruning to provide clearance between the outer branches and the new building and provide sufficient clearance for construction works. The amount of facilitative crown pruning will be agreed and carried out prior to the commencement of construction works. Temporary ground protection will be used to minimise soil degradation and compaction where traffic is likely to require access during the construction process. This is shown on Appendix 4 – TPP as orange crosshatch and detailed further in Appendix 5 – AMS. One B category tree within G1 will cast some shading onto the proposed dwelling. However, this will not be for a large portion of the day and with increased summer temperatures will offer valuable shade during the hottest part of the day.
Plots 109 and 110	There are no tree constraints with these aspects of the development.
Plot 111	The proposed garage for plot 111 encroach into the RPA of one B category tree within G1, amounting to less than 4% of the overall RPA of the tree. Therefore pre-emptive root pruning will be carried out to minimise the damage caused to roots, should they be present. Temporary ground protection will be used to minimise soil degradation and compaction where traffic is likely to require access during the construction process. This is shown on Appendix 4 – TPP as orange crosshatch and detailed further in Appendix 5 – AMS. The proposed garage for plot 111 is situated within the current branch spread of one B category tree within G1, which will need facilitative pruning to provide clearance between the outer branches and the new building and provide sufficient clearance for construction works. The amount of facilitative crown pruning will be agreed and carried out prior to the commencement of construction works. The proposed dwelling will experience minor shading. However, this is not considered to be a significant constraint which requires mitigation.
Plots 112 to 118	There are no tree constraints with these aspects of the development.

Element	Detail
Pumping Station	The proposed pumping station encroaches into the RPA of two B category sycamore (T4 and T5), amounting to the maximum of 12% of the overall RPA of the trees. Therefore pre-emptive root pruning will be carried out to minimise the damage caused to roots, should they be present. The proposed pumping station is situated within the current branch spread of one B category tree T5, which will need facilitative pruning to provide clearance between the outer branches and the new building and provide sufficient dearance for construction works. The amount of facilitative crown pruning will be agreed and carried out prior to the commencement of construction works. Temporary ground protection will be used to minimise soil degradation and compaction where traffic is likely to require access during the construction process. This is shown on Appendix 4 – TPP as orange crosshatch and detailed further in Appendix 5 – AMS.
Woodland Path	The proposed woodland path is routed through the B category tree group G1 and it will need to be constructed using a No-Dig surface at or above ground level. The key point is that it will be constructed without excavation. The surface should be designed by an engineer to ensure it is suitable for the traffic and loading that will be experienced when it is in use. It is likely that a two dimensional cellular confinement system will provide the best solution. There are several manufactures of cellular confinement systems including "Cellweb" by Geosyn, Geocell by Terram or another proprietary two dimensional cellular confinement system. The area in question has been marked with purple hatching on the Tree Protection Plan (TPP, Appendices 4). The surface can be no closer than 0.5m from the stem of any retained tree. Any design must be approved by the consulting arborist and the Local Authority Tree Preservation Officer. The construction of the no-dig surface must be supervised by the consulting Arboriculturist.
Site Access	There are no tree constraints associated with this aspect of the development.
Garden Fencing	Many of the boundary fences will be within the RPA of retained trees. To ensure that the trees are not damaged when putting the fencing in place, the post holes for the fence will be excavated using an airspade or hand tools. If roots over 25 mm diameter are found the position of the hole will be adjusted to avoid them. If roots under this diameter are found they will be pruned to the edge of the hole using a sharp handsaw or secateurs. The holes will then be lined with a root barrier material to prevent the leaching of any phytotoxic material from the wet concrete. As there may be the need for adjusting lengths between post holes, this method is not suitable for fixed panel fences. Close board fencing may provide a satisfactory alternative.

Element	Detail
Services and Soakaways	No details of any new service runs have been provided. They should be routed to avoid the RPAs of trees. If this is not possible, special techniques must be employed to place the services within the RPA of the trees. The British Standard suggests a range of trenchless methods suitable for various applications including microtunnelling, surface launched directional drilling, Pipe ramming and Impact Moleing/thrust boring. It is important common ducts should be used where it is not possible to avoid the RPA. Further guidance on installing underground services adjacent to trees can be found in the NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Volume 4 Issue 2). This document outlines a number of techniques that may be used for trenching near trees, including trenchless techniques, discontinuous trenching and hand digging. It will be necessary to prepare detailed plans for any services that run thorough the RPA of retained trees. This should be produced in conjunction with an arboriculturist and include allowance for the space needed for access for the installations, and the levels across the proposed area. Any above-ground apparatus including CCTV cameras and lighting should also be positioned to avoid the need for any regular or detrimental pruning to the trees. Minor facilitative pruning is acceptable. However, positions that require repetitive and significant tree work must be avoided.

6. Tree Management and Replanting Proposals

6.1 Remedial tree work has been specified in column 12 of Appendix 1 for arboricultural and health and safety reasons. The work is not considered urgent, but it is recommended that it is carried out within 12 months of the date of this report, or prior to the commencement of works, whichever is soonest.

6.2 This schedule does not refer to, and is superseded by, any requirements for tree felling for development purposes that may be required.

6.3 Please note that the inspection of trees on site was of a preliminary nature, gathering, as set out in the British Standard, only information needed to assess tree constraints. While any obvious tree defects that may constitute a risk have been recorded in the survey and appropriate remedial work specified this assessment does not constitute a full tree health and safety survey. In particular inaccessible trees, trees with heavy Ivy cover and trees within groups have not been inspected fully and dimensions estimated. However, any comments on the trees relating to health and safety remain valid for 12 months from the date of this report after which the trees will require re-inspection.

7. Further Arboricultural Input into the Design Process, Construction and Aftercare

7.1 A Tree Protection Plan (TPP), Arboricultural Method Statement (AMS) and Timetable for implementation of Tree Protection Works form Appendices 4, 5 and 6, respectively.

7.2 The AMS contains a timetable for implementation of the tree protection works. No work will commence until the protective fencing is in place.

7.3 If the proposed layout of the development changes it will be necessary to revise this report.

8. Permissions and Constraints

8.1 It must be ascertained whether there are any Tree Preservation Orders on any trees within the site. If there are, written permission must be obtained from the Local Authority prior to commencing any work that may affect the condition of the protected trees. If the site is within a Local Authority Conservation Area the Local Planning Authority must be given 6 weeks' notice of any works on the trees.

8.2 To assist the planning process the LPA should be provided with a copy of this report and invited to comment on the proposals.

8.3 When dealing with developments close to trees, special attention should be paid to related legislation ensuring that the Wildlife and Countryside Act (1994), Conservation of Habitats and Species Regulations (2010) and the Countryside Rights of Way Act (2000) are adhered to. It must be ensured that nesting birds and protected species such as bats and reptiles are considered and protected.

9. Conclusions

9.1 All trees can be retained and protected as set out in BS5837:2012 throughout the works.

9.2 Some of the existing buildings are within the RPA of retained trees and must be demolished carefully, and existing hard standing is to be lifted under arboricultural supervision.

9.3 The majority of buildings have been positioned outside the RPA of adjacent trees. There are four instances where there is minor encroachment into the RPA. This will be addressed by carrying out pre-emptive root pruning.

9.4 The proposed woodland path will be constructed using No-Dig surfacing.

9.5 One dwelling will experience significant shading cast by neighbouring trees which will be mitigated with adequate fenestration and placing habitable rooms away from shade.

9.6 Facilitative pruning will be required, either prior to construction to allow enough space between the trees and the buildings, or in the future after construction, to maintain adequate clearance.

9.7 Post holes for garden fences within the RPA of retained trees will be excavated carefully to ensure that major roots are not severed the surrounding roots are protected from leachates from the concrete.

A. T. Coombes NDF, MSc (Arb & Urban For), FICFor, PDArb (RFS) MArborA
A.T. Coombes Associates Ltd
10 February 2021

APPENDIX 1-
TREE SURVEY SCHEDULE

SITE:LAND TO THE NORTH OF 42 RINGLAND ROAD, TAVERHAM, NORWICH

SURVEY COMPLETED: 06/01/2021

1	2	3.0	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	**Species**	**Ht (m)**	**Stem dia (mm)**	**No of Stems**	**Branch Spread**				**Height and Direction of First Branch (m)**	**Mean Canopy Ht**	**Life Stage**	**Physiological Condition**	**Structural Condition**	**Preliminary Tree work**	**Estimated remaining contribution (Yrs)**	**Cat grading**	**Radius of RPA (m)**	**RPA (sq m)**
					N	E	S	W										
T1	Cotoneaster	5.1	307	4	4.1	4.1	4.1	4.1	N/A	1.5	E/M	Good	Good	No works	10+	C2	3.7	42.7
T2	Cherry plum	2.9	100	1	1.5	1.5	1.5	1.5	N/A	N/A	E/M	Good	Good	No works	10+	C1	1.2	4.5
T3	Magnolia	3.4	168	3	3.4	3.4	3.4	3.4	N/A	N/A	S/M	Good	Good	No works	10+	C1	2.0	12.7
T4	Sycamore	15.0	810	1	7.1	7.1	7.1	7.1	N/A	N/A	M	Good	Good	No works	20+	B2	9.7	296.9
T5	Sycamore	16.0	540	1	5.0	5.0	5.0	5.0	N/A	N/A	M	Good	Good	No works	20+	B2	6.5	131.9
G1	Sweet chestnut, pedunculate oak, sycamore, horse chestnut	16.0	520	1	6.0	6.0	6.0	6.0	N/A	N/A	M	Good	Moderate - deadwood in crowns, some minor hollowing at base of sycamore	No works	20+	B2	6.2	122.3
T6	Pedunculate oak	9.4	330	1	2.5	2.5	2.5	2.5	N/A	N/A	E/M	Fair - thin crown	Moderate - suppressed	No works	10+	C2	4.0	49.3
G2	Portugal laurel and cherry laurel	4.0	100	1	3.0	3.0	3.0	3.0	N/A	N/A	S/M	Good	Good	No works	10+	C2	1.2	4.5
T7	Sweet chestnut	16.5	720	1	6.7	6.7	6.7	6.7	N/A	N/A	M	Good	Good	None	20+	B2	8.6	234.5
T8	Sweet chestnut	15.5	650	1	5.2	5.2	5.2	5.2	N/A	N/A	M	Good	Good	None	20+	B2	7.8	191.2
T9	Sweet chestnut	15.3	520	1	5.7	5.7	5.7	5.7	N/A	N/A	M	Good	Good	None	20+	B2	6.2	122.3
T10	Pedunculate oak	16.1	700	1	5.8	5.8	5.8	5.8	N/A	N/A	M	Good	Good	None	20+	B2	8.4	221.7

SURVEYED BY A.T. COOMBES ASSOCIATES

# denotes estimated dimensions due to lack of access to tree

APPENDIX 1-
TREE SURVEY SCHEDULE

SITE:LAND TO THE NORTH OF 42 RINGLAND ROAD, TAVERHAM, NORWICH

SURVEY COMPLETED: 06/01/2021

1	2	3.0	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	**Species**	**Ht (m)**	**Stem dia (mm)**	**No of Stems**	**Branch Spread**				**Height and Direction of First Branch (m)**	**Mean Canopy Ht**	**Life Stage**	**Physiological Condition**	**Structural Condition**	**Preliminary Tree work**	**Estimated remaining contribution (Yrs)**	**Cat grading**	**Radius of RPA (m)**	**RPA (sq m)**
					N	**E**	**S**	**W**										
T11	Pedunculate oak	15.2	1030	1	6.5	6.5	6.5	6.5	N/A	5.5	M	Fair - thin crown	Moderate - deadwood throughout crown	Remove loose and dangerous deadwood from crown	40+	A3	12.4	480.0
T12	Ash	12.5	380	1	2	4	4	4	N/A	5	S/M	Fair - thin crown	Moderate - one sided	No work	10+	C2	3.4	35.5

SURVEYED BY A.T. COOMBES ASSOCIATES

# denotes estimated dimensions due to lack of access to tree

Appendix 2: Notes on the Column Headings in Appendix 1

Col#	Title	Notes
1	Tree No.	Tree numbers to correspond with those shown on the TCP.
2	Species	Each tree has been identified and the common name given in each case.
3	Ht (m)	Height of the tree
4	Stem dia (mm)	The stem diameter measured in millimetres at 1.5 metres above ground. For multi-stemmed trees the stem diameter has been calculated according to the formula given in BS 5837:2012. For trees with up to 5 stems, each stem has been measured at 1.5m, squared and added together. The diameter shown is the square root of the total. For multi-stemmed trees with over 5 stems a sample of five diameters has been taken at 1.5m, averaged and squared, then multiplied by the total number of stems. The square root of this sum gives the stem diameter figure.
5	Number of Stems	Total number of stems on the tree.
6	Branch Spread	The branch spread measured in metres from the stem to the tip of the outer branches has been measured in four directions of the compass North, South, East and West.
7	Height and Direction of First Branch spread (m)	First significant branch and direction of growth (relative to the four cardinal compass points).
8	Canopy Ht	Mean height of the canopy above ground level.
9	Life Stage	The life stage of the tree has been assessed into one of the following categories: Y =Young, SM = Semi Mature, EM = Early Mature M = Mature, OM = Over mature and V = Veteran.
10 and 11	Condition	The British Standard recommends that a note is made of the structural and physical condition of the tree.

Col#	Title	Notes
12	Preliminary Management Recommendations	This column includes all work considered necessary to, as far as is practicable, ensure health and safety and for the good arboricultural management of the trees. These works are not associated with the development proposals. All work to be carried out to BS 3998: 2010 "Tree Work-Recommendations". Recommendations given in respect of Health and Safety remain current for 12 months from the date of this assessment after which further inspection is recommended. It should be noted that trees are dynamic structures subject to the forces of nature, which can fail without showing external symptoms.
13	Estimated remaining Contribution (Yrs)	The estimated remaining contribution of each tree in years has been assessed, using personal experience, into the following groupings: < 10 = Less than 10 years 10+ years = More than 10 years 20+ years = More than 20 40+ years = More than 40 years
14	Category grading	U = Those in such a condition that any existing value would be lost within 10 years and which should in the current context, be removed for reasons of sound arboricultural management. (Trees that have serious, irremediable structural defects, such that their early loss is expected due to collapse or ill health including trees that will become at risk due to the loss of other U category trees). **A** = Those trees of high amenity quality and value in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested) 1) Trees that are particularly good examples of their species if rare unusual or essential components of groups or formal or semi-formal arboricultural features 2) Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views in or out of the site, or those of particular visual importance. 3) Trees groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran tree or wood pasture)

Col#	Title	Notes
14 cont	Category grading cont	**B** = Those of Moderate quality and amenity value: those in such a condition as to a significant contribution (a minimum of 20 years is suggested) 1) Trees that might be included in the high category but are downgraded because of impaired condition (e.g. remediable defects) 2) Trees and woodland that forming distinct landscape features but do not form essential components 3) Trees with clearly identifiable conservation or other cultural benefits. **C** = Those of low quality and amenity value currently in adequate condition to remain until new planting is established (minimum of 10 years is suggested) or trees under 150 mm stem diameter. 1) Tree not qualifying in higher categories 2) Trees present in groups or woodlands but not with a significantly higher landscape value and or offering low or temporary screening benefit. 3) Trees with very limited conservation or other cultural benefits. Note: Category C trees are the least suitable for retention, where they would impose a significant constraint on the development their removal for development purposes may be considered acceptable by the LPA. Trees with a stem diameter under 150mm could be considered for relocation.
15	Radius of RPA (m)	The distance that would form the radius of a circular protection zone is given in metres calculated by multiplying the stem diameter given in column 4 by 12. The methods for calculating the stem diameter of multi-stemmed trees is given in section 4 above.
16	RPA (m^2)	The area of the RPA is given in square metres calculated by the following formula: Single Stemmed Trees; $$RPA\ m^2 = \left(\frac{(stem\ diameter\ mm\ @\ 1.5m \times 12)}{1000}\right)^2 \times 3.142$$ The methods for arriving at the stem diameter for multiple stemmed trees are described above in the notes for column 4.

Drawing Title:

Appendix 3 - Tree Constraints Plan

Site:

Land to the Rear of 42 Ringland Road, Taverham

Client:

Abel Homes Ltd

NORTH

To Scale 1:500 at A2

KEY

- A Category RPA
- B Category RPA
- C Category RPA
- Current Crown Spreads
- Ultimate Branch Spreads
- Shade Patterns

Drawn By: RG	Date: 10/02/2021

TREE SURVEYS

A. T. Coombes Associates Ltd

mail@atcoombes.com
01603 759618

Drawing Title:

Appendix 4 - Tree Protection Plan

Site:

Land to the Rear of 42 Ringland Road, Taverham

Client:

Abel Homes Ltd

NORTH

To Scale 1:500 at A2

KEY

- A Category RPA
- B Category RPA
- C Category RPA
- Trees For Removal
- Current Crown Spreads
- Line of Protective Tree Barriers
- Line of Pre-emptive Root Pruning
- Temporary Ground Protection
- No-Dig Surfacing
- Construction Exclusion Zone — CEZ

Drawn By: RG	Date: 10/02/2021

TREE SURVEYS

A. T. Coombes Associates Ltd

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01603 759618

Appendix 5: Arboricultural Method Statement for a Proposed Development at Land to the Rear of 42 Ringland Road, Taverham

1. Scope of the Works

1.1 The document provides a methodology for protection of trees during the demolition of the existing buildings and the construction of twenty-four new dwellings at the above site, and should be read in conjunction with the Tree Protection Plan Appendix 4 and Timetable for Protection Works Appendix 6.

1.2 The main features in the protection of the retained trees on site are as follows:

- Careful demolition of existing buildings
- Provision of temporary protective barriers
- Provision of temporary ground protection
- Use of a No-Dig surfaces
- Use of pre-emptive root pruning
- Audited arboricultural site monitoring

1.3 A meeting between the site manager/main contractor and a consulting arboriculturist must take place prior to construction work commencing so that the above protection measures set out in this document can be discussed and agreed. At this point a list of contact details for all relevant parties will be produced and circulated including the Tree Officer of the Local Planning Authority.

1.4 Protective measures must be in place prior to any ground or construction works take place.

2. Timing of Works

2.1 Tree protection works will be completed as detailed below according to the attached timetable Appendix 6.

2.2 The exact commencement date is not known. However, the timetable provided gives the order that the works need to be implemented to ensure the trees are fully protected and states when specific arboricultural input will be required.

3. Tree Protection Barriers

3.1 Remaining trees will be protected by forming Construction Exclusion Zones (CEZ) as shown on Appendix 4 the Tree Protection Plan (TPP).

3.2 Temporary barriers will be erected as shown by the thick green lines on the TPP to form the Construction Exclusion Zone (CEZ). The barriers will consist of 2m tall welded mesh panels (Heras) supported on rubber or concrete feet. The fence panels should be joined together using a minimum

of two anti-tamper couplers installed so they can be removed from the inside of the fence. The distance between couplers should be at least 1m and be uniform throughout the fence.

3.3 Panels should be supported on the inner side by stabilizer struts which should normally be attached to a base plate and secured with ground pins. Where the fence will be erected on hard surfacing or it is otherwise unfeasible to use ground pins the struts should be mounted on a block tray.

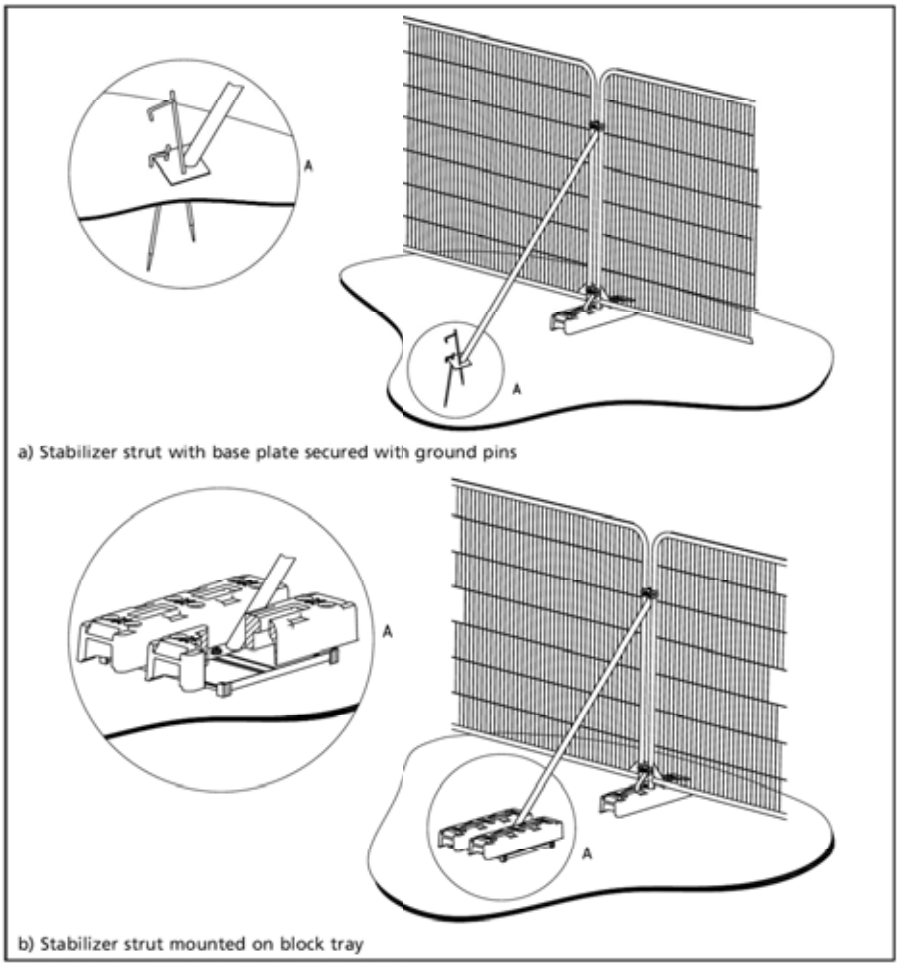

Fig 1: Temporary protective fencing as recommended by the British Standards (2012).

3.4 Figure 1 is an extract from BS5837:2012 showing the method of supporting the panels with ground pins and a block mounted tray for use on hard surfaces. Stabiliser struts should be fitted at each panel junction.

3.5 At least ten all-weather notices should be erected on the barriers forming each CEZ stating "Construction Exclusion Zone – No Access ". These should face outwards towards the work area. Signs must be maintained in good condition and remain in place until completion of the works.

3.6 Barriers will be maintained throughout the duration of the works, ensuring that access is denied to the CEZ throughout the process.

4. Demolition of Existing Buildings

4.1 The existing buildings will be removed prior to the development. Protective fencing, as set out in the AMS, will be put in place prior to the commencement of works to protect retained trees.

4.2 Where buildings to be demolished are within the RPA of retained trees, all machinery will remain outside the RPA, and operate in a "top down, pull back" method.

4.3 Where surfaces are to be removed within the RPA, this work must be carried out very carefully and under arboricultural supervision. Hand held tools, or appropriate machinery (Such as an excavator fitted with a non-toothed ditching bucket) will be used, with due care and attention paid to any roots that may be underneath the surface. If roots are found they must be covered with good quality topsoil to a depth no greater than 150mm within 24 hours.

5. Temporary Ground Protection

5.1 Temporary ground protection will be required as shown on the TPP with orange crosshatching. The ground protection should be constructed as follows depending on the type of traffic that will use it:

- Pedestrian traffic only – a single thickness of scaffold boards on top of a driven scaffold frame to form a suspended walkway, or on top of a compression resistant layer (100mm woodchip) laid on top of a geotextile membrane.
- Light plant up to a gross weight of 2t, proprietary ground protection boards linked to one another on top of a compression resistant layer (150mm woodchip) laid on a geotextile membrane.
- Plant exceeding gross weight of 2t, a specification devised by an engineer will be designed in conjunction with the arboricultural consultant to support the loading that the ground will be subjected to.

5.2 Compaction of the soil can occur from a single pass of a heavy vehicle, especially in wet conditions, and therefore the ground protection must be put in place before any access is allowed.

6. Construction of the No-Dig Woodland Path

6.1 The proposed woodland path is shown cross hatched in purple on the Tree Protection Plan Appendix 4 require a No-Dig method of construction. Within the hatched zone no excavation is allowed.

6.2 The proposed footpath will be constructed using a 2 dimensional cellular confinement system which will be placed on the existing ground level and covered with clean woodchip of a local provenance. The path will be edged with softwood timber supported with 30 cm treated softwood pegs.

7. Pre-emptive Root Pruning

7.1 Pre-emptive root pruning will take place just outside foundations of the new buildings to minimise injurious damage to the root system of the neighbouring trees whilst excavating. The position of this work has been shown as a thick light blue line on Appendix 4 – TPP.

7.2 This will be carried out by excavating a trench at most 500mm outside the line of the foundations in the area shown on the TPP using hand tools or an airspade. Any roots found during this excavation will be severed using a sharp handsaw or secateurs. This will ensure that the roots are not ripped or torn, and will have a good point from which to re-grow, and will have a chance to occlude and prevent fungal pathogens from entering.

7.3 Once the root pruning has taken place, rootbarrier material will be put in place to prevent roots entering the foundation area, or any leachates from the wet concrete affecting the tree roots.

7.4 This work will be carried out by a suitably trained operative or under arboricultural supervision.

8. Site Huts and Temporary Buildings

8.1 All site huts and temporary buildings will be sited outside the CEZ.

9. Additional Precautions

9.1 The movement of plant in proximity to retained trees should be conducted under the supervision of a banksman to ensure adequate clearance from the branches of the trees. Hydraulic cranes, forklifts, excavators or piling rigs (other than small rigs used for mini piling) must be avoided in the immediate vicinity the crown of the trees.

9.2 Cement, oil, bitumen or any other products which spillage would be likely to be detrimental to tree growth should be stored well away from the outer edge of the RPA of retained trees. Precautions should include ensuring all toxic liquids are stored in fully bunded containers. Equipment such as barriers or sandbags must be available on site to deal with any accidental spillages that may occur.

9.3 Lighting of fires on site should be avoided. Where they are unavoidable they must be at such a distance from retained trees that there is no risk of the heat causing fire damage to the trunk or branches. Full account must be taken of wind direction. Fires must be attended at all times until they are completely extinguished.

10. Service Trenches

10.1 No details of new service runs have been provided at this stage. They should be routed to avoid the RPAs of trees. If this is not possible, special techniques must be employed to place the services within the RPA of the trees. The British Standard suggests a range of trenchless methods suitable for various applications including microtunnelling, surface launched directional drilling, Pipe ramming and Impact Moleing/thrust boring. It is important common ducts should be used where it is not possible

to avoid the RPA. Further guidance on installing underground services adjacent to trees can be found in the NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Volume 4 Issue 2). This document outlines a number of techniques that may be used for trenching near trees, including trenchless techniques, discontinuous trenching and hand digging.

10.2 It will be necessary to prepare detailed plans for these services that should be produced in conjunction with an arboriculturist, and include allowance for the space needed for access for the installations, and the levels across the proposed area.

10.3 Any overground services including CCTV must also be positioned to avoid the need for any regular or detrimental pruning to the trees.

11. Arboricultural Supervision and Aftercare

11.1 Arboricultural/site monitoring will be carried out throughout the construction phase by a nominated arborist who will be responsible for consultation with the Local Authority's Tree Officer.

11.2 The arborist will complete regular site visits to check that the tree protection measures are being carried out. The frequency of the visits will be dictated by the level of activity and degree to which the tree protection measures are being respected. A note of the date of each visit and a summary of the findings will be forwarded to both the Tree Officer and the Main Contractor to provide an audit trail enabling the proper implementation of the tree protection measures to be checked and verified.

11.3 There are four key stages where on-site arboricultural advice will be needed

- Prior to commencement, to review the contents of the AMS, and deal with any queries the main contractor may have.
- To confirm that the protective fencing and ground protection is in place.
- To ensure the No-Dig surface is in place prior to commencement of works within the site.
- To supervise pre-emptive root pruning.

11.4 On completion of the works the trees will be inspected by the arborist to check the condition of the trees and advise if any remedial work is necessary.

A.T. Coombes Associates Ltd
10 February 2021

Appendix 6: Timetable for Tree Protection Works at Land to the Rear of 42 Ringland Road, Taverham

Item	Operation *	**Before Commencing Construction Works**	**During Construction Works**	**On Completion**
1.	Carry out a pre-commencement site meeting to discuss any tree protection matters arising.	X		
2.	Carry out tree work as detailed in Appendix 1.	X		
3.	Erect temporary protective fencing (thick green line) on edge of the CEZ as specified in the AMS and TPP and put temporary ground protection in place (Orange Hatching).	X		
4.	Erect warning signs on fencing around each CEZ stating "Construction Exclusion Zone - Keep Out".	X		
5.	Maintain Protective fences and signs in good condition.		X	
6.	Carry out pre-emptive root pruning.		X	
7.	Construct No-Dig footpath.		X	
8.	Arboricultural supervision and advice including site visits during the course of the works to check the CEZ and liaison with the Local Authority.	X	X	X
9.	Remove protective fencing.			X
10.	Check condition of the protected trees and consider if remedial works are necessary.			X
	** All work to comply with the attached Arboricultural Method Statement and BS5837: 2012 Trees in relation to design, demolition and construction - Recommendations"*			

APPENDIX 4
PRELIMINARY ECOLOGICAL APPRAISAL (PEA) PREPARED BY RIVERDALE ECOLOGY

RIVERDALE ECOLOGY

Preliminary Ecological Appraisal

Residential Development, Beech Avenue Phase 2, Taverham, Norfolk **January 2021**

Registered Office

60 Norwich Road

Stoke Holy Cross

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RIVERDALE ECOLOGY

Report For: Abel Homes

Neaton Business Park

Norwich Road

Watton, IP25 6JB

Report Version	Author	Reviewed By	Comments	Date
FINAL	Danny Thomas CEcol MCIEEM	Rhianydd Harbord BMUS PGDIP	Issued for Comment	29/01/2021

Contents

Appendices

Executive Summary

Riverdale Ecology Ltd were commissioned by Abel Homes on behalf of the landowners in December 2020 to carry out a Preliminary Ecological Appraisal (PEA) of a potential development site to the north of Ringland Road, Taverham, Norfolk; situated around Ordnance Survey Grid Reference TG 15138 14258. The appraisal was carried out in order to inform a planning application for a residential development at the site.

The purpose of this PEA report is to establish the current biodiversity value of the site, to identify any potential ecological constraints or ecological impacts associated with the proposed development and provide recommendations for additional survey work to further evaluate any impacts that may risk contravention of legislation or policy relating to protected species and nature conservation.

The Application Site is roughly triangular in shape comprising land and outbuildings surrounding an existing property located on Ringland Road, Taverham on the southwest outskirts of Norwich and within the administrative area for Broadland District Council. Existing access is from Ringland Road on the southern edge of the site.

The Application Site is approximately two hectares in area comprising a collection of outbuildings including stables, a paddock and part of the garden of the existing property. Also within the site is an area of broadleaved deciduous woodland which is part of a larger area of woodland and parkland extending over approximately 20 hectares. The site is bounded to the south by Ringland Road and to the east by a construction site for a large residential development (Beech Avenue Phase 1). To the west and northwest is Wensum Valley Golf Course.

The development proposal is for the demolition of the outbuildings and construction of 26 new residential dwellings with associated landscaping, utilities and a new access connected to the neighbouring development site on the eastern edge

The intrinsic value of the habitats on-site within a defined geographic context is generally considered to be of importance at site level only. The majority of the site comprises improved grassland which has limited biodiversity value and is widespread and abundant locally. The woodland within the site boundary is considered to be high value providing habitat for a range of wildlife and it is listed as priority habitat on the Natural England Priority Habitat Inventory for Deciduous Woodland. The woodland has local value as it provides connectivity in the form of a continuous woodland belt connecting woodland to the south and north of the Application Site.

The habitats within the development footprint are generally common and widespread existing locally in both larger area and higher quality to the site. They do offer some opportunities as habitat for protected or noteworthy species but assuming no additional loss of woodland the loss of the remaining habitats from within the site would be unlikely to affect the overall assemblage of species or the conservation status of any individual species beyond the context of the site.

The following ecological constraints have been identified within the site:

- The woodland is Habitat of Principal Importance under the NERC Act and is recognised as valuable habitat for wildlife and provides essential habitat connectivity within the landscape.
- Mature trees within woodland have potential to support roosting bats and the woodland is likely to be important foraging habitat for bats which could be disrupted by artificial lighting.
- There is suitable nesting habitat for common and widespread bird species within the trees and shrubs within the site.
- The site could support hedgehogs which are vulnerable to impacts from development; and

Mitigation measures recommended include:

- The woodland is a Habitat of Principal Importance (Lowland Mixed Deciduous Woodland) and is valuable habitat for a variety of wildlife. The remaining extent of the woodland should be retained and protected by integrating it into the landscape design for the site. New tree planting is recommended between the woodland and the edge of the development site boundary.

- Mature native trees on the western edge of the site which fall within the property boundaries of plots 107, 108 and 111 should be retained to protect the integrity of the woodland connectivity is maintained following the sale of the properties.
- **Further surveys for bats will be required if any trees are removed from the woodland**. No additional trees are anticipated to be removed to accommodate the proposed development, however, if this changes, any trees identified for removal must undergo a Preliminary Roost Assessment to determine if there are any Potential Roost Features (PRF) capable of supporting roosting bats. Additional surveys may be required if PRF are identified and this may include an aerial inspection of the PRF and/or bat activity surveys prior to the removal of the tree.
- At least 6 Schwegler bat boxes or equivalent woodcrete bat boxes should be installed on trees on the woodland edge to compensate for the removal of trees prior to the site visit.
- It is recommended that directional lighting is used to avoid illuminating habitat which could be utilised by bats. Of particular importance for this development site is to avoid light spill across the woodland and woodland edge habitat which are likely to provide opportunities for roosting, commuting and foraging for bats locally.
- Any clearance of suitable nesting vegetation should be undertaken outside of the bird nesting season (from 1st March to the 31st August, inclusive) where appropriate. If this is not possible a detailed inspection for nesting birds should be carried out by a suitably qualified ecologist no more than 48 hours prior to removal of vegetation.
- Consideration should be given to hedgehogs during construction and hedgehog friendly features included into the design of the development. Hedgehog highways should be maintained between gardens through installation of hedgehog tunnels or simple gaps in the fences to maintain connectivity across the site.

Possible opportunities to enhance the wildlife potential, appropriate to this site, in line with NPPF policies to achieve NET GAIN in biodiversity through planning include:

- The landscape plan for the site should include the provision of native species-rich hedgerows. Any new hedgerow planting should include native species only with a minimum of five woody species within each 30m section.
- Swift boxes should be installed on 50% of the non-rendered new dwellings. Integrated boxes should be installed during construction at approximately 5m above ground level and at appropriate locations advised by an ecologist.
- Provision of additional bat boxes within the woodland area would provide roost sites for a range of bat species within woodland which is an important foraging resource. At least 12 wooden Kent bat boxes should be installed in pairs within the woodland to provide additional roosting opportunities for many of the species recorded in the local area.
- Small passerine nest boxes should be installed throughout the woodland to provide suitable nesting habitat for a range of common woodland bird species. A combination of at least 25 standard hole-fronted and open-fronted boxes would provide a variety of nesting locations for common and widespread garden species including blue tit, great tit, robin, blackbird, wren and chaffinch.
- The woodland flora could be enhanced by seeding with a typical woodland wildflower seed mix such as Emorsgate EW1, comprising woodland grass species alongside typical woodland wildflowers.

1 Introduction

1.1 Background to Commission

Riverdale Ecology Ltd were commissioned by Abel Homes on behalf of the landowners in December 2020 to carry out a Preliminary Ecological Appraisal (PEA) of a potential development site to the north of Ringland Road, Taverham, Norfolk; situated around Ordnance Survey Grid Reference TG 15138 14258. The appraisal was carried out in order to inform a planning application for a residential development at the site.

1.2 Scope of Report

The purpose of this PEA report is to establish the current biodiversity value of the site, to identify any potential ecological constraints or ecological impacts associated with the proposed development and provide recommendations for additional survey work to further evaluate any impacts that may risk contravention of legislation or policy relating to protected species and nature conservation. Where necessary, avoidance, mitigation/compensation and/or enhancement measures have been recommended to ensure compliance. It is based on the following information sources:

- A desk study of the site and within a 2km surrounding radius; and
- A Phase 1 Habitat Survey (JNCC, 2010) of the site boundary and immediate surrounds to map habitats and identify features with potential to support protected or otherwise notable species.

This report has been prepared with reference to best practice as published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2017) and to British Standard 42020:2013 (BSI, 2013). This report provides recommendations for enhancement of the site for biodiversity in line with the National Planning Policy Framework (NPPF) (Department of Communities and Local Government, 2019) and best practice guidelines.

The survey, assessment and report were conducted and written by Danny Thomas CEcol, MCIEEM, Principal Ecologist at Riverdale Ecology Ltd. Danny has over 16 years' experience within ecological consultancy and as such is suitably qualified to undertake habitat surveys and protected species assessments. He is a Chartered Ecologist and has a BSc (Hons) in Ecology with Biology and an MSc in Environmental Sciences from the University of East Anglia. He holds current Natural England survey licences for great crested newts, bats, dormice and water vole and has a Schedule 1 licence for several protected bird species including barn owl and Cetti's warbler.

1.3 Site Description and Context

The Application Site is roughly triangular in shape comprising land and outbuildings surrounding an existing property located on Ringland Road, Taverham on the southwest outskirts of Norwich and within the administrative area for Broadland District Council. Existing access is from Ringland Road on the southern edge of the site.

The Application Site is approximately two hectares in area comprising a collection of outbuildings including stables, a paddock and part of the garden of the existing property. Also within the site is an area of broadleaved deciduous woodland which is part of a larger area of woodland and parkland extending over approximately 20 hectares. The site is bounded to the south by Ringland Road and to the east by an existing residential development construction site (Beech Avenue Phase 1). To the west and northwest is Wensum Valley Golf Course.

Plans of the site are included in Appendix 1 and Photographs are included in Appendix 2.

1.4 Project Overview

The development proposal is for the demolition of the outbuildings and construction of 26 new residential dwellings with associated landscaping, utilities and a new access connected to the neighbouring development site on the eastern edge.

1.5 Relevant Legislation and Planning Policy

The following key pieces of nature conservation legislation are relevant to this appraisal:

- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (commonly referred to as the Habitats Regulations);
- Wildlife and Countryside Act 1981 (as amended); and
- Natural Environment and Rural Communities (NERC) Act 2006.

The National Planning Policy Framework (DfCLG, 2019) requires local authorities to avoid and minimise impacts on biodiversity and, where possible, to provide net gains in biodiversity when taking planning decisions:

"The planning system should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes and minimising impacts on biodiversity and providing net gains in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures."

To protect and enhance biodiversity and geodiversity, plans should:

"Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and steppingstones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation"; and,

"Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."

When determining planning applications, local planning authorities should apply the following principles:

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

"Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists"; and,

"Developments whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity."

A summary of relevant legislation and planning policy is provided in Appendix 3.

2 Methodology

2.1 Desk Study

A desk study was carried out to determine if any Statutory[1] land designations occur within 2km of the site; these were identified using the Multi-Agency Geographic Information for the Countryside website (www.magic.gov.uk).

Aerial photographs were reviewed to identify any habitats surrounding the site or wildlife corridors connecting the site to other habitats. Ordnance Survey maps, aerial photographs and the MAGIC website were used to identify the presence of water bodies within 250m of the site in order to establish if the land within the site could be used as terrestrial habitat for great crested newts. This species can use suitable terrestrial habitat up to 500m from a breeding pond although Natural England research report ENRR574 suggests that newts are likely to travel no more than 250m from ponds where suitable habitats for foraging, refuge and hibernation exist in immediate proximity (Cresswell, W. & Whitworth, R. 2004). The 250m zone was considered an appropriate distance for this assessment based on the presence of several ponds directly adjacent to the Application Site and the low value of the terrestrial habitat within the site boundary.

Information relating to the location of non-Statutory[2] wildlife sites within 1km of the Application Site and records of protected[3] or otherwise notable[4] species within the site and up to 2km from the site boundary was obtained from Norfolk Biodiversity Information Service (NBIS).

The status of species is taken directly from the relevant legislation, UK Biodiversity Action Plan (UK BAP, 2009), local (Norfolk) BAP or the list of Birds of Conservation Concern 4 (Eaton et al., 2015). The red and amber lists of Birds of Conservation Concern refer to bird species of particular conservation concern for a number of reasons. In general terms, red list species are globally threatened showing severe recent declines in population. Amber list species are species either with unfavourable conservation status or those species showing moderate recent declines in population; they may also include particularly localised species.

2.2 Extended Phase 1 Habitat Survey

A habitat survey of the site was carried out including any boundary features of interest. Habitats were described and mapped broadly in accordance with standard Phase 1 Habitat survey methodology (JNCC, 2010). Habitats were also assessed against Habitat of Principal Importance (HPI) criteria as set out by the JNCC (http://jncc.defra.gov.uk/page-5706).

Scientific names are given for vascular plant species only, following their first mention, thereafter common names only are used. Nomenclature for vascular plants follows Stace (2010). Incidental records of birds and other fauna noted during the course of the habitat survey were also compiled.

The presence of invasive or injurious plant species as defined by Schedule 9 of the Wildlife and Countryside Act, 1981 (as amended) was also recorded.

2.3 Protected Species

The habitats were assessed for their potential to support legally protected species using a combination of the desk study information and field observations carried out during the habitat survey. The assessment was based on professional judgement and best practice survey guidance methodology for identifying field signs of protected species

1 **Statutory designations** include Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR).
2 **Non-statutory sites** are designated by local authorities and protected through the planning process (e.g. County Wildlife Sites, Sites of Importance for Nature Conservation or Local Wildlife Sites).
3 **Legally protected species** include those listed in Schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981; Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019; or in the Protection of Badgers Act 1992 (as amended).
4 **Notable species** include Species of Principal Importance under the Natural Environment and Rural Communities Act 2006; Local Biodiversity Action Plan (LBAP) species; Birds of Conservation Concern (Eaton *et al.*, 2009); and/or Red Data Book/nationally notable species (JNCC, undated).

including but not limited to: badger (e.g. Roper, 2010); bats (Hundt, L. 2012, Collins, J. (ed) 2016, Mitchell-Jones, A. 2004, Andrews, H. 2018); hazel dormouse (English Nature, 2006); great crested newt (Langton et al, 2001; English Nature, 2001; Cresswell & Whitworth 2004); reptiles (Gent and Gibson, 2003); barn owl (Shawyer, 1998); and UK BAP Mammals (Cresswell et al, 2012). The potential for protected species presence was based on the following criteria:

- *Present* – Confirmed presence through first-hand survey evidence or recent verified records.
- *High Potential* – Local records highlight presence in the local vicinity. The site and immediate surrounds support good quality habitat or good connectivity to such habitat.
- *Moderate Potential* – Habitat within the site provides key elements for any species or species group although may be limited by factors including habitat area, isolation or disturbance. Desk study records highlight presence in proximity to site.
- *Low Potential* – On-site habitat is of low quality for any species or species group, lacking key elements and limited by factors including habitat fragmentation and habitat area. Few or absence of local records but within national distribution and thus cannot be completely discounted.
- *Negligible Potential* – Habitats within the site are very poor quality or completely absent for any species or species group. Desk study records are absent, the site is outside of the normal range of the species or species group and the surrounding habitat is unlikely to support wider populations. Presence cannot be completely ruled out, but it is considered 'reasonably unlikely' to support any species or species group.

The findings of this assessment establish any requirement for targeted protected species surveys that may be required to achieve compliance with relevant legislation. Surveys may be required where a site is judged to be of low suitability for a particular species or species group, alternatively it may be more appropriate to ensure compliance with protected species legislation through precautionary measures prior to and during construction.

Specific features within the site with potential to support protected species such as buildings and trees which may support bat roosts, waterbodies which may support water vole, otters and white-clawed crayfish and ponds which may support great crested newts will be superficially assessed to determine potential but further surveys may be required if potential is identified.

2.4 Bat Preliminary Roost Assessment (PRA) – Buildings

A Preliminary Roost Assessment (PRA) survey of the buildings on site was undertaken in accordance with best practice guidelines for assessing roost potential of structures (Collins, 2016; Mitchell-Jones & McLeish, 2004).

The survey comprised a detailed external and internal inspection of structures to identify Potential Roost Features (PRFs), and potential bat access points into the structure.

External Building Inspection

A systematic search of the external structure of the buildings was carried out to identify potential or actual bat access points and roosting places and to locate any evidence of bats. The inspection included a thorough search of the ground near the structures, particularly focussed below potential access points, and other flat surfaces such as windowsills, windowpanes and walls. Ladders were used for access to allow close inspection with a digital endoscope of suitable access points or roost locations behind lifted rendering, hanging tiles, weatherboarding, eaves, soffit boxes, fascias, lead flashing, gaps under felt and corrugated roofing sheets and gaps under tiles or slates. Any gaps in brickwork or stonework were also identified and closely inspected for any evidence of bats and to determine if they were suitable for roosting or provided access to suitable roost cavities.

Internal Building Inspection

A systematic search of the internal structure of the buildings was carried out to identify further any actual or potential access points and roosting places and to locate evidence of bat activity. Bat specimens (alive or dead) and droppings are the two most reliable forms of evidence. Other evidence is less conspicuous and includes urine splashes, fur-oil staining, feeding remains (moth wings), odour and audible clues of roosts such as squeaking from inside roosts.

2.5 Preliminary (Ground Level) Tree Bat Roost Assessment

A Preliminary Roost Assessment (PRA) survey of any trees within the site boundary was undertaken in accordance with best practice guidelines for assessing roost potential of trees (Collins, J. (ed.) 2016; Hundt, L. 2012, Andrews, H. 2018).

The survey comprised a systematic and detailed inspection of the exterior of the tree from ground level to search for Potential Roost Features (PRFs) which could be utilised by bats for roosting. The survey comprised a description of the physical characteristics of the tree alongside identification of any PRFs or evidence of roosting bats. PRFs found in trees include woodpecker holes; rot holes; vertical or horizontal cracks or splits in limbs; partially detached or loose bark; epicormic growth; enclosed gaps between overlapping stems or branches; and dense ivy with stem diameter in excess of 50mm.

2.6 Site Evaluation

An evaluation of the site was carried out in general accordance with guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2019) which ranks the nature conservation value of a site according to a geographic scale of reference: International/ European, National, Regional, Metropolitan, County, vice-county or other local authority-wide area, or of value at the Local scale or just within the context of the site.

In evaluating the nature conservation value of the site, the following factors were considered: nature conservation designations, rarity, naturalness, fragility, connectivity and relevant nature conservation aims and objectives for a given area as contained in national and local biodiversity action plans and planning policies.

2.7 Survey and Assessment Limitations

The data and conclusions presented here are an evidence-based assessment of the current status of the application site and should not be taken as providing a full and definitive survey of any protected species group. The results of this ecological assessment have allowed an evaluation of the likely ecological constraints to the proposed development and are considered sufficient to inform the need for further ecological survey and mitigation measures.

Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. Therefore, the absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future.

3 Results

3.1 Desk Study

Statutory Sites for Nature Conservation

There is one statutory site for nature conservation within 2km of the site which has both international and national designation.

River Wensum Special Area of Conservation (SAC)

The Wensum SAC is located approximately 455m to the west of the site at its closest point. The river is a naturally enriched, calcareous lowland river. The upper reaches are fed by springs that rise from the chalk and by run-off from calcareous soils rich in plant nutrients. This gives rise to beds of submerged and emergent vegetation characteristic of a chalk stream. Lower down, the chalk is overlain with boulder clay and river gravels, resulting in aquatic plant communities more typical of a slow-flowing river on mixed substrate. Much of the adjacent land is managed for hay crops and by grazing, and the resulting mosaic of meadow and marsh habitats, provides niches for a wide variety of specialised plants and animals. *Ranunculus spp.* vegetation occurs throughout much of the river's length. Stream water-crowfoot R. *penicillatus ssp. pseudofluitans* is the dominant species but thread-leaved water-crowfoot *R. trichophyllus* and fan-leaved water-crowfoot *R. circinatus* also occur in association with the wide range of aquatic and emergent species that contribute to this vegetation type. The river supports an abundant and rich invertebrate fauna including the native, white-clawed crayfish as well as a diverse fish community, including bullhead and brook lamprey. The site has an abundant and diverse mollusc fauna which includes Desmoulin's whorl-snail, which is associated with aquatic vegetation at the river edge and adjacent fens.

Qualifying habitats: The site was designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation. (Rivers with floating vegetation often dominated by water-crowfoot.)

Qualifying species: The site was designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- White-clawed (or Atlantic stream) crayfish.
- Bullhead.
- Brook lamprey.
- Desmoulin's whorl snail.

River Wensum Site of Special Scientific Interest (SSSI)

The Wensum has been selected as one of a national series of rivers of special interest as an example of an enriched, calcareous lowland river. With a total of over 100 species of plants, a rich invertebrate fauna and a relatively natural corridor, it is probably the best whole river of its type in nature conservation terms, although short stretches of other similar rivers may show a slightly greater diversity of species. The upper reaches are fed by springs that rise from the chalk and by run-off from calcareous soils rich in plant nutrients. This gives rise to dense beds of submerged and emergent vegetation characteristic of a chalk stream. Lower down, the chalk is overlain with boulder clay and river gravels, resulting in aquatic plant communities more typical of a slow-flowing river on mixed substrate. Diversity of plant species is further enhanced by mills and weirs; upstream the river slows to produce characteristic deep water plant communities, whilst below the barriers they are replaced by species tolerant of swirling and turbulent water. Unusually for a lowland river in England, much of the adjacent land is still traditionally managed for hay crops and by

grazing, giving a wide spectrum of grassland habitats some of which are seasonally inundated. The mosaic of meadow and marsh habitats, including one of the most extensive reedbeds in the country outside the Broads, provide niches for a wide variety of specialised plants and animals. The River itself supports an abundant and diverse invertebrate fauna including the native freshwater crayfish as well as a good mixed fishery. Brown trout form the major component of the fish community of the upper Wensum, whilst the middle and lower reaches are dominated by chub, pike, eel and barbel. Kingfisher and little grebe breed along the River, whilst the adjacent wetlands have good populations of reed warblers, sedge warblers and barn owls.

Non-Statutory Sites for Nature Conservation

There are three non-statutory County Wildlife Sites (CWS) within 1km of the site boundary, these are discussed in detail in Table 2 below:

Table 2: Non-Statutory Sites within 1km of Site Boundary.

Site Name	Distance from site and Orientation	Reason for Designation
CWS 256: Taverham Mill CWS	730m Southeast	This CWS is situated to the south of the River Wensum and consists of a fishing lake surrounded by marshy and neutral grassland and a mixture of planted and semi-natural woodland over an acid soil. The lake supports a good aquatic vegetation with abundant fringed water-lily *Nymphoides peltata* which is scarce in Norfolk. Trees and scrub surround the lake so there is little marginal vegetation except in small open areas where anglers sit. The north of the site supports a mainly semi-improved marshy grassland community which is grazed by highland cattle. The fields are largely dominated by fairly rank grasses with areas of swamp with reed sweet grass *Glyceria maxima*, creeping thistle *Cirsium arvense* and marsh thistle *C. palustre*. There are a series of recently created finger drains running in front of a hide in the central field.
CWS 1351: Walsingham Plantation CWS	795m Northeast	This site is a broad-leaved semi-natural woodland adjacent to the A1067. The canopy is predominantly oak *Quercus robur* with silver birch *Betula pendula*, beech *Fagus sylvatica*, and sycamore *Acer pseudoplatanus*. The canopy is high and broken in places. The coppice layer is slight and mainly elder *Sambucus nigra*. The ground flora is bracken *Pteridium aquilinum*, and bramble *Rubus fruticosus agg*., ivy *Hedera helix* and ground-ivy *Glechoma hederacea* is most common. Moschatel *Adoxa moschatellina*, climbing corydalis *Corydalis claviculata* and herb-Robert *Geranium robertianum*, red campion *Silene dioica* and wood avens *Geum urbanum* are also found. (Based on the 1985 habitat survey (NWT))
CWS 2112: Blyth's Wood CWS	970m South	This CWS comprises a broad-leaved, semi-natural woodland, situated within the floodplain of the River Wensum, to the west of Norwich. The woodland is very variable in character, with both wet and dry areas, open glades and clearings, and good structural diversity. A broad ride traverses the wood from north-west to south-east, and a large pond is present near the south corner of the wood. A number of ditches run

Site Name	Distance from site and Orientation	Reason for Designation
		through wetter parts of the site, which has numerous shallow pools and damp hollows. The 2017 extension is an area of oak- dominated woodland completely encircled by a wet ditch; both the flora and map evidence indicate this is probably planted ancient woodland, on light and free-draining and slightly acidic soils. The wood is comprised of high canopy trees, with areas of coppice, a well-developed understorey in many places, and a rich ground flora.

The proposed development site is not subject to any statutory or non-statutory nature conservation designations and does not contain equivalent habitat that could be considered as functionally linked to any nature conservation sites.

In addition, the site is not located in proximity to any statutory or non-statutory designated site where the development could result in direct impacts to any designated site. Any impacts resulting from the proposed development are anticipated to be localised and are not expected to extend beyond the redline site boundary.

3.2 Habitat Survey

Summary

The habitat survey was carried out on 12th January 2021 in appropriate weather conditions.

The site is broadly triangular in shape comprising a grassland paddock and associated stables, two sheds and a modern garage set within the grounds of an existing property. Approximately half the Application Site comprises woodland which wraps around the west and north sides of the proposed development area. The site is bounded to the south partly by a wall and partly by wooden fencing parallel with Ringland Road. The remaining site boundaries are demarked by chain link or Heras fencing.

A Phase 1 Habitat Plan is included in Appendix 1.

Improved grassland

The majority of the site comprises mown improved grassland part of which includes the lawn of the existing property and part is a small paddock on the eastern edge of the site (Appendix 2, Photograph 1). The sward is typical of improved grassland dominated by perennial ryegrass Lolium perenne alongside fescue *Festuca spp*. and common bent *Agrostis capillaris*. Flowering forbs are infrequent but where present they include typical common grassland species such as yarrow *Achillea millefolium*, ribwort plantain *Plantago lanceolata* and daisy *Bellis perennis*.

Semi-improved grassland

To the east of the improved grassland and between the stables and the woodland edge is a strip of semi-improved grassland (Appendix 2, Photograph 2), part of which is beneath some recently cleared trees. The sward here contains natural grasses including Yorkshire fog *Holcus lanatus*, cock's foot *Dactylis glomerata*, false oat-grass *Arrhenatherum elatius* and bent grass *Agrostis spp*.

Buildings and Hardstanding

There are five existing buildings with the Application Site:

Building B1 is a modern stable block located on the northern edge of the paddock. The building is arranged in a 'C-shape' with six stables and a tack room opening onto a small concrete yard (Appendix 2, Photograph 3). The stable is in very good condition, constructed of brick walls with a pitched roof supporting clay tiles on a bituminous liner. The roof has plastic soffit and eaves throughout. Internally the roof is supported on a timer frame (Appendix 2, Photograph 4) and is open up to rafters except for the tack room in the northwest corner of the building which has a ceiling installed. All the stables and the tack room have separate doors and small windows adjacent.

Building B2 is actually two conjoined buildings, both simple animal sheds similarly constructed with concrete block with flat roofs and open-sided except for metal gates across the lower half of the opening (Appendix 2, Photograph 5). Both buildings are arranged in pairs of stalls opening onto a small concrete yard to the front.

Building B3 is a large shed located next the concrete access drive (Appendix 2, Photograph 6). The shed is similar to typical poultry sheds, constructed with a brick half-wall supporting wooden panel upper walls. The roof is shallow pitched with corrugated asbestos or composite roofing sheets with sections of clear plastic sheets as skylights.

Building B4 is a smaller shed elevated off the ground on brick plinths (Appendix 2, Photograph 7). The shed is used as a tack room with a rudimentary kitchen and rest area. The roof is pitched supporting corrugated bituminous sheets and plastic skylights.

Building B5 is a large, modern, triple garage located near the existing site entrance (Appendix 2 Photograph 8). The garage is a large brick structure with a pitched roof supporting clay pantiles on a modern breathable membrane. The interior of the garage is open with an internal wall creating a separate smaller garage of approximately one third of the area. The roof is supported on a simple arrangement of modern roof timbers (Appendix 2, Photograph 9).

Woodland

The western edge and northern part of the site comprises part of Round Wood and supports an area of deciduous woodland (Appendix 2, Photograph 10) which is listed on the Natural England Priority Habitat Inventory for deciduous woodland and is also a Habitat of Principal Importance (HPI) under the Natural Environment and Rural Communities (NERC) Act. The woodland is a mix of sweet chestnut *Castanea sativa* and sycamore *Acer pseudoplatanus* alongside other species including silver birch *Betula pendula*, beech *Fagus sylvatica* and occasional oak *Quercus robur*. In places there is a dense shrub layer of native holly *Ilex aquifolium* and some non-native variegated holly and cherry laurel *Prunus laurocerasus*.

A ground flora layer is present where the tree density is lower and comprises rough grassland with herbs including cow parsley *Anthriscus sylvestris*, cleavers *Galium aparine*, red campion *Silene dioica*, creeping buttercup *Ranunculus repens*, chickweed *Stellaria media* and low bramble *Rubus fruticosus agg*., patches of bracken *Pteridium aquilinum* and nettles *Urtica dioica*. In the woodland at the north end of the site there is little ground flora and comprises mostly bare ground with leaf litter and patchy nettles (Appendix 2, Photograph 11).

On the eastern edge of the woodland some of the mature trees and holly/laurel shrub layer had been recently removed prior to the site visit.

Hedges

There is a small section of beech hedgerow extending from the southern boundary of the site adjacent to Building B5 for approximately 12m.

Offsite habitats

To the south of the site on the opposite side of Ringland Road is Snake Wood a large block of (replanted) ancient woodland.

3.3 Protected Species

Bats

There were 205 individual records comprising ten species of bats within 2km of the site returned in the NBIS data search. Species recorded include Western barbastelle, serotine, Daubenton's bat, Natterer's bat, noctule, Leisler's bat, soprano pipistrelle, common pipistrelle, Nathusius's Pipistrelle and brown long-eared bat. The data search information provided the details of a number of confirmed roosts locally for several species including Western barbastelle in Snake Wood to the south of the Application Site and other locations nearby recorded during surveys carried out by the Norfolk Barbastelle Group. Other nearby roosts include a Soprano pipistrelle maternity roost at Taverham Mill and roosts for a number of bat species at Ringland's Wood, which is located approximately 1.5km northwest of the site.

Surveys within the woodland to the northeast of the site was undertaken in 2018 by Greenlight Ecology to inform a planning application for a neighbouring residential development (Planning Reference: 20172148). The surveys recorded moderate bat activity within the woodland and recorded seven bat species with the majority of activity originating from soprano pipistrelles and common pipistrelles.

The buildings within the site are not considered likely to support roosting bats.

Building B1 (the stable block) is a relatively modern building and in very good condition. The roof and plastic eaves are in very good condition with no gaps which could provide access to roosting bats. When the stable doors and windows are closed there are no gaps, cracks or other potential access points to the interior of the building. The stables have not been used for several years and have remained largely closed up.

The internal inspection did discover a very small number of bat droppings which were adhered to the internal partition walls between the stalls. The droppings were very scarce and did not appear to be recent. There was also a collection of butterfly wings, which could have been feeding remains. However, there the building is fully sealed and there are no access opportunities for bats. The scattered droppings and possible feeding remains almost certainly date from when the stables were in use and the doors were open during summer nights as there would be no other points of access. The stables are likely to have occasionally attracted individual bats foraging on invertebrates within the stables, however since the closure of the stables access is no longer possible. As such it is concluded that the stables have negligible potential to support roosting bats.

Buildings B2, B3 and B4 have an absence of features which might provide credible opportunities for roosting bats.

Building B5 is a modern garage with no access opportunities for bats.

There are several trees within the woodland which exhibit Potential Roost Feature capable of supporting roosting bats, however the majority of the PRF have low to moderate suitability for bats and are generally smaller features only capable of supporting individual or very small numbers of bats.

The grassland within the site has negligible value as foraging habitat for bats. However, the woodland which extends along the western edge and the northern part of the site is considered high value foraging habitat for bats and provides habitat connectivity between ancient woodland to the south of the site and foraging areas to the north up to the River Wensum.

Great Crested Newts

There were no records of great crested newt returned in the NBIS data search within 2km of the site.

There are no ponds within 250m of the site boundary; the closest pond to the site is approximately 375m to the northeast within Wensum Valley Golf Course and there is no credible habitat connectivity with the site. As such, it is considered very unlikely that great crested newts will be present within the site.

Birds

There were extensive records of bird species returned by NBIS, comprising many common species as well as species of conservation concern and Schedule 1 listed species including barn owl.

In general, the habitats within the site have low value to many of the key species of conservation concern identified in the data search, but the site may support a small assemblage of common or widespread species with some potential to support red or amber listed species of conservation concern including song thrush and dunnock.

The stable block had a large number of old swallow nests (Appendix 2, photograph 12) most likely dating back to when the stables were in use and access was available via open stable doors. However, since the closure of the stable, there is no longer any possible access for swallows to enter the building to nest.

Bird species recorded on site during the PEA site visit included woodpigeon, chaffinch, carrion crow, blue tit, great tit, goldfinch, robin, dunnock, wren, song thrush, blackbird, and goldcrest.

Suitable nesting habitat exists in the woodland and the beech hedgerow adjacent to Building B5.

Reptiles

There were 22 records of reptiles returned by NBIS within 2km of the site including all four of the widespread reptile species: common lizard, slow worm, adder and grass snake. The majority of the records originate from surveys undertaken for the Norwich Distributor Route (NDR) approximately 1km north of the Application Site. Other records exist locally but the closest records are over 1.5km from the site. Surveys undertaken in 2018 for the development in the neighbouring site included the eastern part of the Application Site including the paddock, within the survey area. These surveys did not record any reptile species and it was concluded they were likely absent from the survey area.

The grassland within the site is generally low value for reptiles. The majority of the Application Site comprises managed, improved grassland which has no value for any reptile species. The rough semi-improved within the site boundary lacks extent and is isolated from any other areas of credible reptile habitat.

On balance it is considered there is negligible potential for the habitats within the site to any reptile species.

Badgers

There were six records of badgers returned by NBIS within 2km of the site.

The site does offer some opportunities as foraging habitat for badgers and woodland adjacent within the site could support setts. However, no setts or other evidence of badger activity were identified within the site or up to 30m from the site boundary during the site survey.

Other protected species

There were records of European otter and water vole returned by NBIS within 2km of the site.

However, the site does not contain any suitable aquatic habitat which could support either of these species.

NERC Act SPI /Local or National BAP Species

The NBIS data search returned 11 individual records for European hedgehog, which is a Species of Principal Importance. Hedgehogs are likely to utilise the habitats within the Application Site; the grassland and woodland within the site are valuable foraging habitat for hedgehogs. However, the woodland is anticipated to be retained and integrated into the landscape plan for the development. Furthermore, hedgehogs will regularly utilise garden habitats if access is available. Providing that hedgehogs can access the new development the conversion of the site to residential gardens with appropriate shrubs and planted borders is not likely to significantly affect the distribution or population of hedgehogs locally.

4 Discussion and Recommendations

4.1 Nature Conservation Evaluation

The intrinsic value of the habitats on-site within a defined geographic context is generally considered to be of importance at site level only. The majority of the site comprises improved grassland which has limited biodiversity value and is widespread and abundant locally. The woodland within the site boundary is considered to be high value providing habitat for a range of wildlife and it is listed as priority habitat on the Natural England Priority Habitat Inventory for Deciduous Woodland. The woodland has local value as it provides connectivity in the form of a continuous woodland belt connecting woodland to the south and north of the Application Site.

The habitats within the development footprint are generally common and widespread existing locally in both larger area and higher quality to the site. They do offer some opportunities as habitat for protected or noteworthy species but assuming no additional loss of woodland the loss of the remaining habitats from within the site would be unlikely to affect the overall assemblage of species or the conservation status of any individual species beyond the context of the site.

4.2 Further Surveys

Bats

Further surveys for bats will be required if any trees are removed from the woodland. No additional trees are anticipated to be removed to accommodate the proposed development, however, if this changes, any trees identified for removal must undergo a Preliminary Roost Assessment to determine if there are any Potential Roost Features (PRF) capable of supporting roosting bats. Additional surveys may be required if PRF are identified and this may include an aerial inspection of the PRF and/or bat activity surveys prior to the removal of the tree.

4.3 Constraints and Mitigation/Compensation

Habitats

The woodland is a Habitat of Principal Importance (Lowland Mixed Deciduous Woodland) and is valuable habitat for a variety of wildlife. The remaining extent of the woodland should be retained and protected by integrating it into the landscape design for the site. New tree planting is recommended between the woodland and the edge of the development site boundary. Shrub layer species such as hazel Corylus avellana would provide low dense cover for wildlife and respond well to management reducing overshading which could cause conflict with residents in the long term.

Mature native trees on the western edge of the site which fall within the property boundaries of plots 107, 108 and 111 should be retained to protect the integrity of the woodland connectivity is maintained following the sale of the properties.

Bats

Bats are sensitive to artificial lighting which can disrupt the normal 24-hour pattern of light and dark and is likely to affect the natural behaviour of bats. Bright light may reduce social flight activity or restrict access to foraging areas causing bats to move away from the light area. Studies have shown that in extreme cases continuous lighting can sometimes create barriers which some bat species will not cross. Lighting can be particularly harmful if used near high value foraging and commuting habitat such as woodland edges, hedgerows or rivers.

It is recommended that directional lighting is used to avoid illuminating habitat which could be utilised by bats. Of particular importance for this development site is to avoid light spill across the woodland edge which contains trees with Potential Roost Features capable of supporting roosting bats and which is likely to provide opportunities for commuting and foraging bats locally. External lighting in the vicinity of these areas should be managed carefully and designed to avoid excessive light spill which could disrupt bats.

At least 6 Schwegler bat boxes or equivalent woodcrete bat boxes should be installed on trees on the woodland edge to compensate for the removal of trees prior to the site visit. A combination of Schwegler woodcrete boxes 1FF, 2F and 2FN would provide suitable permanent roosting conditions for many of the species recorded in local area.

Birds

Any clearance of suitable nesting vegetation, including trees and hedgerows should be undertaken outside of the bird nesting season (from 1st March to the 31st August, inclusive) where appropriate. If this is not possible a detailed inspection for nesting birds should be carried out by a suitably qualified ecologist no more than 48 hours prior to removal of vegetation capable of supporting nesting birds. Any active nests found must be retained with an appropriate buffer until young birds have fledged, and the nest is no longer in use.

Hedgehogs

Consideration should be given to hedgehogs during construction and hedgehog friendly features included into the design of the development. Provision of woodpiles or a hedgehog house would provide necessary refuge for this species and the development should seek to reduce any potential fragmentation of habitats through the introduction of physical barriers to dispersal such as hardstanding, fences and artificial lighting. Hedgehog highways should be maintained between gardens through installation of hedgehog tunnels or simple gaps in the fences.

4.4 Ecological Enhancement

The National Planning Policy Framework (NPPF) encourages developers to incorporate habitat enhancement measures into development projects with the aim of providing tangible benefits for wildlife and achieving no net loss or where possible an observed gain in biodiversity within an individual site. Where opportunities exist, an individual development may provide enhancements to biodiversity which contribute to wildlife and habitat connectivity in the wider area. Enhancements act to improve the quality of the habitat for the flora and fauna on and within the vicinity of the site, although these enhancements may also provide aesthetic appeal.

Possible opportunities to enhance the wildlife potential, appropriate to this site, are provided below. It is important that any measures adopted be clearly demonstrated to the Planning Authority through inclusion in design plans and accompanying documentation.

- The landscape plan for the site should include the provision of native species-rich hedgerows. Any new hedgerow planting should include native species only with a minimum of five woody species within each 30m section. The most suitable location for a hedgerow would be long the southern boundary of the site which can be connected to the new hedgerow planting proposed for the adjacent development site. Species should comprise approximately 65% hawthorn *Crataegus monogyna* with 35% being a mix of other native hedging plants such as field maple *Acer campestre*, blackthorn *Prunus spinosa*, hornbeam *Carpinus betulus*, hazel *Corylus avellana*, dogwood *Cornus sanguinea*, wayfaring tree *Viburnum lantana*, guelder rose *Viburnum opulus*, dog rose *Rosa canina*, spindle *Euonymus europaeus* and elder *Sambucus nigra*.
- Swift boxes should be installed on 50% of the non-rendered new dwellings. Integrated boxes should be installed during construction at approximately 5m above ground level and at appropriate locations advised by an ecologist. It is recommended that swift boxes produced by birdbrickhouses (http://www.birdbrickhouses.co.uk/brick-nesting-boxes/nesting-boxes/) are used on dwellings with exposed brickwork as they can be faced with the bricks used in construction.
- Small passerine nest boxes should be installed throughout the woodland to provide suitable nesting habitat for a range of common woodland bird species. A combination of at least 25 standard hole-fronted and open-fronted boxes would provide a variety of nesting locations for common and widespread garden species including blue tit, great tit, robin, blackbird, wren and chaffinch.

- Provision of additional bat boxes within the woodland area would provide roost sites for a range of bat species within woodland which is an important foraging resource. At least 12 wooden Kent bat boxes should be installed in pairs within the woodland to provide additional roosting opportunities for many of the species recorded in the local area.
- The woodland flora could be enhanced by seeding with a typical woodland wildflower seed mix such as Emorsgate EW1, comprising woodland grass species alongside typical woodland wildflowers including selfheal *Prunella vulgaris*, garlic mustard *Alliaria petiolata*, ramsons *Allium ursinum*, foxglove *Digitalis purpurea*, hemp *agrimony Eupatorium cannabinum*, Meadowsweet *Filipendula ulmaria*, wood avens *Geum urbanum*, bluebell *Hyacinthoides non-scripta*, primrose *Primula vulgaris*, red campion *Silene dioica*, wood sage *Teucrium scorodonia* and upright hedge-parsley *Torilis japonica*.

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Appendix 1: Site Plans

Figure 1: Phase 1 Habitat Plan

RIVERDALE ECOLOGY

Beech Avenue Phase 2, Taverham, Norfolk

Phase 1 Habitat Plan

Date: January 2021

Key

Improved grassland

Semi-improved grassland

Woodland

Bracken and herbs

Buildings

Hardstanding

Removed trees

Hedgerow

Application Site Boundary

Figure 2: Proposed Development Layout

RIVERDALE ECOLOGY

Beech Avenue Phase 2,

Taverham, Norfolk

Proposed Development Plan

Figure 3: Proposed Mitigation and Enhancement Plan

Appendix 2: Photographs

Photograph 1.
View east across Application Site showing improved grasland.

Photograph 2.
Semi-improved grassland adjacent to woodland edge.

Photograph 3.
Modern stables (Building B1).

Photograph 4.
Internal structure of stables.

Photograph 5.
Building B2 (older stables/animal sheds).

Photograph 6.
Building B3.

Photograph 7.
Building B4 (elevated shed).

Photograph 8.
Building B5 (modern garage).

Photograph 9.
Interior structure of Building B5.

Photograph 10.
Woodland strip on western edge of Application Site.

Photograph 11.
Woodland in the northern part of the Application Site.

Photograph 12.
Old swallow nest in Building B1.

Appendix 3: Legislation

Relevant Legislation

Please note: This section contains key details of legislation and planning policy applicable in England and Wales only (i.e. not including the Isle of Man, Scotland, Northern Ireland, the Republic of Ireland or the Channel Islands) and does not provide full details. It is provided for general guidance only. While every effort has been made to ensure accuracy, this section should not be relied upon as a definitive statement of the law. Further information can be obtained from the relevant authorities.

National Legislation: Species

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 provides safeguards for European Protected Sites and Species (as listed in the Habitats Directive) and was transferred directly into UK law, thereby continuing the same provision for European protected species, licensing requirements, and protected areas after leaving the European Union.

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 interpret the Birds Directive and Habitats Directive into English and Welsh law with appropriate amendments introduced following the removal of the UK from the European Union in January 2021.

Explanatory notes relating to species protected under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (which includes smooth snake, sand lizard, great crested newt and natterjack toad, all bat species, otter, dormouse and some plant species) are given below and consider the case in England only, with Natural England given as the appropriate nature conservation body. **These should be read in conjunction with the relevant species sections that follow.**

- In the legislation, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 does not define the act of 'migration' and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes, are also considered.
- In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets the following three 'tests':
    - (i) the action(s) is(are) necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment;
    - (ii) that there is no satisfactory alternative; and
    - (iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

The Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) is a fundamental piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the conservation of wild birds (EC Birds Directive) in Great Britain. Various amendments have been made to the Wildlife & Countryside Act 1981 including the Countryside and Rights of Way (CRoW) Act (2000).

Other Legislation

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Countryside and Rights of Way (CRoW) Act 2000
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996.

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), badger, bats, birds, dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

Wild Mammals (Protection) Act 1996

Under the Wild Mammals (Protection) Act 1996 all wild mammals are protected against intentional acts of cruelty under the above legislation. It is an offence to:

- Mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example, operations near nests or burrows) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Bats

All species of bat are fully protected under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 which prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:
  a) to impair their ability:
    (i) to survive, breed, or reproduce, or to rear or nurture young;
    (ii) to hibernate or migrate
  b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Bats are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Implication for development works

For works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate), a European Protected Species Mitigation (EPSM) Licence, issued by the relevant countryside agency (e.g. Natural England), will be required. The licence is to allow

derogation from the relevant legislation and to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Though there is no current case law the legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded de facto protection, for example, where it can be proven that removal of such features may have a major impact to maintaining the viability of a bat roost[5].

Birds

With certain exceptions, all wild birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). Among other things, this makes it an offence to:

- Intentionally kill, injure or take any wild bird;
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built;
- Intentionally take or destroy an egg of any wild bird;
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.

Certain species of bird, for example the barn owl, black redstart, hobby, bittern and kingfisher receive additional special protection under Schedule 1 of the Act and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC). This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young;
- Intentional or reckless disturbance of dependent young of such a bird.

Implication for development works

Works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests, in order to avoid breaching the Wildlife and Countryside Act 1981 (as amended). To reduce the likelihood of nest destruction in particular, work should be undertaken outside the main bird breeding season (March to September[6]). Where this is not achievable any areas of habitat suitable for birds must be thoroughly checked for nests prior to vegetation clearance.

Species of bird listed on Schedule 1 are additionally protected against disturbance during the breeding season. It will therefore be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not achievable, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Herpetofauna (Amphibians and Reptiles)

Through their inclusion EPS under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, the sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita* and great crested newt *Triturus cristatus* receive full protection. The pool frog *Pelophylax lessonae* is also afforded full protection under the same legislation. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of species listed on Schedule 2
- Deliberate disturbance of any Schedule 2 species as:

5 Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected? Mammal News, No. 150. The Mammal Society, Southampton.

6 It should be noted that this is the main breeding period. Breeding activity may occur out of this period (depending on the particular species and geographical location of the site) and as such due care and attention should be given when undertaking potentially disturbing works at any time of year.

a) to impair their ability:
   (i) to survive, breed, or reproduce, or to rear or nurture young;
   (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate
b) to affect significantly the local distribution or abundance of the species

- Deliberate taking or destroying of the eggs of a Schedule 2 species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

With the exception of the pool frog, these species are also currently listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Species such as the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis* are listed in respect to Section 9(1) & (5). For these species, it is prohibited to:

- Intentionally (or recklessly in Scotland) kill or injure these species
- Sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

Common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Lissotriton vulgaris* and palmate newt *L. helveticus* are listed in respect to Section 9(5) only which affords them protection against:

- Sale, offering or exposing for sale, possession or transport for the purpose of sale.

Implication for development works

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect the breeding sites or resting places of those amphibian and reptile species protected under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (sand lizard, smooth snake, natterjack toad, great crested newt and pool frog). A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the Wildlife and Countryside Act 1981 (as amended).

Badger

Badgers *Meles meles* receive protection under The Protection of Badgers Act 1992 which consolidates the previous Badger Acts of 1973 and 1991. Under the Act it an offence to:

- Wilfully kill, injure, take, or, in England and Wales only, attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Implication for development works

A Development Licence is required from the relevant countryside agency (e.g. Natural England, Natural Resources Wales or Scottish Natural Heritage) for any development works liable to affect an active badger sett, or to disturb badgers whilst in the sett. In Wales, the Welsh Government is responsible for issuing licences in relation to agricultural and forestry operations or works to maintain or

improve any existing watercourse or drainage works, or to construct new works required for the drainage of land, including works of defence against seawater or tidal water.

Depending on the nature of the works and the specifics of the sett and its environment, badgers could be disturbed by work near the sett even if there is no direct interference or damage to the sett itself. The countryside agencies have issued guidelines on what constitutes a licensable activity. N.B. there is no provision in law for the capture of badgers for development purposes and therefore it is not possible to obtain a licence to translocate badgers from one area to another.

Invasive Plant Species

Certain species of plant, including Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera* are listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) in respect to Section 14(2). Such species are generally non-natives whose establishment or spread in the wild may be detrimental to native wildlife. Inclusion on Part II of Schedule 9 therefore makes it an offence to plant or otherwise cause these species to grow in the wild.

Implication for development works

Although it is not an offence to have these plants on your land, it is an offence to cause these species to grow in the wild. Therefore, if they are present on site and development activities (for example movement of spoil, disposal of cut waste or vehicular movements) have the potential to cause the further spread of these species to new areas, it will be necessary to ensure appropriate measures to prevent this prior to the commencement of works.

International and National Legislation: Habitats

Statutory Designations: International

Special Protection Areas (SPAs) and Special Areas of Conservation (SACs)

Special Protection Areas (SPAs), together with Special Areas of Conservation (SACs) form the Natura 2000 network in Europe (National Site Network in the UK). The Government was obliged to identify and classify SPAs under the EC Birds Directive (Council Directive 2009/147/EC (formerly 79/409/EEC)) on the Conservation of Wild Birds) and these sites have been retained within UK law despite the removal of the UK from the European Union via The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

- ***Special Protection Areas*** are areas of the most important habitat for rare (listed on Annex I of the Directive) and migratory birds within the UK and Europe. Protection afforded SPAs in terrestrial areas and territorial marine waters out to 12 nautical miles (nm) is given by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SPAs in UK offshore waters (from 12-200 nautical miles (nm)).
- ***Special Areas of Conservation*** are areas which have been identified as best representing the range and variety of key habitats and rare (non-bird) species listed on Annexes I and II of the Directive. The Government is still obliged to identify and designate SACs under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 whereby the EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) was incorporated fully into the UK legislation despite the removal of the UK from the European Union. SACs in terrestrial areas and territorial marine waters out to 12 nm are protected under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SACs in UK offshore waters (from 12-200 nm).

Ramsar sites

Ramsar sites are designated under the Convention on Wetlands of International Importance. The Convention provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources, in particular it recognises wetlands as ecosystems that are globally important for biodiversity conservation. Wetlands can include areas of marsh, fen, peatland or water and may be natural or artificial, permanent or temporary. Wetlands may also incorporate riparian and coastal zones adjacent to the wetlands. Ramsar sites are underpinned through prior notification as Sites of Special Scientific

Interest (SSSIs) and as such receive statutory protection under the Wildlife & Countryside Act 1981 (as amended) with further protection provided by the Countryside and Rights of Way (CRoW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. This effectively extends the level of protection to that afforded to sites which have been designated under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. (e.g. SACs & SPAs).

Statutory Designations: National

Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNR)

Sites of Special Scientific Interest are nationally important areas of special scientific interest, designated for their flora, fauna, or geological or physiographical features, under the National Sites and Access to the Countryside Act 1949 and latterly the Wildlife & Countryside Act 1981 (as amended). National Nature Reserves are declared by the countryside agencies under the same legislation. As well as underpinning other national designations the system also provides statutory protection for terrestrial and coastal sites which are important within a European context (National Site Network) and globally (such as Wetlands of International Importance). See subsequent sections for details of these designations. Improved provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales).

Statutory Designations: County

Local Nature Reserves (LNRs)

LNRs are statutory sites of lower conservation value designated under national legislation. LNR designation is declared for sites holding special wildlife or geological interest at a local level and are managed for nature conservation and provide opportunities for research and education and enjoyment of nature.

Non-Statutory Designations

Non-statutory sites designated under local legislation are areas considered to be of local conservation interest. These may be designated by local authorities as ***Local Wildlife Sites (LWS)***, also known as ***County Wildlife Sites (CWS), Local Nature Conservation Sites (LNCS), Sites of Biological Importance (SBIs)*** or ***Sites of Importance for Nature Conservation (SINCs)***. May vary between counties.

Together with the statutory designations, these are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined. The criteria for designation and the level of protection afforded to these sites through local planning policies and development frameworks may vary between counties.

National Planning Policy

The National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) replaced Planning Policy Statement (PPS9) in April 2012 as the key national planning policy concerning nature conservation. The NPPF emphasises the need for suitable development and specifies the need for protection of designated sites and priority habitats and priority species. An emphasis is also made for the need for ecological networks via preservation, restoration and re-creation. The protection and recovery of priority species – those listed as UK Biodiversity Action Plan priority species – is also listed as a requirement of planning policy. The NPPF was updated in February 2019 and now includes a presumption in favour of providing a **net gain** in biodiversity as opposed to a 'no net loss' as was previously the policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that:

- Designated sites are protected from adverse harm;
- Planning permission is refused where significant harm from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for;
- Opportunities to incorporate biodiversity in and around developments are required and a net gain in biodiversity through enhancement during development is now expected;

- Planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland; and
- Protection should be given to biodiversity within areas designated for their landscape value to include National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to landscape and scenic beauty.

The Natural Environment and Rural Communities (NERC) Act 2006, (as amended)

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions. The Act includes a list of habitats and species of 'principal importance for the conservation of biodiversity' in England. They are referred to in this report as ***Species of Principal Importance and Habitats*** or ***Principal Importance***. Local Authorities are required to consider the needs of these habitats and species when making decisions such as on planning application a developer must show that their protection has been adequately addressed within a development proposal.

Local Planning Authority's planning policy

The Local Planning Authority has policies relating to biodiversity conservation. For details, please see the planning website for the relevant authority.

Regional and Local BAPs

Many local authorities in the UK have also produced a local Biodiversity Action Plan (LBAP) at the County or District level. For details, please see the planning website for the relevant authority.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are intended to protect 'important' countryside hedgerows from destruction or damage by controlling their removal through a system of notification. A hedgerow is considered important if it:

- has existed for 30 years or more; and
- satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Schedule 1 criteria are related to the presence of protected plants and animals, or a high diversity of woody species and other qualifying features, e.g. connectivity to other hedgerows, woodlands or ponds, and the presence of standard trees.

Under the Regulations, it is a criminal offence to remove or destroy certain hedgerows without permission from the local planning authority. Countryside hedgerows are defined as those on or adjoining:

- common land;
- village greens;
- SSSIs (including all NNRs, SPAs and SACs);
- LNRs, and;
- land used for agriculture, forestry or the breeding or keeping of horses, ponies or donkeys are covered by these regulations.

Garden hedgerows, e.g. within or marking the boundary of the curtilage of a dwelling-house, are exempt from The Hedgerow Regulations.

APPENDIX 5
EMAIL FROM JOHN PERCIVAL, NORFOLK HISTORIC ENVIRONMENT SERVICES, DATED 5 JANUARY 2021

Daniel Piper

From: Percival, John <john.percival@norfolk.gov.uk>
Sent: 05 January 2021 10:21
To: Daniel Piper
Cc: Historic Environment Planning
Subject: FAO NCC Historic Environment Service - Beech Avenue, Taverham

Our Ref CNF47774

Dear Daniel,

FAO NCC Historic Environment Service - Beech Avenue, Taverham

Thank you for getting back to me with the plan.

The area you are planning to buy was in large part by a geophysical survey in 2017. The results of the geophysical were tested within the 20172148 application area by trial trenching, and proved to be accurate.

There little evidence that development within the red hatched area would have a significant impact on the historic environment and we wouldn't recommend conditions for archaeological work were placed on any planning applications.

If you have any queries please don't hesitate to get back to me.

Regards

John Percival

John Percival, Historic Environment Senior Officer (Strategy and Advice)
Community and Environmental Services
Tel: 01362 869275 | Dept: 01362 869278 | Mobile: 07775 697616
Union House, Gressenhall, Dereham, Norfolk NR20 4DR

Please Note I will be working from home for the foreseeable future but remain contactable by landline, mobile phone and email

We now have a general mailbox for historic environment strategy and advice. Please send all new site/application consultations, existing casework enquires where you are unclear who our case officer is, and reports for review to hep@norfolk.gov.uk

Norfolk County Council introduced *Standards for Development-led Archaeological Projects in Norfolk* and a new historic environment strategy and advice charging schedule on 1 May 2018. Please visit https://www.norfolk.gov.uk/libraries-local-history-and-archives/archaeology-and-historic-environment/planning-and-the-historic-environment for copies.

APPENDIX 6
DRAFT STATEMENT OF COMMON GROUND

Greater Norwich Local Plan (GNLP) Site Allocation Statement of Common Ground (SoCG)

Between
Broadland District Council, South Norfolk Council,
Norwich City Council, Norfolk County Council

And

Abel Homes Limited

Site Reference: GNLP0159R
Site Address: Land adjacent to Beech Avenue Business Park (Grid R

Proposed Development:

Residential development for up to 25 Homes

Introduction

The Greater Norwich authorities want to ensure sites allocated in the GNLP are achievable, where possible wholly compliant with all relevant planning considerations, and deliverable in a timely way. It is with that purpose in mind that landowners, agents and developers with a site likely to be included in the GNLP are being asked to agree a Site Allocation Statement of Common Ground (SoCG). Each SoCG will be available to the inspector appointed to examine the GNLP so that they can satisfy themselves of the commitment to deliver each site and to meeting local plan requirements.

The GNLP Team wants the process of agreeing a SoCG to be a frank but collaborative process for all parties concerned. In the case of most sites, this process is likely to commence in Autumn 2020 and conclude in 2021 as the Regulation 19 submission draft of the GNLP is finalised. For other sites, for example where development may entail abnormal costs, discussions may continue in to 2022, as the GNLP reaches its examination in public.

This SoCG template has been designed with consideration to the possibility of future planning reforms. It is deliberately straightforward and only asks the questions that any landowner, agent, or developer would naturally ask themselves. The template only requires 700 words of written response to complete, but its importance should not be underestimated.

The GNLP Team regards the viability and timely delivery of development as a high priority. Therefore, the working assumption is without a SoCG a site is unlikely to be allocated.

General Guidance

When completing the SoCG template please be precise. For example, in the description of development proposed, use the appropriate GNLP four-digit reference code, as well as giving a site address (including a postcode or eastings/northings reference).

Signatories to the SoCG should include all relevant parties with a role in bringing forward the proposed development. This should include all landowners, agents, developers, and possibly end-users of the development (if known).

The SoCG template contains a series of free-text questions that are designed to be answered within 100 words. If for whatever reason answering one or more of these questions is not possible or proves difficult site promoters are welcome to seek guidance from the GNLP Team. This may lead to completing the SoCG with a description of what issues remain for resolution at a future date.

Completing this SoCG template should be done with reference to the draft policies associated to the GNLP. Notable examples that will likely affect the form of development on site and its construction costs include:

- Provision of green infrastructure and suitable alternative green space (known as SANGS) under Policy 2 Sustainable Development and Policy 3 Environmental Protection and Enhancement; and,

- Obligations for affordable housing under Policy 5 Homes.

It should also be noted that completing a SoCG is a separate exercise from other data requests made by the Greater Norwich Local Plan Team, or the Greater Norwich authorities. For example, this is a separate exercise to the Five-year Housing Land Supply statements that are requested for the Annual Monitoring Report.

Commercially Sensitive or Other Confidential Information

By submitting a SoCG you are consenting to the details about you and your site/s being published and available for public viewing. Any information that you consider to be confidential or commercially sensitive and would not want published should be excluded from this form.

By signing you are agreeing to the information provided being to the best available knowledge accurate, and that it can be used in preparation of the Greater Norwich Local Plan (GNLP) – and used in evidence at the public examination of the GNLP.

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1. Please provide a commentary on the site's progress in respect to the three tests of being available, suitable, and deliverable.
[Approximately 100 words recommended]

Available
The site is immediately available for development with Abel Homes being the freehold owners of the site. Abel Homes are currently building 93 homes on the adjoining land under reference 20191065 and the inclusion of this site forms a natural and logical extension to the current scheme which can be delivered alongside the current scheme.

Suitable
Taverham is identified as being the Urban Fringe within the draft GNLP, as it provides a location which has a good range of services and amenities to support day to day life. The suitability of Taverham for additional development is well established and this proposed extension to the existing Taursham Park permission would be entirely suitable for development.

Deliverable
Abel Homes have a proven track record of delivering high quality residential schemes in Norfolk. Abel Homes are confident that the delivery of the site is viable having regard to the policy requirements of the draft GNLP and there are no factors that we are aware of, at this moment in time, that could prevent the delivery of the site.

2. Please provide a commentary on any land ownership constraints that may affect or delay development of the site.
[Approximately 100 words recommended]

Abel Homes are freehold owners of the site. No constraints have been identified which may affect or delay development of the site.

3. Please provide a commentary on progress to making a planning application – such as pre-application advice, or if planning permission exists on all or part of the site.
[Approximately 100 words recommended]

Pre-application advice has previously been sought from Broadland District Council which confirmed that there are no inherent issues with the site, it is likely to have limited landscape harm and would be in a sustainable location.
The principle of access via Taursham Park has been established with NCC (Highways) and the proposed link road has the capacity for 25 homes.
The adjacent site has planning permission for 93 homes and is currently being constructed under reference 20191065

4. Please provide a commentary on the site's delivery, for example a predicted start-on-site, the annual rate of delivery, and the development's likely completion date. *[Approximately 100 words recommended]*
Delivery of the site can occur immediately following the granting of a planning permission. Abel Homes Limited would ideally look for development to take place in conjunction with the development of Taursham Park (which is underway). As such, development could start in 2022 and would be complete within 12 months from start on site.

5. Please provide a commentary on engagement held with statutory bodes and if any agreements have been made. *[Approximately 100 words recommended]*
Discussions have been held with NCC who confirm that the principle of access is acceptable via Taursham Park. Pre-app discussion with Broadland District Council previously held in July 2019 confirmed no inherent issues with the site.

6. Please provide a commentary on any known technical constraints about the site – such as but not limited to highways, heritage, or ecology. *[Approximately 100 words recommended]*
Through the technical work undertaken to date, no technical constraints have been identified which would delay the site.

7. Please provide a commentary on community benefits the site will offer – such as but not limited to land and/or buildings for education and community provision. *[Approximately 100 words recommended]*
The proposed development will facilitate the provision of: affordable housing and open space, including an extension to the Community Woodland with Trim Trail being delivered as part of the Taursham Park development.

Signed on Behalf of the Greater Norwich Development Partnership	Date

Signed on behalf of Abel Homes Limited	Date

BIDWELLS