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ENVIRONMENT

Axis 50, near Willington

EclA Report

ENVIRONMENT

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EclA Report

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EXECUTIVE SUMMARY

Overview

This report presents the results of Ecological Impact Assessment EcIA and a Biodiversity Metrics Assessment in relation to the proposed development at Axis 50, near Willington by BWB Consulting. The survey and report were commissioned by Brackley Property Developments in relation to proposals to develop the Site.

The Ecological Impact Assessment was informed by ecological survey data collected in 2018.

Results and Recommendations

EcIA	With reference to Paragraph 118 of the NPPF² and the Guidelines for Ecological Impact Assessment in the UK¹, it is concluded that the proposed development will not result in significant harm to biodiversity or in significant biodiversity impacts at the district level or greater. One of the principles listed in Paragraph 118 of the NPPF is that 'opportunities to incorporate biodiversity in and around developments should be encouraged'. Measures to increase the biodiversity value of the mitigation area should be incorporated in to the development proposals as part of the ECMP and BEMP documents. It is recommended that an ECMP and BEMP should be produced for the development phase to provide specific details of the enhancements to the mitigation area and for the future management and monitoring of the Site.
Defra Biodiversity Accounting Metrics Assessment	A Biodiversity Offsetting Impact Assessment Calculator has been completed for the development site using the online calculator provided by the Environment Bank. Based on the proposed layout the scheme would result in a Linear Biodiversity Impact Score of + 426 and a Habitat Biodiversity Score of +36.

¹ Chartered Institute of Ecology and Environmental Management (CIEEM). 2016. Guidelines for Ecological Impact Assessment in the UK and Ireland; Terrestrial, Freshwater and Coastal. 2nd Edition.

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1.0 INTRODUCTION

Instruction

- 1.1 BWB Consulting (BWB) was instructed by Brackley Property Developments (the Client) to complete an Ecological Impact Assessment (EcIA) and Biodiversity Metrics Assessment in relation to the proposed development at land off Axis 50, near Willington.

Objectives

- 1.2 The objectives of the report are:
- Complete an Ecological Impact Assessment in relation to the proposed development. This would include a review of the additional ecological surveys undertaken at the Site.
 - Complete the Defra Biodiversity Accounting Metrics Assessment in relation to the proposed development.

Scope of Works

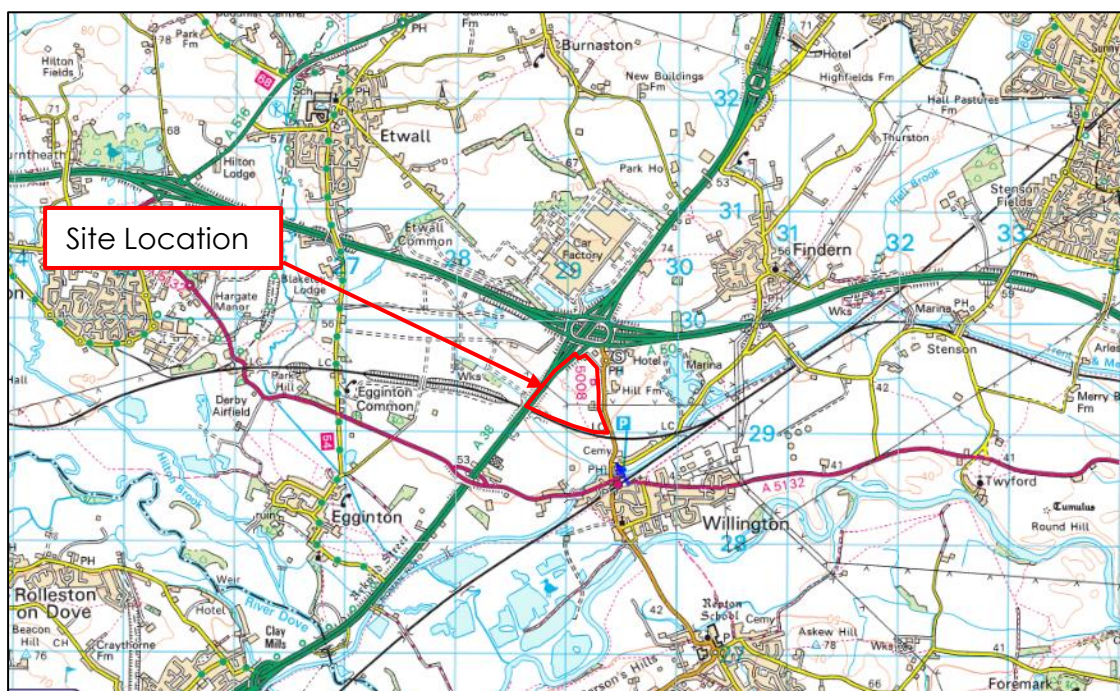
- 1.3 The scope of work included:
- Complete an Ecological Impact Assessment in relation to the proposed development.
 - Completion of the Defra Biodiversity Accounting Metrics Assessment in relation to the proposed development.

2.0 THE SITE

Site Location

- 2.1 The Site is located at Land off Etwall Road on the north western outskirts of Willington, approximately 4 km to the south west of the city of Derby. The central national grid reference is SK290293. The location of the Site is shown in **Figure 1**.

Figure 1: Site Location Plan



Reproduced from the Ordnance Survey 1:25,000 scale map with the permission of the controller of Her Majesty's Stationery Office Crown Copyright Reserved. OS Licence number 100013665.

Site Description

- 2.2 The layout of the Site and its main features are presented as **Figure 2** (at the foot of this document).

The Site is approximately 31.92 ha of flat pastureland to the northwest of Willington, approximately 49 m above sea level. The Site itself comprises five closely grazed pasture fields with the western site boundary denoted by the A38 and the southern by an active trainline. The surrounding landscape is dominated by open green space with the residential town of Willington located adjacent to the south east of the Site.

3.0 METHODOLOGY

Ecological Impact Assessment

- 3.1 The Ecological Impact Assessment has been based on the standard best practice guidelines described in:
- Chartered Institute of Ecology and Environmental Management (CIEEM) (2016). *Guidelines for Ecological Impact Assessment in the UK and Ireland; Terrestrial, Freshwater and Coastal*. 2nd Edition; 2016.
- 3.2 As per the Guidelines for Ecological Impact Assessment in the UK, the value or potential value of each ecological resource or feature is determined within a defined geographical context. For this site, the frame of reference is defined as follows:
- International;
 - UK;
 - National (i.e. England);
 - County;
 - District;
 - Local (5 km radius around site perimeter); and
 - Within zone of influence only (i.e. the project site plus 100 m radius around site).
- 3.3 The following baseline reports for the Site have been used to inform the EcIA.
- Preliminary Ecological Appraisal & Bat Roost Assessment Survey – BWB Consulting - March 2018.
 - eDNA Report – BWB Consulting – May 2018
 - Bat Emergence Surveys & Tree Climbing Inspection – BWB Consulting – June 2018.
- 3.4 The following key sources have also been used to inform this assessment:
- National Planning Policy Framework (NPPF) March 2012².

² Communities and Local Government (CLG). (2012). National Planning Policy Framework, March 2012.

- UK Biodiversity Action Plan (UKBAP)³

Biodiversity Metrics

- 3.5 A Biodiversity Offsetting Impact Assessment Calculator has been completed for the development site following the latest guidance.
- 3.6 Biodiversity Offsetting Calculators have not been created for all UK regions; for this assessment the online calculator provided by the Environment Bank was applied.
- 3.7 The use of a biodiversity calculator allows any losses/gains to the biodiversity value occurring to a site through development to be measured. Where habitat is to be lost its value can be calculated to ensure any compensatory habitat creation is of greater value. Delivering biodiversity compensation in a measurable way enables demonstration that a net-gain to biodiversity value is likely to be achieved by a development. Where measurable compensation is delivered beyond the boundaries (red and blue lines) of an application site it is termed 'biodiversity offsetting'.
- 3.8 Before compensation or biodiversity offsetting can occur the value of the habitat to be lost must be calculated. Calculating biodiversity units comprises of 7 distinct steps⁴:
- Step 1 - Apply the 'avoid, mitigate, compensate' hierarchy to understand the residual biodiversity loss.
 - Step 2 - Map the habitat type(s) impacted by your development.
 - Step 3 - Assess the baseline condition of each habitat.
 - Step 4 - Combine the habitat type and condition weighting to calculate an overall number of biodiversity units.
 - Step 5 - Work out if you have particular requirements for the type of offset you will need to provide.
 - Step 6 - Managing hedgerows (only applicable if hedgerows are to be lost).
 - Step 7: Decide how you want to provide compensation.

³ <http://jncc.defra.gov.uk/page-5705>

⁴ Lichfield District Council. (2016). Biodiversity & Development Supplementary Planning Document.

<https://www.lichfielddc.gov.uk/Council/Planning/The-local-plan-and-planning-policy/Supplementary-planning-documents/Downloads/Biodiversity-Development/Biodiversity-and-Development-SPD.pdf>

4.0 ECOLOGICAL IMPACT ASSESSMENT

Nature Conservation Evaluation

4.1 The valuation of the nature conservation interest of the ecological features present on the Site and whether or not they are subject to detailed impact assessment is summarised in Table 1.

4.2 **Table 1: Summary of Valuation of Nature Conservation Interest**

Receptor – Site/Habitat /Species	Evaluation Rationale	Value of receptor or Value of site to receptor	Potential for Impact	Subject to detailed assessment
Designated Sites				
Hilton Gravel Pits SSSI	Designated at a national level. Habitats on site include open water, carr, scrub and woodland.	National	No – distance and lack of connectivity.	No
Old River Dove SSSI	Designated at a national level. Meander cut off from present river.	National	No – distance and lack of connectivity.	No
Toyota Balancing Ponds LWS	Designated for its local value. Aquatic vegetation.	Local	No – distance and lack of connectivity.	No
Willington Railway Ponds (1 and 2) LWS	Designated for its local value. Standing open water	Local	No – distance and lack of connectivity.	No
Willington Grassland LWS	Designated for its local value. Wet grassland	Local	No – distance and lack of connectivity.	No
Findern Meadows LWS	Designated for its local value. Semi-improved neutral grassland	Local	No – distance and lack of connectivity.	No
Yew Tree Meadows LWS	Designated for its local value. Unimproved neutral grassland	Local	No – distance and lack of connectivity.	No
Ash Grove Lane LWS	Designated for its local value. Hedgerow	Local	No – distance and lack of connectivity.	No
Highbridge Wetland LWS	Designated for its local value. Habitat mosaic	Local	No – distance and lack of connectivity.	No
Sports Ground Marsh LWS	Designated for its local value.	Local	No – distance and lack of connectivity.	No
Willington Wetlands	Designated for its local value.	Local. Bird assemblage	No – distance and lack of connectivity.	No

Habitats				
Hedgerows	Habitat of Principal Importance – Section 41 of NERC Act 2006.	Local	Yes – direct habitat loss	Yes
Grassland	Generally species-poor.	Less than Local	Yes – direct habitat loss	Yes
Trees and Scrub	Species are common and widespread.	Less than Local	Yes – direct habitat loss	Yes
Watercourse	Species are common and widespread.	Less than Local	No – feature will be retained	No
Species				
██████	██████████ ██████████ ██████████ ██████████	██████ ██████	██████████ ██████████	██████
Bats	No roosts present. The site is likely to be used for foraging / commuting purposes by low numbers of bats; mostly common species.	Less than Local	Potential loss of foraging / commuting habitat and increased disturbance through lighting and traffic.	Yes
Great Crested Newt	No ponds on site. GCN eDNA result negative for pond SK29480 29574. No access to pond SK29398 29167	Local	Potential loss of terrestrial habitats.	Yes
Birds	Potential nesting activity in trees, dense scrub and hedgerow. Low potential for ground nesting birds.	Less than Local	Potential loss of breeding habitats and increased disturbance	Yes
Otter	Not present. Habitats unsuitable	n/a	No	No
Water vole	Not present. Habitats unsuitable.	n/a	n/a	No
Reptiles	Scrub and hedgerows near ditches suitable for grass snake	Local	Potential loss of habitat and increased disturbance / isolation	Yes
Brown hare	Potentially present within the Site	Less than Local	Potential for habitat loss and increased disturbance	No
Hedgehog	Potentially present within the Site	Less than Local	Potential for habitat loss and increased disturbance	No

4.3 Therefore, the ecological receptors which are taken forward for further assessment are as follows:

- o Hedgerows.
- o Grassland.
- o Trees and scrub.
- o [REDACTED]
- o Bats.
- o Great Crested Newt.
- o Birds.
- o Reptiles.

Likely Significant Effects

4.4 Activities likely to affect ecological features at the Site could include the following:

- o Land-take resulting in direct habitat loss;
- o Disturbance of habitats in the vicinity of areas of construction;
- o Accidental spillage of materials onto vegetation or into the watercourses;
- o Construction noise and people; and
- o Increased disturbance

4.5 The potential impacts on individual features resulting from these activities are assessed below. Some of the potential impacts of the Development have been mitigated through sensitive design. For example, the watercourse and hedgerow on the south-east boundary are both being retained along with buffer zones of semi-natural vegetation.

4.6 The potential impacts below are therefore described with this in-design mitigation already in place, and further mitigation is then discussed before an assessment of residual impacts. Mitigation and/or compensation are only required when an impact is likely to be significant; however, there are a number of measures that would be implemented as best practice and opportunities for enhancement. Therefore, these are described within the mitigation section.

4.7 Possible impacts during the construction phase include:

- o Land take of habitats due to construction of buildings, roads and associated infrastructure;
- o Temporary disturbance of habitats in the vicinity of construction areas;
- o Habitat loss for protected/notable species;
- o Disturbance and displacement of protected/notable species;
- o Pollution and siltation of the watercourse due to spillages and release of sediments.

Hedgerows

Grassland

Scattered Trees and Scrub

██████████

4.12 [REDACTED]
[REDACTED]
[REDACTED]

Bats

- 4.13 The survey information indicates that there are no bat roosts within the Site and therefore no impacts on roosting bats are predicted.
- 4.14 The construction phase will require the removal of hedgerows, which are likely to be used by low numbers of bats for foraging and commuting purposes. The bat usage within the Site is likely to be dominated by common pipistrelle which is the most common species at the local and national levels.
- 4.15 The impacts on bat foraging and commuting habitats would be long term, but are assessed as being of low magnitude due to the relatively poor quality nature of the habitats and the low bat activity levels likely to be present at the Site. In the absence of mitigation, the loss of bat habitats at the site is not considered to be significant at the Local level but may be significant at the **Site level**.

Great Crested Newt

- 4.16 No ponds were present within the Site, however, the areas of dense and scattered scrub within the Site had limited potential to support terrestrial amphibians.
- 4.17 A review of Ordnance Survey maps and aerial photography revealed that there were five waterbodies within 500m of the Site. Two large waterbodies were located to the north of the A50 within the industrial complex.
- 4.18 The Trent and Merseyside Canal was located approximately 290m to the south of the Site. Due to the steep sided concrete and earth banks, lack of bankside and emergent vegetation and likely presence of fish within the canal this was considered suboptimal to support amphibians.
- 4.19 Two waterbodies were located to the east of the B5008, 140m and 50m east of the Site boundary. The GCN eDNA survey undertaken in 2018 recorded a negative result for GCN presence in the pond at SK29480 29574. No access to pond SK29398 29167.
- 4.20 Great crested newts may travel 250 metres or more from breeding sites during their terrestrial phase. In the absence of mitigation, there is potential for great crested newt terrestrial habitat to be lost and there is potential for a small number of individual great crested newts to be killed or injured during the construction phase. These impacts are not considered to be significant at the local level but may be significant at the **Site level**.

Birds

- 4.21 The Site provided potential for nesting birds in trees, dense scrub and hedgerow habitats. The short-grazed sward of the poor semi-improved grassland provides potential for ground nesting birds, such as lapwing. However, due to the dry, compacted nature of the soil, network of fences, boundary hedgerows and

adjacent A roads, the Site in general is considered to provide very low potential for ground nesting birds. No active nests were noted on Site at the time of the survey, however several old nests and nesting material was present in the hedgerows and dense scrub. The majority of habitats on Site were able to support foraging birds.

- 4.22 Nesting material was found in the top of the breeze block wall (indicative of robin) within Building 2 (B2) on Site, though this was not in use at the time of the survey. Bird droppings were also noted on the internal brickwork of the walls and flooring of both buildings.
- 4.23 The construction phase could result in direct habitat loss for these species, potentially resulting in a significant effect at the **Site level**.
- 4.24 Ground clearance during the construction phase could also result in the damage or destruction of active bird nests if undertaken during March to August inclusive.

Reptiles

- 4.25 The scrub and hedgerows near the surface water drainage ditches on Site provide some commuting and foraging opportunities for reptiles, in particular grass snake. However, the closely grazed pasture fields, although good for basking reptiles, are subject to high levels of disturbance and offer little cover for reptiles from predators. In addition, the only reptile record identified within the desk study was of grass snake over 1.9km to the south southwest of the Site.
- 4.26 The construction phase could result in direct habitat loss for reptile species, potentially resulting in a significant effect at the **Site level**.

Operational Phase

- 4.27 The majority of potential impacts from the Development would occur during the construction phase. The only potential impacts identified during the operational phase are increased killing/injury from road traffic on amphibian and reptile species, and possibly disturbance to nesting birds during landscape management practices; significant effect at the **Site level** only.

Mitigation Measures

Construction Phase – Hedgerows and Trees

- 4.28 Hedgerows and standard trees will be retained in situ wherever possible through sensitive detailed design. Wherever possible, hedgerows will be retained with a suitable buffer zone of semi-natural vegetation and will not be subsumed in to areas directly adjacent to hard standing/buildings.
- 4.29 Where hedgerow and tree loss is unavoidable, this will be compensated for by planting new hedgerows, trees and/or shelter belts on a minimum ratio of 2:1. New hedgerow, tree and shelter belt planting will comprise native species of local provenance and native stock.

[REDACTED]

- 4.30 [REDACTED]
[REDACTED]
[REDACTED]

Bats

- 4.31 Wherever possible, hedgerows and hedgerow trees will be retained in situ with buffers of semi-natural vegetation. A series of bat flyways will also be created within the Site, including along the Site's southern boundary. These will comprise broad strips of semi-natural vegetation where any artificial lighting will be carefully designed in order to minimise light spill which may affect bats, e.g. down-lighting along footpaths only.
- 4.32 If any mature trees are to be felled or subject to surgery, update surveys will be undertaken prior to felling / surgery to confirm the presence / absence of roosts and to ensure legal compliance.
- 4.33 To maintain good practice it would be recommended that works are completed in accordance with the following points:
- 4.34 The removal of any external cladding and roof sheets should follow a 'soft strip' approach with such works undertaken in a controlled manner by hand / hand tools and care should also be taken when removing any external timber cladding on the external elevations; these works should be completed under the supervision of a bat ecologist. In the unlikely event that a bat is discovered during developments all works would cease until the ecologist has liaised with Natural England on the subsequent development procedures and licencing requirements. In the unlikely eventuality of a bat or evidence of bats such as droppings being found during other construction works, the contractors should stop immediately and contact project ecologist.

- 4.35 Contractors must avoid handling a bat where possible, and should a bat be discovered during development works the bat should be allowed to disperse on its own accord, or wait for the licensed handler to collect the bat. If it is necessary to remove a bat to avoid it being harmed, gloves **MUST** be worn. It should be carefully placed in a cardboard box and kept in the dark in a quiet place until the licensed ecologist arrives on site. Ensure all personnel are aware of the findings and working practices within this report.
- 4.36 Artificial lighting can cause disturbance to bats; it is therefore recommended to avoid/minimise external lighting in close proximity to any existing treelines/hedgerows within or adjacent to the development. A wildlife sensitive lighting strategy should be produced as part of the Biodiversity Enhancement and Management Plan for the scheme. This should be in accordance with Bats and Lighting in the UK; Bat Conservation Trust; Version 3, May 2009.
- 4.37 As an enhancement measure, bat boxes will be attached to the retained trees and new buildings on the Site. Exact details to be confirmed within the Biodiversity Enhancement and Management Plan (BEMP).

Great Crested Newt & Reptiles

- 4.1 It is recommended that a precautionary approach to works should be undertaken to allow for the passive displacement of any reptiles and amphibians.
- 4.2 Strimming and cutting of grassland, scrub and hedgerow vegetation should be carried out during the reptile active season (April to September inclusive) and where possible the work should be undertaken on sunny days in temperatures of 10°C or above, to ensure any reptiles that may be present are mobile.
- 4.3 The grassland, scrub and hedgerows should be subject to two-staged cutting by hand held tools. The first cut should reduce the height to approximately 200mm and the second to a maximum of 50mm. A period of one to two days should be left between cuts to allow any reptiles/amphibians to disperse following initial disturbance. Contractors should progress steadily across the areas of grassland, scrub and hedgerows in either a southerly or westerly direction to encourage reptiles to disperse to habitats along the railway embankment or within the woodland. This will prevent reptiles and amphibians becoming corralled into isolated pockets of habitat on site.
- 4.4 All rubble piles and general arisings will be dispersed from the working area to remove potential areas of refugia for reptiles and amphibians. All clearance works should be supervised by an ecologist to ensure that any issues can be dealt with immediately.
- 4.5 Full details to be provided within the Ecological Construction Management Plan.

- 4.6 Birds

Within areas of retained habitat and new planting, new planting will include species selected for their benefit to birds, e.g. seed-bearing trees and species which provide vegetative cover for nesting. In addition, bird nesting boxes will be provided in these areas (details to be provided in BEMP).

- 4.7 In order to ensure legal compliance; where possible ground clearance works will be undertaken outside the main nesting period of March-August inclusive. Any ground clearance work during March to August inclusive will be preceded by checks for nesting birds. If active nests are present, these will be retained in situ until the nests are no longer active.

Operational Phase - Great Crested Newt, Reptiles & Birds

- 4.8 The Biodiversity Enhancement and Management Plan should include details for on Site enhancements for reptile and amphibian species. These should cover the correct management techniques to create and establish semi-natural habitats (i.e. long meadow grassland and the pond) for these species notably along the southern edge of the Site. Details for drop-down kerbs and off-setting drains where possible should also be included.
- 4.9 Mitigation input for bird species should be included within the BEMP; this should include details on the correct timings for hedge, scrub and tree management to avoid impact to nesting birds.

Summary

- 4.18 Extended phase 1 habitat surveys were undertaken at the Site to determine the habitats present and their potential value for protected and notable species. In light of these survey results, further targeted species surveys were carried out to determine the value of the Site for great crested newt and bats.
- 4.19 The Site is dominated by intensively management semi-improved species-poor grassland. Boundary features on the Site are typical of the wider area and comprise mostly species-poor hedgerows, some of which have a small number of associated trees. The Site also contains a watercourse (ditch) on the south-east boundary.
- 4.20 The Development will result in the loss of semi-improved species-poor sheep grazed grassland which is of low ecological value. Important habitat features will be retained wherever possible, i.e. hedgerows and mature trees.
- 4.21 [REDACTED]
- 4.22 The only significant residual impacts are related to the time taken for planting (grassland, pond, trees, hedgerows and shelter belt) to mature to mitigate for the loss of habitats on Site; the loss of potential breeding habitat for bird species; and the potential for significant impacts on the levels of bat foraging and commuting activity on Site.

Conclusion

- 4.23 With reference to Paragraph 118 of the NPPF² and the Guidelines for Ecological Impact Assessment in the UK⁵, it is concluded that the proposed development will not result in significant harm to biodiversity or in significant biodiversity impacts at the district level or greater.
- 4.24 One of the principles listed in Paragraph 118 of the NPPF is that 'opportunities to incorporate biodiversity in and around developments should be encouraged'. Measures to increase the biodiversity value of the mitigation area should be incorporated in to the development proposals as part of the ECMP and BEMP documents.
- 4.25 It is recommended that an ECMP and BEMP should be produced for the development phase to provide specific details of the enhancements to the mitigation area and for the future management and monitoring of the Site. A skeleton ECMP and BEMP for the Site is shown below.

⁵ Chartered Institute of Ecology and Environmental Management (CIEEM). 2016. Guidelines for Ecological Impact Assessment in the UK and Ireland; Terrestrial, Freshwater and Coastal. 2nd Edition.

Ecological Construction Management Plan ECMP and Biodiversity Enhancement and Management Plan BEMP

- 4.26 It is recommended that a Detailed ECMP and BEMP should be produced for the development phase. The ECMP and BEMP should include details on the proposed mitigation, habitat creation, management and monitoring proposals for the development. Example objectives for the ECMP and BEMP are listed 1 to 5 below, and these should be adopted where appropriate
1. Measures to ensure compliance with relevant wildlife legislation.
 2. To increase the value of the site for roosting bats and maintain its value for foraging bats.
 3. To maintain and potentially increase the value of the site for declining bird species, such as bullfinch, house sparrow through the improvement of and creation of, woodland and scrub areas and the installation of bird boxes.
 4. To deliver habitat enhancement and increase biodiversity generally through the creation of potentially valuable habitats in the form of grassland, hedgerow and woodland areas and features such as brash piles.
 5. To maintain and enhance the value of the site for five years following the completion of the relevant works and thereafter, through active management.

5.0 BIODIVERSITY IMPACT ASSESSMENT CALCULATIONS

Habitat Impacts and Removal of Existing Vegetation

- 5.1 Pre-development habitats within the Site include species-poor semi-improved grassland (31.22 ha), hedgerow (0.5 km), scattered trees (0.3 ha), built environment - buildings and hard-standing (0.3 ha) and flowing ditch (0.68 km).
- 5.2 The development will result in the loss of / disturbance to approximately 31.22 hectares of species-poor semi-improved grassland. This habitat type is not included as a category within the Environment Bank calculator; the most relevant category was 'Grassland – Other Neutral Grassland' in 'Poor' condition.
- 5.3 The development will retain approximately 0.24 km of hedgerow on the edge of the Site. The trees within the boundary hedgerows are proposed for retention where possible.

Development Proposal

- 5.4 As shown on the proposed layout plan⁶, the scheme will include the following habitats: hard standing / built environment⁷, mixed tree plantation, native hedgerows (retained 240 m + new hedgerow 600 m = total 840 m), wetland: standing water and retained/new scattered trees.
- 5.5 The new native hedgerows would be total 600 m in length. These hedges should be planted with native species such as hawthorn, elder, holly, hazel and guelder rose and managed for wildlife benefit.
- 5.6 The 2.8 ha of amenity grassland would include areas of mown amenity grassland and areas of long meadow grass. Native species of local provenance should be included within the planting schedule for the Site.
- 5.7 Refer to Table 2 for the outcome of the Biodiversity Impact Assessment Summary. A copy of the Biodiversity Impact Assessment Calculator is available on request.

⁶ Burnaston Cross, Willington – Green Infrastructure Areas – FPCR – 11.07.2018.

Calculation Results

5.8 Table 2 presents the Biodiversity Impact Assessment Summary.

5.9 Table 2. Biodiversity Impact Assessment Summary

Pre-development			
Habitat	Area (ha)	Condition	Score
Grassland – other neutral grassland	31	Moderate	186
Other features – bare ground	1	Moderate	4
Woodland – native broadleaf woodland	1	Moderate	12
Woodland – scrub	1	Moderate	8
Total			210
Linear Habitat	Area (m or ha)	Condition	Score
Hedgerows	500 m	Moderate	1000
Freshwater – natural rivers and streams	1 ha	Good	18
Total			1018

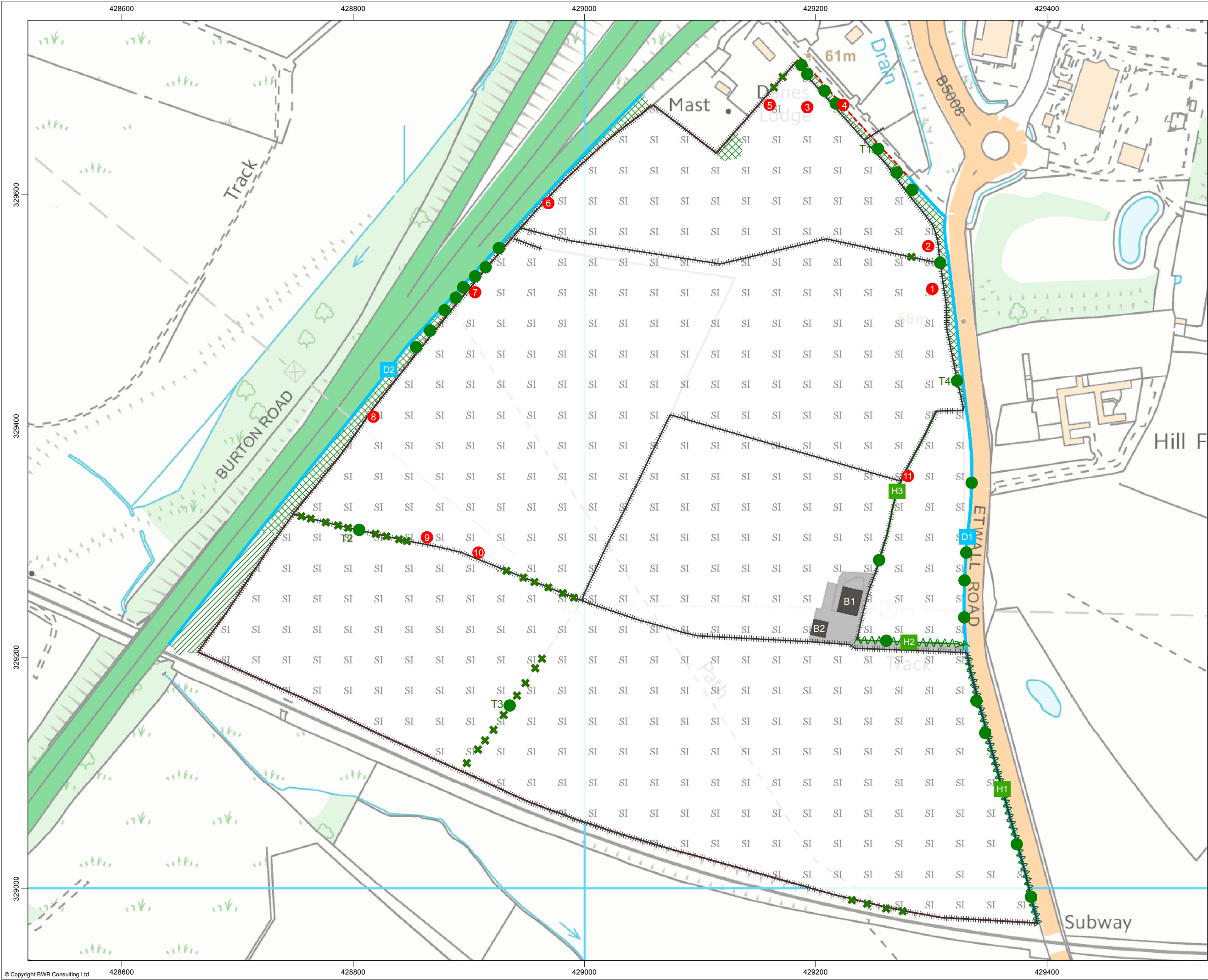
Development proposal			
Habitat	Area (ha)	Condition	Score
Woodland – native broadleaf woodland (Tree planting – specimen trees)	1 ha	Good	18
Woodland – native broadleaf woodland (Bund woodland planting)	4 ha	Good	72
Other features - Semi-ornamental shrub planting	1 ha	Good	6
Grassland lowland meadow - (long meadow grass)	5 ha	Good	90
Grassland – amenity (mown)	1 ha	Good	6
Wetland planting mix	2 ha	Moderate	24
Grassland lowland meadow (Wildflower meadow)	1 ha	Good	18
Freshwater - Ponds	1 ha	Moderate	12
Total			246
Linear Habitat	Area (m or ha)	Condition	Score
Formal hedge	663	Low	663
Native hedge	523 (new) + retained (240 m)	Moderate	1526
Freshwater – natural rivers and streams	1 ha	Good	18
Total			1,444

Post development vs pre-development for habitats = $246 - 210 = + 36$

Post development vs pre-development for linear features = $1444 - 1018 = + 426$

In conclusion, the habitat creation measures proposed as part of the development will result in a net gain in the Biodiversity Metrics Score indicating net-gain to the biodiversity value of the Site.

PHASE 1 HABITAT SURVEY MAP



Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Key Plan

Legend

- Site boundary
- Broadleaved plantation woodland
- Dense scrub
- Poor semi-improved grassland
- Hardstanding
- Building
- Fence
- Species poor intact hedgerow
- Species poor defunct hedgerow
- Surface water ditch
- Scattered broadleaved tree
- Scattered scrub
- Target note

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Project Title
Axis 50

Drawing Title
PRELIMINARY ECOLOGICAL APPRAISAL - MARCH 2018

Drawn:	C. Mark Parnell	Reviewed:	C. M Cullimore-Pike
BWB Ref:	FE_BWB14	Date:	18.07.18
Scale@A3:	1:3,000		

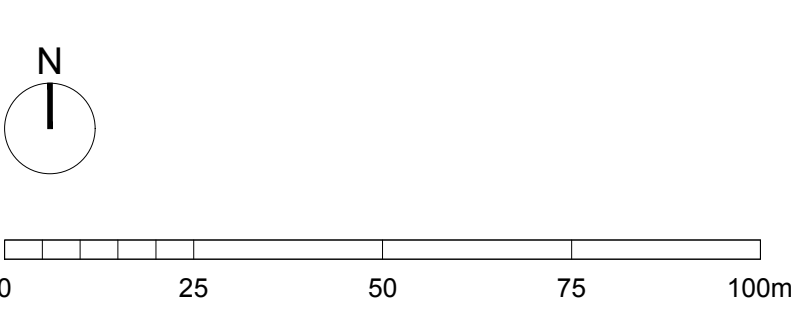
GREEN INFRASTRUCTURE AREAS - FIGURE



NOTES

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- KEY
- Application Site Boundary 31.92ha
 - Contour Lines
 - Specimen Trees 65 no.
 - Gateway Specimen Trees 7no.
 - Woodland Groups approx. 425 no.
 - Formal Hedgerow 663 1m
 - Native Hedgerow 523 1m
 - Bund Woodland Screen Planting 3.81 Ha (not corrected for gradient)
 - Semi-Ornamental Shrub Planting 876 sq.m.
 - Long Meadow Grass 5.30 Ha
 - Mown Amenity Grass 0.22 Ha
 - Wetland Planting Mix 1.7 Ha
 - Wildflower Meadow 0.82 Ha
 - Pond Marginal & Aquatic Planting 880 sq.m. (20% of attenuation basin permanently wet)
 - Indicative Mown Footpath Route
 - Indicative Hard Footpath Route

TOTAL AREA GI SITE WIDE 8.22 Ha (not including On-Plot Units)

REV	DATE	DESCRIPTION	DESIGNED BY	CHECKED BY	DATE
1	10/01/2024	Masterplan	JES	IDR	
2	10/01/2024	Environmental Assessment	JES	IDR	
3	10/01/2024	Landscaping Design	JES	IDR	
4	10/01/2024	Urban Design	JES	IDR	
5	10/01/2024	Ecology	JES	IDR	
6	10/01/2024	Architecture	JES	IDR	
7	10/01/2024	Arboriculture	JES	IDR	

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environmental assessment
landscape design
urban design
ecology
architecture
arboriculture

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client
Brackley Property Developments Ltd

project
**Burnaston Cross
Willington**

drawing title
Site Green Infrastructure Strategy

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job number 8358	status First Issue
sheet size A0	scale 1:1000

CAD file: K:\8309\8358\LANDSCAPING\8358 L-03 Sitewide GI Strategy.dwg

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