



Carlton Road, Barnsley
Preliminary Ecological Appraisal
Keepmoat Homes Limited

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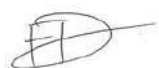
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Executive Summary

Ecus Ltd was originally commissioned by Keepmoat Homes Ltd in June 2017 to undertake a Preliminary Ecological Appraisal of land off Carlton Road, Barnsley,. Following changes to the site layout and planting proposals in July 2019, a desk based review has been undertaken and the ecological assessment and recommendations updated accordingly.

The Site comprises a 3.2 ha area of land consisting predominantly of arable farmland, semi-improved grassland, amenity grassland and tall ruderal vegetation. Scattered trees, broadleaved woodland and scrub are also present. All Site habitats are considered to be of importance to nature conservation at the Site level only.

Proposals for the Site comprise the construction of 93 dwellings with associated access and soft landscaping. Total landtake of arable land, amenity grassland and tall ruderal will be required to facilitate the construction stage. Some scattered trees and the majority of the broadleaved woodland are to be retained and six new areas of Public Open Space (POS) are to be created as part of the development.

An ecologically sensitive planting design and schedule based on the updated site layout has been produced for the development to mitigate for the loss of habitats on Site. Native species which favour flowering, pollen/nectar production and/or berry/fruit production have been selected where possible.

A Tree Protection Plan (TPP) has been produced in accordance with British Standard 5837 (2012): Trees in relation to Design, Demolition and Construction, to protect scattered trees and areas of broadleaved woodland that are to be retained on Site. It is recommended that this be reviewed and updated to reflect any layout changes, as applicable.

Great crested newts are considered unlikely to be present on Site. However, in the unlikely event that a great crested newt is encountered, works should stop at that location and a suitably qualified ecologist be contacted immediately for advice on how to proceed. There is potential for common amphibians to utilise Site habitats as part of a wider foraging area. If encountered during Site works any common amphibians should be carefully moved off Site with gloved hands and placed in a nearby area of vegetation, which is to remain undisturbed.

Given the time lapse since the original Ecological Appraisal, and as badgers may move across the Site from time to time, it is recommended that a pre-commencement badger walkover is undertaken up to 3 months in advance of construction works commencing (post planning consent), to confirm whether badger usage of the Site has materially changed since the original appraisal and if necessary update the mitigation measures. Taking a best practice approach during the construction stage, all deep excavations should also be covered overnight unless completely fenced off and any unfenced/uncovered shallow excavations should have a scaffold board or equivalent placed in them to one side to act as an escape ramp. This approach will also safeguard hedgehogs and brown hare.

There is potential for active birds' nests to be destroyed during vegetation removal. As a precautionary measure, it is recommended that any tree or scrub removal should be undertaken outside of the bird breeding season, which is typically recognised as March – August (inclusive). If it is not possible to schedule vegetation removal works for September to February, a nesting bird check should be undertaken by a suitably qualified ecologist ahead of vegetation works commencing.

Any vegetation removal not completed within the subsequent 48 hour period after the nesting bird check should have a repeat visit undertaken.

There is low potential for reptiles to use the site boundaries as part of a wider foraging resource. As a precautionary measure, it is recommended that the Site strip is undertaken in a systematic directional manner in semi-improved grassland and tall ruderal habitats, to allow reptiles to move out of the way of machinery of their own accord, should they be present in the local area.

Should a hedgehog be discovered on Site at any time, it should be moved carefully with gloved hands to a sheltered area away from the footprint of works e.g. retained woodland.

Should the area of Japanese knotweed require removal, a specialist should be engaged to produce a specific Japanese Knotweed Method Statement to ensure the plant and associated waste is removed appropriately and carefully without risk of spreading on Site, or being transferred off-site. Japanese knotweed and its spoil will need to be disposed of at a registered waste facility licensed to receive this plant species.

No other ecological constraints have been identified during the ecological assessment. Ecological enhancement recommendations appropriate to the Site have been included within the report.

1. Introduction

1.1 Background

- 1.1.1 Ecus Ltd was commissioned by Keepmoat Homes Ltd in June 2017 to undertake a Preliminary Ecological Appraisal of land off Carlton Road, Barnsley (central national grid reference: SE 35842 08538), hereafter referred to as 'the Site'. The survey was undertaken to inform a planning application for the redevelopment of the land and a review/update of the reporting has been undertaken in 2017 following changes to the site design.
- 1.1.2 The Site comprises a 3.2 ha area of land consisting predominantly of arable farmland, amenity grassland and tall ruderal herbs with semi-improved grassland, broadleaved woodland and scattered trees. Habitats to the south of the site are dominated by arable land, ploughed and bare at the time of survey. Northern habitats adjacent to Springwell Community School are dominated by amenity grassland.
- 1.1.3 The purpose of the extended Phase 1 habitat survey was to review the potential for the Site to contain, or be used by, species protected under either UK or European nature conservation legislation, namely, the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2010 and the Natural Environment and Rural Communities Act 2006. For full details of legislation relating to all habitats and species discussed within this report visit <http://www.legislation.gov.uk>.
- 1.1.4 This report details the findings of the survey work and subsequent impact assessment. Methodologies employed are described including Site surveys and evaluation and the need for any further survey work and/or mitigation measures are included, where appropriate. Recommendations for ecological enhancements are also provided.

2. Methodology

2.1 Data Consultation

- 2.1.1 Data consultation was undertaken by Ecus Ltd in August 2017 with Sheffield Biological Records Centre (SBRC) as part of the ecological assessment process, to determine whether there are any existing biological records or locally designated sites of nature conservation interest within 1.5 km of the Site.
- 2.1.2 The Multi-Agency Geographic Information for the Countryside (MAGIC) website (<http://www.magic.gov.uk/>) was consulted in August 2017 for information on statutory designated sites of nature conservation interest within 1.5 km of the Site.
- 2.1.3 Information returned from SBRC and MAGIC is incorporated within this report in the relevant sections.

2.2 Extended Phase 1 Habitat Survey

- 2.2.1 The Site was surveyed on 14th August 2017 using extended Phase 1 habitat survey methodology (JNCC, 2010) by Ecus Associate Director Stuart Silver MCIEEM. A second visit to walkover an additional area of land that was added to the site boundary was undertaken on the 25th August by graduate ecologist Lucy Brookfield. The habitats and vegetation types present were recorded on a field map. This survey method aims to characterise habitats and communities present and is not intended to provide a complete list of all plants occurring across the Site.
- 2.2.2 Notable, rare or scarce plant species were highlighted if present. Evidence of protected species or species of nature conservation importance was recorded where present at the time of survey. Species recorded are included within the report as appropriate. Information is presented in Figure 1, using Target Notes (TN) to identify particular features of interest, where appropriate.
- 2.2.3 Habitats present that are listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and the local Biodiversity Action Plans (LBAP) were noted.
- 2.2.4 The value and sensitivity of ecological features present on Site were determined based on the guidance given in 'Guidelines on Ecological Impact Assessment' (CIEEM, 2018). Individual ecological receptors (habitats and species that could be affected by the development) for the scheme were assigned levels of importance for nature conservation. The highest level is international, then decreasing in order of importance through national, regional, county, local to lastly, Site level only.

2.3 Protected and Key Species

- 2.3.1 Any evidence of protected species or groups encountered during the survey was recorded. This included observations of field signs and an assessment of the suitability of the habitats present to support protected species. For full details of legislation relating to all habitats and species discussed within this report visit <http://www.legislation.gov.uk>.

Amphibians

- 2.3.2 Ponds within 500 m of the Site, which are not separated from the Site by a major barrier, were searched for using an Ordnance Survey (OS) map and subject to Habitat Suitability Assessment (HSI) to assess their suitability to support great crested newt (*Triturus cristatus*).
- 2.3.3 The great crested newt is a habitat specialist and its status in a given water-body is influenced by the existence of particular features (e.g. fish, heavy shading) and/or the absence of others (e.g. suitable terrestrial habitat within 500 m). The HSI provides a numerical value (ranging from 0 to 1) that indicates the suitability of a waterbody for great crested newts. The higher the HSI score, the more suitable (or closer to optimum habitat conditions) the waterbody may be considered for great crested newts. However, it should be noted that the HSI score is no substitute for the judgement of an experienced surveyor.

Badger

- 2.3.4 Signs of badger (*Meles meles*) activity were searched for within the Site as part of the extended Phase 1 survey. Survey followed standard methodology detailed in Surveying Badgers (Harris *et al.*, 1989). This included survey for badger setts, along with survey of linear features and boundaries for signs of badger activity including dung pits, foraging marks, feeding signs and pathways.

Bats

- 2.3.5 No buildings are present on the Site. Trees within the Site were assessed for their potential to support roosting bats as part of the extended Phase 1 habitat survey.
- 2.3.6 An individual tree may have several features of potential interest to roosting bats associated with it. It is not always possible to confirm usage of a feature by bats as often the animals may be present on one day and no evidence of occupation may be found on the next. Consequently it is customary when undertaking such surveys to assign each feature to a defined category of roosting potential as follows: Negligible, Low, Moderate, High, Confirmed (Collins, 2016).
- 2.3.7 The Site was also assessed for its suitability for foraging and commuting bats.

Birds

- 2.3.8 Detailed bird survey was not undertaken as part of this assessment, however whilst on Site the opportunity was taken to record all species of birds encountered and habitats on Site were assessed for their value to nesting and foraging birds.

Reptiles

- 2.3.9 The habitats present on Site were assessed for their suitability to support basking, foraging and hibernating reptiles, with reference to their connectivity with other suitable habitat in the surrounding area.

Riparian Mammals and White-Clawed Crayfish

- 2.3.10 A desk based search for watercourses on the Site, and within 30 m of the

Site, which are not separated from the Site by a major barrier, was undertaken using an Ordnance Survey (OS) map. No watercourses were found and therefore riparian mammals, including water vole (*Arvicola amphibius*) and otter (*Lutra lutra*), along with white-clawed crayfish (*Austropotamobius pallipes*) are not discussed further in this report.

Other Protected and Key Species

- 2.3.11 The opportunity was taken whilst on Site to assess habitats for their potential to support other protected species, search for signs of nationally or locally scarce or notable species, or any species protected under national or international nature conservation law.

2.4 Invasive Species

- 2.4.1 During the walkover survey, the opportunity was also taken to record any invasive plant or animal species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), where present.

2.5 Limitations

- 2.5.1 The survey was undertaken within the botanical survey season, and no constraints to the survey were encountered. It is therefore considered that a robust assessment the Site has been made.

3. Findings and Evaluation

3.1 Site Description

- 3.1.1 The Site comprises land to the south of St Helen's Boulevard, on the former Springwell Community School site, and arable land to the south. The Site covers approximately 3.2 ha of land comprising amenity grassland, tall ruderal vegetation, scattered trees, broadleaved woodland and an arable field with semi-improved grassland and dense scrub margins. The site is bordered by a residential estate to the west and further arable and woodland habitat to the east and south of the Site.
- 3.1.2 The Site lies 2 km north-east of Barnsley town centre, with Athersley South to the west and Carlton Industrial Estate to the east.

3.2 Designated Sites

- 3.2.1 A single statutorily designated Site of Special Scientific Importance (SSSI) lies within 1.5 km of the Site, as identified using the MAGIC website (Table 1). The Dearne Valley Local Nature Reserve is 1.1 km south of the Site, designated for its acidic oak woodland with mosaic of wetland habitats.
- 3.2.2 Sheffield Biological Records Centre supplied details of three Local Wildlife Sites (LWS) located within 1.5 km of the Site. Details are provided in Table 1 below.
- 3.2.3 **Table 1: Designated Sites within 1.5 km of the Site**

Designated Site	Description from Citation	Approximate Distance and Direction from Site
Statutory		
Dearne Valley Local Nature Reserve	Acidic oak woodland with mosaic of wetland habitats	1.1 km south
Non-Statutory		
Old Mill Lane LWS	No information	1.2 km south west
Barnsley Canal at Wilthorpe LWS	No information	1.3 km south west
Cliff Wood LWS	No information	1.4 km south

3.3 Habitats

Arable

- 3.3.1 The southern extent of the Site is dominated by arable land. This was ploughed and bare at the time of the survey, with little to no field margin.
- 3.3.2 Arable land is typically of limited intrinsic botanical value, unless specifically managed to encourage arable wildflowers, which this site does not appear to be. Given the abundance of similar habitat in the local area, the arable habitat on Site is considered to be of importance to nature conservation at the Site level only.

Scrub

- 3.3.3 At the south of the site, a 5 m field margin is present bordering the arable field

adjacent to housing. This habitat is dominated by bramble (*Rubus fruticosus* agg.), with abundant common nettle (*Urtica dioica*) and frequent creeping thistle (*Cirsium arvense*).

- 3.3.4 A thin line of scattered scrub is present within the tall ruderal at the north of the Site. Species recorded include dog rose (*Rosa canina*), bramble, willow (*Salix* sp.) and lilac (*Syringa* sp.). Scattered scrub is also present along the northern boundary of the central field with species including dog rose, guelder rose (*Viburnum opulus*) and pyracantha (*Pyracantha coccinea*).
- 3.3.5 Scrub habitat is not included as habitats of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 or listed on the Barnsley BAP. The scrub contributes to habitat structure on Site, however an abundance of similar habitat is present within the surrounding area including within established gardens and within the wooded valley to the north-west of the Site. As such, the scrub habitats on site are not considered to be of importance to nature conservation at greater than the site level.

Amenity Grassland

- 3.3.6 Short, regularly mown grassland is present adjacent to St Helen's Boulevard as formal greenspace. Species recorded within this habitat include: annual meadow grass (*Poa annua*), white clover (*Trifolium repens*), dandelion (*Taraxacum officinale* agg.), yarrow (*Achillea millefolium*), creeping buttercup (*Ranunculus repens*), ribwort plantain (*Plantago lanceolata*), Yorkshire fog (*Holcus lanatus*) and common daisy (*Bellis perennis*).
- 3.3.7 Amenity grassland is not included as a habitat of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 or listed on the Sheffield LBAP. The grassland on Site is species poor and limited in extent. Given the abundance of similar habitat in residential gardens west of the Site the amenity grassland is considered to be of importance to nature conservation at the site level only.

Tall Ruderal Vegetation

- 3.3.8 Areas of tall ruderal vegetation are present in the south western field margin. Species recorded within this habitat include, but are not limited to, creeping thistle (*Cirsium arvense*), common nettle, false oat grass (*Arrhenatherum elatius*), cock's foot (*Dactylis glomerata*), Yorkshire fog, bramble, broad-leaved dock (*Rumex obtusifolius*) and hedge bindweed (*Calystegia sepium*).
- 3.3.9 Tall ruderal vegetation is also present on the former school site previously supporting the school buildings. Species recorded here include: mayweed (*Tripleurospermum inodorum*), mugwort (*Artemisia vulgaris*), common ragwort (*Jacobaea vulgaris*), tansy (*Tanacetum vulgare*), burdock (*Arctium* sp.), dandelion, catsear (*Hypochaeris radicata*), field poppy (*Papaver rhoeas*), white clover (*Trifolium repens*), weld (*Reseda luteola*), creeping thistle and knapweed (*Centaurea nigra*). Common nettle, broad-leaved dock and hedge bindweed are also present at the field boundaries.
- 3.3.10 Tall ruderal is not listed as a priority habitat on Section 41 of the NERC Act 2006, and is not included in the Barnsley BAP. Whilst the tall ruderal vegetation provides some foraging opportunities for a range of species, this habitat is commonly occurring in the local and wider area and consequently is not considered to be of importance to nature conservation beyond the Site

level.

Scattered Trees

- 3.3.11 Scattered trees are present on the amenity grassland field at the north of the site. Species recorded include Norway maple (*Acer platanoides*), common whitebeam (*Sorbus aria*), rowan (*Sorbus aucuparia*), common lime (*Tilia x europaea*) and bird cherry (*Prunus padus*).
- 3.3.12 Scattered trees are not listed on Section 41 as a priority and are not included on the Barnsley BAP. The trees on Site are therefore not considered to be of importance to nature conservation beyond the Site level.

Broadleaved Woodland

- 3.3.13 Broadleaved woodland is present along the western and southern margins of the central field, with species including ash (*Fraxinus excelsior*), rowan, hawthorn (*Crataegus monogyna*), field maple (*Acer campestre*), oak (*Quercus sp.*), goat willow (*Salix caprea*), alder (*Alnus sp.*), elder (*Sambucus nigra*) white poplar (*Populus alba*) and horse chestnut (*Aesculus hippocastanum*). Ground flora is limited to occasional common nettle. The woodland is relatively young and there are no significant or mature trees within the area. The broadleaved woodland appears to have all been planted at the same time and is all semi-mature in age and likely to have been planted as part of the wider landscaping associated with the school.
- 3.3.14 Broadleaved woodland is not included as a habitat of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 or listed on the Barnsley BAP. This habitat is limited in extent and given extensive similar habitat adjacent to the Site at the northeast, broad leaved woodland on Site is considered to be of importance to nature conservation at the site level only.

Semi-Improved Grassland

- 3.3.15 Semi-improved grassland is present to the south-west boundary of the Site and to the north of the Site, in the location of the former school playing fields. Species recorded in this habitat include: false oat grass, cock's foot, Yorkshire fog, creeping bent (*Agrostis stolonifera*), red clover (*Trifolium pratense*), tufted vetch (*Vicia cracca*), bush vetch (*Vicia sepium*), black knapweed, hawkbit (*Leontodon sp.*), dandelion, creeping buttercup, ribwort plantain, cow parsley (*Anthriscus sylvestris*) and common hogweed (*Heracleum sphondylium*).
- 3.3.16 Semi-improved grassland is not included as a habitat of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 or listed on the Barnsley BAP. This habitat is limited in extent and is considered to be of importance to nature conservation at the site level only.

3.4 Species

Amphibians

- 3.4.1 Sheffield Biological Records Centre returned five records of common amphibians within 1.5 km of the Site including two records of common toad (*Bufo bufo*), one record of common frog (*Rana temporaria*) and two records of smooth newt (*Triturus vulgaris*). These records originate from 2001 at Carlton

Marsh Local Wildlife Site 1.2 km north east of the site and in 2012 at Barnsley Canal 1.5 km south west of the site. No records of great crested newt were returned by the data search.

- 3.4.2 No EPS licences pertaining to great crested newt were identified within 1.5 km of the Site using the MAGIC website.
- 3.4.3 Two ponds were found within 500 m of the Site using an OS map of the area. These lie approximately 210 m to the south and 420 m north east of the Site (Figure 2).

Table 2: Ponds within 500 m of the Site

Pond Reference	Grid Reference	Description	HSI Score/Suitability	Approximate Distance and Direction from the Site
P1	SE 36253 08880	Typha swamp in scrubland area of Carlton Industrial Estate. Little to no open water.	0.56 - Below Average	420 m north east
P2	SE 36088 08228	Wildlife Pond in Monk Bretton	0.69 - Average	210 m south east of Site

- 3.4.4 P1 is located in excess of 250m from the Site and scored below average suitability. P2 is located approximately 210m from the Site and scored average suitability for GCN. However, it is considered highly unlikely that GCN are associated with the Site as the data search did not return any records of GCN within 1.5 km. A subsequent check of records available within the public domain also showed the nearest record of GCN to be located approximately 2km west of the Site. Furthermore P2 is located within an area of woodland which would provide GCN with ample suitable foraging and shelter habitat immediately around the pond thereby reducing any need to disperse across less suitable habitat, i.e. the Site, which is subject to regular disturbance through farming practices. The absence of records, distance from the Site, availability of preferable habitat closer to the ponds, absence of breeding ponds on Site and/or situated to the west of the Site all greatly reduce the likelihood of GCN being associated with the Site. Great crested newts are therefore considered unlikely to be an ecological receptor.
- 3.4.5 A single common frog was recorded during the second survey attendance. However, given the absence of waterbodies on Site and the abundance of alternative habitat located in the local area, the terrestrial habitats on Site are considered to be of importance to common amphibians at the Site level only.

Badger

- 3.4.6 Sheffield Biological Records Centre did not return any records of badger setts for locations within 1.5 km of the Site, however a total of four records of badger tracks and signs of activity were returned as part of the data search. The records were made in September 2010 in Monkbretton, with the closest record 600 m south east of the Site.
- 3.4.7 No evidence of badger (setts or activity) was recorded on Site. Scrub and broadleaved woodland habitats on Site offer some potential for use by foraging badgers should they be resident in the wider area, however there is

abundant similar habitat in the wider area. As such, Site habitats are not considered to be of importance to foraging badgers beyond the Site level.

Bats

- 3.4.8 Sheffield Biological Records Centre returned 53 records of bats including Daubenton's bats (*Myotis daubentonii*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), unidentified pipistrelle species (*Pipistrellus sp.*) and unidentified bats at 14 locations within 1.5 km of the site. 34 of the records pertain to a Daubenton's roost 1.5 km south west of the site. The closest bat record is for a common pipistrelle 560 m south of the site. There are no records of roosting bats within 1 km of the site.
- 3.4.9 No EPS licences pertaining to bats were identified within 1.5 km of the Site using MAGIC.
- 3.4.10 There are no buildings present on Site to provide roosting opportunities. None of the trees on Site displayed suitable features to support roosting bats on the day of survey.
- 3.4.11 Site habitats contribute to a wider foraging resource for bat species resident within the local area. Given the abundance of higher quality habitat, including woodland blocks immediately adjacent to the Site at the northeast, Site habitats are not considered to be of importance to foraging and commuting bats beyond the site level.

Birds

- 3.4.12 In 2015, a re-assessment of Birds of Conservation Concern (BoCC) was published by Eaton *et al.* (2015), which defined rare and threatened bird species on two lists (Red and Amber) describing the level of threat to each species of concern.
- 3.4.13 "Red" is the highest conservation priority, with species needing urgent action due to either a historical decline in breeding population, severe (>50 %) decline in breeding or non-breeding population, or severe decline in breeding range over 50 years or more. "Amber" is the next most critical group, with species qualifying for this status as a result of either recovery from red list criterion, being classed as rare breeders in the UK, moderate (>25 %) decline in breeding or non-breeding population or moderate decline in breeding range over 25 years or more. These categories are followed by "Green", indicating that the species are relatively unthreatened.
- 3.4.14 Sheffield Biological Records Centre returned a total of 836 records comprising 123 bird species for locations within 1.5 km of Site. A total of 10 Schedule 1 bird species, as listed within the Wildlife and Countryside Act 1981 (as amended), are included within the records. Bird species recorded within 1.5 km of the Site are summarised in Appendix 2 and comprise 25 Red and 32 Amber listed species.
- 3.4.15 All records were supplied to a low spatial resolution and their exact locations could not be determined. None of the records pertained to the Site itself, with records largely concentrated along the River Dearne to the west of the Site.
- 3.4.16 Three BoCC green list species were recorded on Site on the days surveyed, comprising woodpigeon (*Columba palumbus*), blue tit (*Cyanistes caeruleus*)

and magpie (*Pica pica*).

- 3.4.17 The scattered trees and scrub on Site have potential to provide structural cover for a variety of common and urban nesting bird species. The arable land also has some potential to be used by ground nesting bird species, although it is likely to be in small numbers if at all, due to the limited extent. Given the limited size of the Site and abundance of similar habitat within the wider area, Site habitats are considered to be of importance to nesting and foraging birds at the Site level only.

Reptiles

- 3.4.18 Sheffield Biological Records Centre returned three records of reptiles within the 1.5 km search area. Two of these records were made in 2001 at Carlton Marsh Local Wildlife Site 2.5 km north east of the Site, consisting of a red eared terrapin (*Chrysemys scripta subsp. Elegans*) and a grass snake (*Natrix natrix*). A single further record for slow worm (*Anguis fragilis*) was made in 2000. This record was supplied to a low spatial resolution and its exact location could not be determined.

- 3.4.19 The habitats on Site offer some potential for reptiles, with tall ruderal vegetation around field margins and arable land creating a structurally varied habitat with some less vegetated areas for basking. However, suitable habitats are limited in extent, with the south of the Site under heavy disturbance from farming activities. The Site is bordered by residential estates to the west and south, with Carlton Industrial Estate to the north and east which provide a barrier to dispersal. As a result Site habitats are not considered to be of importance to reptiles beyond the Site level.

Other Notable Species

- 3.4.20 SBRC recorded regular brown hare (*Lepus europaeus*) activity at Carlton Marsh Local Wildlife Site, approximately 2.5 km north-east of the Site. In 2001, four hares were noted on three occasions in April, with single hare commonly observed in November and December.
- 3.4.21 The arable land on Site has suitability to be used by brown hare, although the likelihood is considered to be low given the lack of direct connectivity with other suitable habitat to the north-east.
- 3.4.22 Habitats on the Site may support hares and also hedgehogs (*Erinaceus europaeus*) as part of a wider foraging territory. Given the dominance of arable habitat, the habitats on Site are not considered to be of importance to small mammals beyond the Site level.

3.5 Invasive Species

- 3.5.1 Japanese knotweed (*Fallopia japonica*) has been recorded at five locations within the 1.5 km search area, with the closest record 525 m west of the Site on land off Rotherham Road. There are also five records of giant hogweed (*Heracleum mantegazzianum*) and a single record for Himalayan balsam (*Impatiens glandulifera*) between 1 and 1.5 km from the Site.
- 3.5.2 A small patch of Japanese knotweed was recorded at the south of the semi-improved grassland during the walkover survey (TN1, Figure 1). The stand measured approximately 5 x 5 m in size and there was evidence of recent

disturbance with a number of broken stems present. The knotweed is located close to an informal footpath leading from the adjacent housing estate.

4. Ecological Assessment and Mitigation

4.1 Proposals

- 4.1.1 Proposals for the Site comprise the construction of 93 new residential dwellings with associated access and soft landscaping. The following assessment is based on the Planning Layout (Drawing Ref: 1931.01) produced by STEN Architecture July 2019 and the Soft Landscape Proposals including planting schedule (Refs: 12724-LD-01 to 12724-LD-05 Rev G and 12724_LD-06 Rev D) produced by Ecus Ltd, July 2019.
- 4.1.2 Almost total landtake of the 3.2 ha will be required to accommodate the proposed scheme layout. This includes landtake of amenity grassland, arable land, tall ruderal, semi-improved grassland and scattered trees. However, retention of a small number of scattered trees and the majority of the broadleaved woodland is proposed.
- 4.1.3 New planting within the POS areas and across house frontages will include wildflower grass, amenity seed or turf, trees, shrubs, hedgerow, herbaceous plants, climbers, a variety of plant mixes (groundcover, semi-native shrub, medium shrub, ornamental shrub, shade, sunny) and/or bulb planting, as appropriate to the setting.

4.2 Designated Sites

- 4.2.1 All recorded designated sites are separated from the Site by considerable distance and infrastructure. No mechanism by which development of the Site may significantly impact designated sites has been identified as part of this assessment, therefore recorded designated sites are not considered to represent a constraint to future development on Site.

4.3 Habitats

Arable

- 4.3.1 Total landtake of arable habitat will be required to accommodate proposals. Given the low intrinsic ecological value of this habitat, landtake is not considered to be of importance to nature conservation at greater than the Site level.
- 4.3.2 The ecologically sensitive landscaping plan will benefit invertebrates and birds and enhance the ecology of the proposed scheme, helping to comply with the National Planning Policy Framework (NPPF). Where possible, native species have been favoured and species chosen to maximise flowering, pollen/nectar production and/or berries/fruit production to benefit invertebrates, birds and small mammals.

Scrub

- 4.3.3 Total landtake of scrub habitat is required to accommodate the development as proposed. Whilst this habitat can typically contribute to the ecological value of an area, this habitat is limited in its extent and is dominated by bramble which is commonly occurring both locally and throughout the UK. The landtake of scrub habitats is not considered to be of importance to nature conservation at greater than site level.

Amenity Grassland

- 4.3.4 Total landtake of amenity grassland will be required to accommodate the development as proposed. Given the low intrinsic ecological value of this habitat, landtake is not considered to be of importance to nature conservation at greater than the Site level.

Tall Ruderal Vegetation

- 4.3.5 Landtake of the tall ruderal habitat from the Site will be required to facilitate the development. This habitat has developed on the disturbed ground created after demolition of the school and whilst of value to local wildlife, its influence is unlikely to extend beyond the Site and the landtake of this habitat is not considered to be of importance to nature conservation beyond the Site level.

Scattered Trees

- 4.3.6 Landtake of the scattered trees on the amenity grassland at the north of the site will be required to facilitate the development.
- 4.3.7 A Tree Protection Plan (TPP) has been produced for any trees that are due for retention which are present within 5 m of the construction zone. In accordance with British Standard 5837 (2012): Trees in relation to design, demolition and construction, Root Protection Zones (RPZ's) are to be implemented to ensure adequate protection is given to any retained trees and their roots during design and construction. It is recommended that the TPP (Drawing Ref: 10112-ARB-02 Rev C Ecus Ltd, July 2019) be reviewed and updated to reflect any layout changes, as applicable.
- 4.3.8 Tree planting on Site includes a variety of native species to increase diversity as this is considered beneficial for the development and local area. Where practicable, tree species chosen are typical of the local area, of UK provenance and selected to maximise food and nectar sources for birds, invertebrates and small mammal species.

Broadleaved Woodland

- 4.3.9 Retention of the broadleaved woodland habitat is proposed.
- 4.3.10 This will help to retain ecological value and enhance the character of the development. Additional new tree planting is also included within the landscape design, utilising native trees where practicable.

Semi-improved Grassland

- 4.3.11 The semi-improved habitat on site comprises common, frequently occurring species and is limited in extent. Landtake is considered to be of importance to nature conservation at the site level only.
- 4.3.12 The sensitive ecological planting plan mitigates for the loss of semi-improved grassland through the inclusion of replacement planting on site including species-rich wildflower grassland.

4.4 Species

Amphibians

- 4.4.1 Great crested newts are included in Schedule 2 of the Conservation of

Habitats and Species Regulations 2010 (Habitats Regulations). Under the Habitats Regulations great crested newts are protected from deliberate capture, injury or killing, from deliberate disturbance and from deliberate damage or destruction of a breeding site or resting place.

- 4.4.2 Under the Wildlife and Countryside Act 1981 (as amended) it is also an offence to intentionally or recklessly disturb these animals while they are using a structure or place used for shelter or protection, or obstruct access to or damage any such structure or place. The provisions of the Act (1981) also protect great crested newts from activities associated their sale.
- 4.4.3 Common amphibians are protected under the Wildlife and Countryside Act 1981 (as amended) against sale, barter or exchange of captive animals. Common toad is also listed as a priority species under Section 41 of the NERC Act 2006.
- 4.4.4 Great crested newts are considered unlikely to be present on Site. However, in the unlikely event that a great crested newt is encountered, works should stop at that location and a suitably qualified ecologist be contacted immediately for advice on how to proceed.
- 4.4.5 In the event that common amphibians such as common frog and common toad are encountered during Site clearance works, they should be carefully collected by gloved hand and relocated to an area of shelter away from the area of works.

Badger

- 4.4.6 Badgers and their setts are protected under the Protection of Badgers Act 1992. It is an offence under the act to kill, injure or take a badger. It is also an offence to destroy damage or obstruct a currently active badger sett, or to disturb animals within the sett.
- 4.4.7 No badger setts were present on the Site at the time of the survey and no field signs of badger were recorded across the Site. Whilst there is potential for foraging badgers to utilise the Site as part of a wider territory and establish a sett at any time, given the availability of alternative suitable habitat for sheltering and foraging badgers within the local area, the loss of habitats on Site are considered to be of importance to badger at the Site level only.
- 4.4.8 Given the time lapse since the original Ecological Appraisal, and as badgers may move across the Site from time to time, it is recommended that a pre-commencement badger walkover is undertaken up to 3 months in advance of construction works commencing (post planning consent), to confirm whether badger usage of the Site has materially changed since the original appraisal and if necessary update the mitigation measures.
- 4.4.9 As badgers may move across the Site from time to time, taking a best practice approach, all deep excavations (>1 m) should be covered overnight during the archaeological investigation. Shallow excavations (<1 m) should have a scaffold board or equivalent placed in them overnight to allow any badgers to exit, should they fall in.

Bats

- 4.4.10 All species of bat occurring within the UK are included in Schedule 2 of the

Conservation of Habitats and Species Regulations 2010 (as amended). Under regulation 41 bats are protected from deliberate capture, injury or killing, from deliberate disturbance and from deliberate damage or destruction of a breeding Site or resting place (roost).

- 4.4.11 All UK bats are also included on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). However, their protection is limited to certain offences. Under the 1981 Act (as amended) it is an offence to intentionally or recklessly disturb bats while they are occupying a structure or place used for shelter or protection, or to obstruct access to any such place.
- 4.4.12 Barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteinii*), brown long-eared (*Plecotus auritus*), greater horseshoe (*Rhinolophus ferrumequinum*), lesser horseshoe (*Rhinolophus hipposideros*), noctule and soprano pipistrelle (*Pipistrellus pygmaeus*) bats are included as priority species under Section 41 of the NERC Act 2006.
- 4.4.13 The habitat on Site that is of highest value for bat foraging e.g. broadleaved woodland is to be retained. There is also similar alternative habitat present in the immediate surrounding area. As such, landtake of habitats on Site is therefore considered to be of importance to foraging bats at the Site level only.
- 4.4.14 Consideration has been given to creating long term bat roosting opportunities within the fabric of the new development, thereby complying with the National Planning Policy Framework (NPPF) aim that "opportunities to incorporate biodiversity in and around developments should be encouraged" (NPPF, 2012). Such roosting provision comprises integral bat boxes, such as Schwegler 1FR tubes or Habibat bat boxes, to be installed at the construction stage on a c.10% box: building ratio.. These units provide integral roosting provision that is both discreet and secure, creating a self-contained cavity that does not provide access into the wall cavity. Bat tubes/boxes should be placed a minimum of 4 m from ground level on southerly facing aspects and ideally at eaves level and away from bright light spill. In addition, bat boxes could be sited on retained mature trees. Suggested locations are illustrated on the landscape drawings, Ecus Ltd July 2019. Further information on installing bat roosting provision can be provided by Ecus if required.

Birds

- 4.4.15 All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended) against destruction of the nest during the bird nesting season, which falls between March and August, inclusive.
- 4.4.16 The scattered trees and broadleaved woodland on Site offer structural cover for a variety of nesting birds. However, given the limited extent of the Site, age of the trees and the abundance of similar habitat within the local and wider area, landtake is not considered to be of importance to nesting and foraging birds above the Site level.
- 4.4.17 Without mitigation there is potential for active bird nests to be destroyed during Site strip and topsoil spreading. Therefore as a precautionary measure, it is recommended works should be undertaken outside of bird breeding season i.e. undertaken between September to February inclusive, if possible. Where tree and scrub removal cannot be scheduled for these months, a nesting bird check should be carried out by a suitably experienced

ecologist to identify whether any active nests are present and advise on appropriate working methods accordingly. Where vegetation removal is permitted to proceed but is not completed within 48 hours, a repeat check should be undertaken. Where active nest sites are identified, monitoring visits by an ecologist may be required to confirm when the chicks have fledged/the nest is no longer in use.

- 4.4.18 Inclusion of a range of bird nesting provision across the development is considered a positive enhancement for nature conservation and would comply with the NPPF aims for biodiversity (2018). Suitable provision includes general bird boxes with 26 mm and 32 mm entrance holes suitable for a range of garden bird species and sparrow terrace bird boxes, designed to support house sparrows. The bird boxes should be placed at a minimum height of 3 m in a number of locations facing different aspects to maximise the chances of occupation. However, full south aspects which receive sun all day during the summer months present a risk of overheating and should therefore be avoided. Suggested locations based on a 10% box to building ratio are illustrated on the landscape drawings (Ecus Ltd, July 2019).

Reptiles

- 4.4.19 Grass snake, slow worm and common lizard (*Zootoca vivipara*) are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) against intentional killing or injuring.
- 4.4.20 Given the presence of suitable habitat on Site it is recommended that the Site strip is undertaken in a systematic directional manner in semi-improved grassland and tall ruderal habitats, to allow reptiles to move out of the way of machinery of their own accord, should they be present in the local area.

Other Notable Species

Hedgehog and Brown Hare

- 4.4.21 Hedgehogs receive partial protection under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) from intentional killing or capture by certain methods. They are also included as a priority species under Section 41 of the NERC Act 2006 due to the sharp population declines experienced by this species in recent years.
- 4.4.22 Brown hare receive a measure of protection through the Hares Preservation Act 1892, which prohibits the sale of hares or leverets between 1 March and 31 July and are also listed on Section 41 of the NERC Act 1996 as a species of principal importance.
- 4.4.23 Should a hedgehog be discovered on Site at any time, it should be moved carefully with gloved hands to a sheltered area away from the footprint of works e.g. retained woodland.
- 4.4.24 Hedgehogs and brown hares are highly mobile and inquisitive animals that have potential to move onto Site at any time, therefore as a precautionary measure, it is recommended that any excavations left overnight should be covered or have a suitable escape ramp e.g. a long scaffold boards, inserted to allow escape.
- 4.4.25 The creation and maturing of new garden habitats on Site is considered to be

an enhancement for small mammals such as hedgehog, which have suffered significant and widespread declines over the past decade. To allow for dispersal of small mammals between gardens, small gaps beneath or between garden fences are to be included across the development if close boarding fencing is to be used. Gaps should also be provided between boundary fences and the adjacent arable land. Indicative positions for connectivity gaps are illustrated within the landscape drawings.

4.5 Invasive Species

- 4.5.1 In the UK it is an offence under the Wildlife and Countryside Act 1981 (as amended) to “plant or otherwise cause to grow in the wild” any plant species listed in Schedule 9 of the Act.
- 4.5.2 Should areas of Japanese knotweed require removal, a specialist should be engaged to produce a specific Japanese Knotweed Method Statement to ensure the plant and associated waste is removed appropriately and carefully without risk of spreading on Site, or being transferred off-site. Japanese knotweed and its spoil will need to be disposed of at a registered waste facility licensed to receive this plant species.

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Drawings

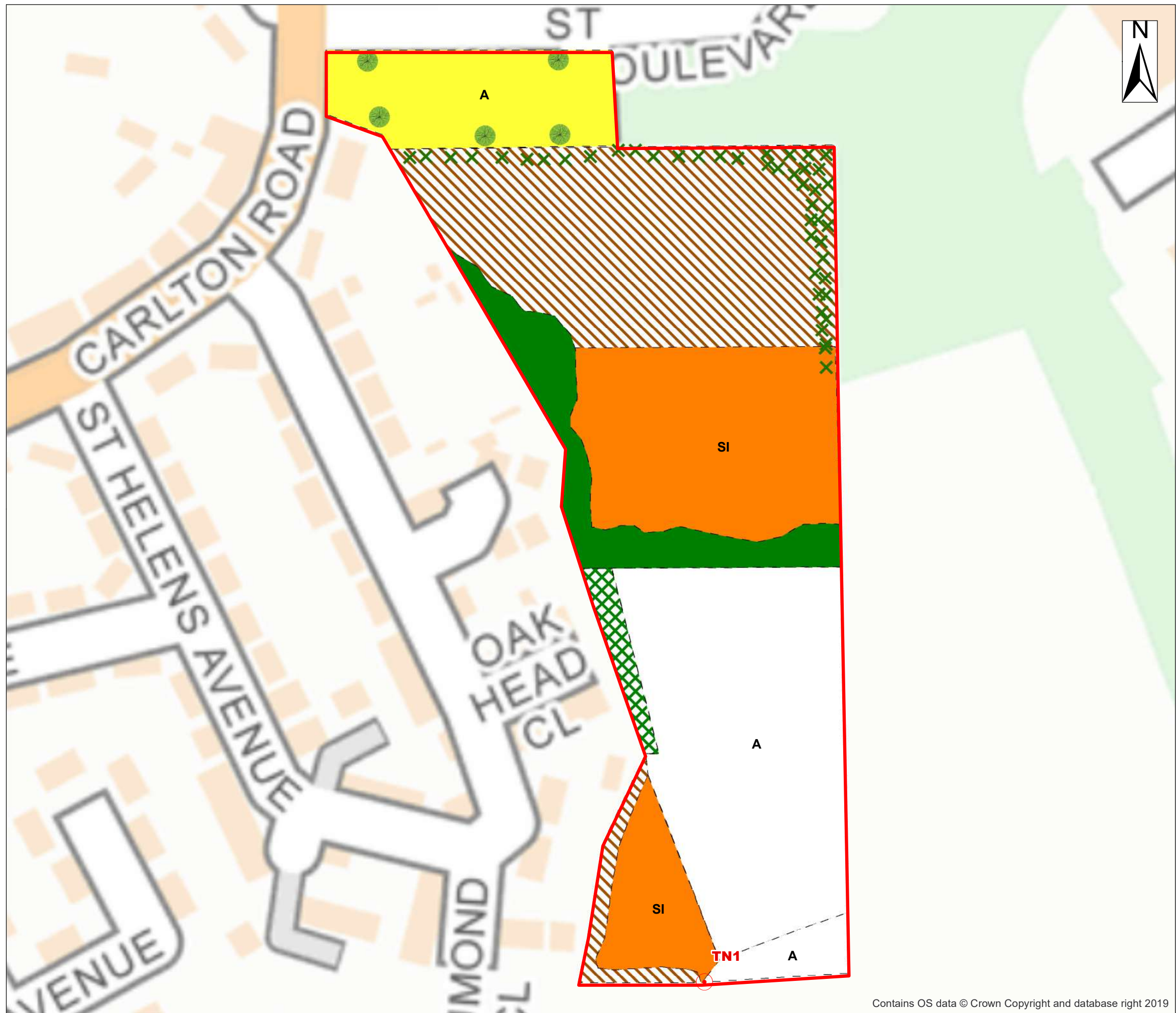
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Arboriculture: Tree Protection Plan Ref: 10112-ARB-02 Rev C. Ecus Ltd, July 2019.

Figure 1. Survey Findings

TN1- Japanese knotweed



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Legend

- Site
- Broadleaved Woodland
- Scattered Tree
- Dense Scrub
- Scattered Scrub
- SI Semi improved Grassland
- Tall Ruderal
- A Arable
- A Amenity Grassland
- TN Target Note

0 25 50
Metres

Keepmoat Homes Limited
Carlton Road, Barnsley

Figure 1
Phase 1 Habitat Survey Findings

Brook Holt 3 Blackburn Road Sheffield S61 2DW
T: 0114 2669292 www.ecusltd.co.uk

Figure 2. Pond Location Map



Legend

- Survey Area
- Pond
- 500 meter buffer

0 125 250
Metres

Keepmoat Homes Ltd
Carlton Road, Barnsley

Figure 2
Pond Location Map

Brook Holt 3 Blackburn Road Sheffield S61 2DW
T: 0114 2669292 www.ecusltd.co.uk

Appendix 1. Bird Species Recorded on or Within 1.5 km of the Site

Common name	Scientific name	BoCC status
Arctic Tern	<i>Sterna paradisaea</i>	Amber
Barn Owl	<i>Tyto alba</i>	Schedule 1, Green
Magpie	<i>Pica pica</i>	Green
Blackbird	<i>Turdus merula</i>	Green
Blackcap	<i>Sylvia atricapilla</i>	Green
Black-Headed Gull	<i>Chroicocephalus ridibundus</i>	Amber
Blue Tit	<i>Cyanistes caeruleus</i>	Green
Brambling	<i>Fringilla montifringilla</i>	Schedule 1, Green
Bullfinch	<i>Pyrrhula pyrrhula</i>	Amber
Buzzard	<i>Buteo buteo</i>	Green
Canada Goose	<i>Branta canadensis</i>	Schedule 9
Carrion Crow	<i>Corvus corone</i>	Green
Chaffinch	<i>Fringilla coelebs</i>	Green
Chiffchaff	<i>Phylloscopus collybita</i>	Green
Coal Tit	<i>Periparus ater</i>	Green
Cockatiel	<i>Nymphicus hollandicus</i>	
Collared Dove	<i>Streptopelia decaocto</i>	Green
Common Gull	<i>Larus canus</i>	Amber
Common Sandpiper	<i>Actitis hypoleucos</i>	Amber
Common Tern	<i>Sterna hirundo</i>	Amber
Coot	<i>Fulica atra</i>	Green
Cormorant	<i>Phalacrocorax carbo</i>	Green
Cuckoo	<i>Cuculus canorus</i>	Red
Curlew	<i>Numenius arquata</i>	Red
Dunnock	<i>Prunella modularis</i>	Amber
Fieldfare	<i>Turdus pilaris</i>	Schedule 1, Red
Gadwall	<i>Anas strepera</i>	Amber
Garden Warbler	<i>Sylvia borin</i>	Green
Common Name	Scientific Name	Status
Goldcrest	<i>Regulus regulus</i>	Green
Golden Plover	<i>Pluvialis apricaria</i>	Green
Goldfinch	<i>Carduelis carduelis</i>	Green
Goosander	<i>Mergus merganser</i>	Green
Grasshopper Warbler	<i>Locustella naevia</i>	Red
Great Black-Backed Gull	<i>Larus marinus</i>	Amber
Great Crested Grebe	<i>Podiceps cristatus</i>	Green
Great Grey Shrike	<i>Lanius excubitor</i>	No Status
Great Spotted Woodpecker	<i>Dendrocopos major</i>	Green

Great Tit	<i>Parus major</i>	Green
Green Sandpiper	<i>Tringa ochropus</i>	Schedule 1, Amber
Green Woodpecker	<i>Picus viridis</i>	Green
Greenfinch	<i>Carduelis chloris</i>	Green
Greenshank	<i>Tringa nebularia</i>	Schedule 1, Amber
Grey Heron	<i>Ardea cinerea</i>	Green
Grey Partridge	<i>Perdix perdix</i>	Red
Grey Wagtail	<i>Motacilla cinerea</i>	Red
Greylag Goose	<i>Anser anser</i>	Schedule 1, Amber
Herring Gull	<i>Larus argentatus</i>	Red
House Martin	<i>Delichon urbica</i>	Amber
House Sparrow	<i>Passer domesticus</i>	Red
Jack Snipe	<i>Lymnocyptes minimus</i>	Green
Jackdaw	<i>Corvus monedula</i>	Green
Jay	<i>Garrulus glandarius</i>	Green
Kestrel	<i>Falco tinnunculus</i>	Amber
Kingfisher	<i>Alcedo atthis</i>	Schedule 1, Amber
Lapwing	<i>Vanellus vanellus</i>	Red
Lesser Black-Backed Gull	<i>Larus fuscus subsp. graellsii</i>	Amber
Lesser Redpoll	<i>Carduelis cabaret</i>	Red
Lesser Whitethroat	<i>Sylvia curruca</i>	Green
Linnet	<i>Carduelis cannabina</i>	Red
Little Grebe	<i>Tachybaptus ruficollis</i>	Green
Little Owl	<i>Athene noctua</i>	No Status
Little Ringed Plover	<i>Charadrius dubius</i>	Schedule 1, Green
Long-Tailed Tit	<i>Aegithalos caudatus</i>	Green
Magpie	<i>Pica pica</i>	Green
Mallard	<i>Anas platyrhynchos</i>	Amber
Meadow Pipit	<i>Anthus pratensis</i>	Amber
Mistle Thrush	<i>Turdus viscivorus</i>	Red
Moorhen	<i>Gallinula chloropus</i>	Green
Mute Swan	<i>Cygnus olor</i>	Amber
Nuthatch	<i>Sitta europaea</i>	Green
Oystercatcher	<i>Haematopus ostralegus</i>	Amber
Pheasant	<i>Phasianus colchicus</i>	N/A
Pied Wagtail	<i>Motacilla alba</i>	Green
Pink-Footed Goose	<i>Anser brachyrhynchus</i>	Amber
Pintail	<i>Anas acuta</i>	Schedule 1, Amber
Pochard	<i>Aythya ferina</i>	Red
Red-Legged Partridge	<i>Alectoris rufa</i>	No status
Redshank	<i>Tringa totanus</i>	Amber
Redstart	<i>Phoenicurus phoenicurus</i>	Amber

Redwing	<i>Turdus iliacus</i>	Schedule 1, Red
Reed Bunting	<i>Emberiza schoeniclus</i>	Amber
Reed Warbler	<i>Acrocephalus scirpaceus</i>	Green
Robin	<i>Erithacus rubecula</i>	Green
Rock Dove	<i>Columba livia</i>	Green
Rook	<i>Corvus frugilegus</i>	Green
Rose-ringed Parakeet	<i>Psittacula krameri</i>	
Ruddy Duck	<i>Oxyura jamaicensis</i>	Schedule 0
Sand Martin	<i>Riparia riparia</i>	Green
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	Green
Shoveler	<i>Anas clypeata</i>	Amber
Siskin	<i>Carduelis spinus</i>	Green
Skylark	<i>Alauda arvensis</i>	Red
Snipe	<i>Gallinago gallinago</i>	Amber
Song Thrush	<i>Turdus philomelos</i>	Red
Sparrowhawk	<i>Accipiter nisus</i>	Green
Starling	<i>Sturnus vulgaris</i>	Red
Stock Dove	<i>Columba oenas</i>	Amber
Stonechat	<i>Saxicola torquata</i>	Green
Swallow	<i>Hirundo rustica</i>	Green
Swift	<i>Apus apus</i>	Amber
Tawny Owl	<i>Strix aluco</i>	Amber
Teal	<i>Anas crecca</i>	Amber
Tree Pipit	<i>Anthus trivialis</i>	Red
Tree Sparrow	<i>Passer montanus</i>	Red
Treecreeper	<i>Certhia familiaris</i>	Green
Tufted Duck	<i>Aythya fuligula</i>	Green
Water Rail	<i>Rallus aquaticus</i>	Green
Waxwing	<i>Bombycilla garrulus</i>	Green
Wheatear	<i>Oenanthe sp.</i>	
Whinchat	<i>Saxicola rubetra</i>	Red
Whitethroat	<i>Sylvia communis</i>	Green
Wigeon	<i>Anas penelope</i>	Amber
Willow Tit	<i>Poecile montanus</i>	Red
Willow Warbler	<i>Phylloscopus trochilus</i>	Amber
Wood Warbler	<i>Phylloscopus sibilatrix</i>	Red
Woodcock	<i>Scolopax rusticola</i>	Red
Wood pigeon	<i>Columba palumbus</i>	Green
Wren	<i>Troglodytes troglodytes</i>	Green
Yellow Wagtail	<i>Motacilla flava</i>	Red
Yellowhammer	<i>Emberiza citrinella</i>	Red

