Land at Shortstown, Bedfordshire

Preliminary Ecological Appraisal Report

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This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS OHSAS 18001:2007)

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Comments

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1. Introduction

1.1. Waterman Infrastructure & Environment Ltd (Waterman) was commissioned by Gallagher Developments Ltd to carry out a Preliminary Ecological Appraisal (PEA) at for Land at Shortstown, and area of land to the north, west and south of Shortstown, Bedfordshire (hereafter referred to as the 'Site').

1.2. This PEA will be used by Barton Wilmore to compile a Briefing Note and to support the concept master plan (**Appendix A**), to support promotion of the Site for development and inclusion in the Bedfordshire Local Plan.

1.3. The Site is located on the outskirts of Shortstown, south of Bedford in Bedfordshire. A site walkover was undertaken on 19th June 2019.

1.4. This Preliminary Ecological Appraisal (PEA) includes a Phase 1 Habitat Survey and a review of existing ecological data from nearby sites, Multi-Agency Geographic Information for the Countryside (MAGIC) and the Bedford Borough Council Policies Map.

1.5. No previous ecology work has been undertaken at the Site however, a neighbouring site (c. 500m to the east), Cardington Airfield has been subject to extensive ecological assessments including the following surveys:

- 2011 WLP Ecological Appraisal[1];
- ELP and SELP Ecology Chapters[2,3] of the respective Environmental Statements which accompanied the planning applications for these parcels;
- 2018 Ecological Walkover Survey Technical Note[4]
- Great crested newt *Triturus cristatus* surveys were undertaken in 2010[5] to update previous surveys undertaken in 2004 and 2007;
- Bat commuting surveys undertaken in 2011[2];
- Badger *Meles meles* walkover surveys undertaken in 2004;
- Breeding bird survey undertaken in 2011[2];
- Otter *Lutra lutra* and water vole *Arvicola terrestris* survey in 2003[6];
- Reptile surveys in 2010[5]; and
- Incidental recordings of brown hare and notable species of invertebrates were also recorded, but no specific surveys were undertaken.

1.6. The purpose of this report is to:

- Identify the potential for 'Important Ecological Features' (IEFs) to be present within the identified Zone of Influence (ZoI) and highlight any resulting ecological constraints for any future development;
- Determine the requirement for any additional ecological surveys/assessments needed to inform any future development, at the planning stage; and

[1] Waterman EED (2011): 'Cardington Airfield, Bedford. Western Land Parcel – Ecological Appraisal'. Ref. EED11004_R_1_1_3_LM
[2] Waterman EED (2013): 'Cardington Airfield, Bedford. Eastern Land Parcel - Environmental Statement, Chapter 13 - Ecology
[3] Waterman EED (2013): 'Cardington Airfield, Bedford. South-Eastern Land Parcel - Environmental Statement, Chapter 13 - Ecology
[4] Waterman IE (2018): 'Cardington Airfield, Bedford. Ecological Walkover Survey Technical Note' - WIE13695-101-180418-SF-TN
[5] Waterman EED (2012): 'Cardington Airfield, Bedford. Ecology Update Report' Ref. EED11004_R_2_3_1_SF
[6] Waterman CPM (2006): 'Cardington Airfield, Bedford. Ecological Surveys and Mitigation Strategy. Update Report' Ref. 2514_06c

- Make recommendations for mitigation and enhancement measures, required as part of any future development at the planning stage, to ensure compliance with nature conservation legislation (**Appendix B**) and planning policy.

2. Methodology

Scope of the Assessment

2.1. This section summarises the methodologies used for undertaking the PEA based on current guidelines[7],[8]. The ZoI is the area(s) over which ecological features maybe impacted by the biophysical changes caused by the future development. Based on the scale and nature of the future development, it has been assessed that the ZoI arising from these works is unlikely to be greater than 2km from the Site. Therefore, this distance has been used to collect the ecological data search information. The Phase 1 Habitat survey area comprised primarily the Site, as access was not available to adjacent land (which comprises more arable land and a residential development). However, the adjacent land was viewed where possible from the Site and aerial photography for the area has also been reviewed.

2.2. As referenced in industry guidance, IEFs that are anticipated to be affected by the future development have been identified and subject to assessment. In this report, designated sites, habitats and species that fall into the categories in **Table 1** and **Table 2** have been identified as being ecologically important and/or legally protected and form the scope of data gathering during the Site survey.

Table 1: Geographical Scale of Important Ecological Feature Categories

Geographical Level of Importance	Category
International	Statutory designated sites: Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites (including candidate SACs and proposed SACs, SPAs and Ramsar sites)
National	Statutory designated sites: Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR)[9]; Ancient Woodland; Habitats and species of principal importance for the conservation of biodiversity as listed on Schedule 41 of the NERC Act, 2006, including ecologically important hedgerows under the Hedgerow Regulations; and Red List (using IUNC criteria[10]) and nationally rare or scarce species and Birds of Conservation Concern (Red List[11])
County	Local Nature Reserves (LNR) and Non-statutory designated wildlife sites: known as Sites of Nature Conservation Importance (SNCI's) in Bedfordshire; and Local Biodiversity Action Plan (LBAP) habitats and species.

[7] Chartered Institute of Ecology and Environmental Management (2017) *Guidelines for Preliminary Ecological Assessment.* Technical Guidance Series.

[8] BSI (2013) BS 42020:2013. Biodiversity - Code of Practice for Planning and Development.

[9] DCLG (2012). *National Planning Policy Framework,* paragraph 118.

[10] http://www.iucnredlist.org/technical-documents/categories-and-criteria

[11] https://www.rspb.org.uk/birds-and-wildlife/bird-and-wildlife-guides/bird-guide/status_explained.aspx

Table 2: Legally protected species

Legislation (Summarised in Appendix A)
Species included on Schedules II and V of The Conservation of Habitat and Species Regulations 2017;
Species included on Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended), excluding species that are only protected in relation to their sale (Section 9[5] and 13[2]); and
Badgers, which are protected under the Protection of Badgers Act 1992.

Desk Study

2.3. The aim of the desk study is to collate existing ecological information for the Site and adjacent areas. Obtaining existing information is an important part of the evaluation process, as it provides additional information that may not be apparent during a site survey.

2.4. Records of statutory sites designated for their nature conservation value within 2km of the Site were searched for on the MAGIC[12].

2.5. This assessment does not include a search for non-statutory designated sites.

2.6. In addition, the Bedford Borough Council Policies Map[13] were accessed to see if the Site is covered by any relevant planning policies under the 2008 Core Strategy and Rural Issues Development Plan[14] (CSRID).

2.7. In addition, Habitats of Principal Importance (HoPI) and Species of Principal Importance (SoPI) listed under Section 41 (S41) of the NERC Act, as well as Habitat Action Plans (HAPs) and Species Action Plans (SAPs) listed under the Bedfordshire & Luton Biodiversity Action Plan (BAP), were consulted to assign an ecological context to the Site.

2.8. Furthermore, a review of ecological data collected by an adjacent site; Cardington Airfield also was undertaken.

Phase 1 Habitat Survey

2.9. A Phase 1 Habitat Survey of the Site was undertaken on the 19th of June 2019 using the Joint Nature Conservancy Council[15] standard 'Phase 1' survey technique. All habitat types within the Site were mapped with target notes where appropriate. The survey of the Site was conducted under conditions deemed appropriate for survey, being dry and cloudy.

2.10. Where access allowed, adjacent habitats were also considered to assess the Site within the wider landscape, and to provide information with which to assess possible impacts of the proposed future development.

2.11. A detailed floral species list was collated for the Site during the Phase 1 Habitat Survey. As such, the species list detailed can be used to inform any future BREEAM reports (specific assessment guidelines dependant.

[12] Magic.defra.gov.uk. (2019). *Magic*. [online] Available at: http://magic.defra.gov.uk/ [Accessed: June 2019].
[13] Bedford Borough Council (2014) [online] Available at: https://www.bedford.gov.uk/planning-and-building/planning-policy-its-purpose/policies-map/ [Accessed: June 2019]
[14] Bedford Borough Council (2014) ore Strategy and Rural Issues Plan Development Plan Document 2008.
[15] JNCC. (2010). *Handbook for Phase 1 Habitat Survey*. Nature Conservancy Council

Invasive Plant Species Assessment

2.12. The list of invasive plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive and these plants are found in a range of different habitats, including aquatic habitats.

IEF Assessment

2.13. Data gathered as part of this PEA has been used to identify potential IEFs (i.e. designated sites, habitats and species as listed in **Tables 1** and **2**) that are anticipated to be affected by the future development within the ZoI (up to 2km from the Site).

2.14. However, not all the IEFs within the ZoI have the potential to be significantly affected by the development, or the legislation pertaining to them to be contravened. Therefore, where features are unlikely to be affected by the development, or where any effects that impact IEFs are unlikely to be significant, for the reasons[16] listed below, such features have been scoped out of the assessment:

- No pathway of effect has been identified, for example the feature is sufficient distance from the Site or there is the presence of a barrier between its location and the Site[17] ; or
- The feature is of insufficient biodiversity conservation value within the ZoI, due to its quality, extent or population size[18].

2.15. For all remaining features scoped into the assessment, the pathway of effect (e.g. habitat loss, lighting, noise etc.) and potential impact of this on the feature have been identified.

Constraints and Limitations

2.16. There was no access into the grounds of a residential building as it appeared to be a private property. The habitats located in this area were viewed from the adjacent road. In addition, not all areas of the Site were accessible due to the dense vegetation and to avoid damaging crops.

2.17. All other contractors, designers and the client should be aware of the following: The design recommendations within this report are assessed to be the most effective ecological solution at this initial stage of the project. No other pre-construction information has been provided, obtained or referred to during the preparation of this report (including, but not limited to, services information, geotechnical reports and ordnance reports). In deciding whether and how to progress with this project, it will be incumbent upon the client, designers and contractors to obtain and refer to relevant pre-construction and maintenance information, as required by the Construction (Design and Management) Regulations to ensure compliance. Waterman can assist with the development and co-ordination of this design to support effective risk management on this project upon request.

[16] Positive or negative effects on ecological features that have the potential to influence a planning decision are considered to be significant

[17] Whilst the ZoI of potential effects arising from the development is up to 2km from the Site, the ecological ZoI (within which the feature could be affected) for each feature may vary and for some features may be much less, e.g. great crested newts generally move up to a maximum of 500m from a breeding pond and movement can be restricted by barriers such as busy roads and fast flowing rivers

[18] E.g. whilst a Priority Species such as skylark *Alauda arvensis* or house sparrow *Passer domesticus* is of National importance (**Table 2**), the impact of development on individual or a small population of such a species, which are generally commonly found, is unlikely to be assessed as significant

3. Results

Desk Study

Statutory Sites

3.1. The Site is not located within 2km of any statutory designated sites.

Ancient Woodland

3.2. The Site is not located within 2km of ancient woodland.

Phase 1 Habitat Survey

Habitats

3.3. The following habitat types, described in more detail below, were identified on and directly adjacent to the Site during the 'Extended' Phase 1 Habitat Survey:

- Amenity grassland;
- Arable;
- Bare ground;
- Buildings;
- Ditches;
- Ephemeral/ short perennial;
- Hardstanding;
- Hedgerows;
- Scattered trees;
- Semi-improved grassland;
- Semi-natural broad-leaved woodland; and
- Tall ruderal.

3.4. A summary of the habitats is detailed below. The habitat descriptions should be read in conjunction with **Figure 4 to 10** which includes target notes and photographs (**Plates**) are presented in **Appendix C**.

Amenity grassland

3.5. An area of well-maintained amenity grassland was present around the residential building, with a sward height of approximately 50mm (**Plate**). The dominating species was Yorkshire fog *Holcus lanatus* and perennial ryegrass *Lolium perenne*.

Arable

3.6. The majority of the Site comprised eleven large arable fields. Crops included a grain, possible wheat or barley (**Plate**) and a variety of edible pea (**Plate**).

3.7. Arable crop field margins are listed as a HoPI and a HAP.

Bare ground

3.8. Areas of bare ground were present in the field margins where the Site has been regularly used by vehicles such as tractors. Ephemeral / short perennial species (see below) were regularly colonising the bare ground (**Plate**).

Buildings

3.9. Several farm buildings (**Plate**) were present on Site as well as what appeared to be a boarded up residential property (**Plate**).

Ditches

3.10. A network of dry and wet ditches was recorded on Site, following field margins and located adjacent to hedgerows and with tall ruderal frequently recorded adjacent and within the ditches. Emergent vegetation was recorded occasionally however, was not possible to identify due to access restrictions.

Ephemeral/ short perennial

3.11. Ephemeral / short perennial habitat was recorded colonising areas of bare ground and hardstanding (**Plate**). Numerous herb species were recorded, in addition to the occasional grass species recorded in the semi-improved grassland described below. The following species were recorded: cat's-ear *Hypochaeris radicata*, mouse-ear *Cerastium fontanum*, scentless mayweed *Tripleurospermum inodorum*, pineapple weed *Matricaria discoidea*, black medic *Medicago lupulina*, white clover *Trifolium repens*, kidney vetch *Anthyllis vulneraria*, lesser stitchwort *Stellaria graminea*, creeping cinquefoil *Potentilla reptans*, field speedwell *Veronica persica*, groundsel *Senecio vulgaris*, sow-thistle *Sonchus spp*, hairy tare *Vicia hirsute*, cut-leaved cranesbill *Geranium dissectum*, hedgerow cranesbill *G. pyrenaicum*, colt'sfoot *Tussilago farfara* and ribwort plantain *Plantago lanceolata.*

Hardstanding

3.12. Hardstanding was recorded in the form of tracks and pathways throughout the Site (**Plate** and **Plate**). Where the hardstanding was in poor condition, ephemeral / short perennial (see above) species has started to colonise.

Hedgerows

3.13. Hedgerows were recorded throughout the Site, acting as field boundaries and often adjacent to ditches and tall ruderal habitat (**Plate**). Scattered trees were occasionally present within the hedgerows (**Plate**). The hedgerows ranged from 1 to 2m in height.

3.14. The dominant plant species recorded was blackthorn *Prunus spinosa* and hawthorn *Crataegus monogyna* with infrequent beech *Fagus sylvatica,* elder *Sambucus nigra* and field maple *Acer campestre.* Old man's beard *Clematis vitalba* and field bindweed *Convolvulus arvensis* were occasionally recorded scrambling through the hedgerows.

3.15. Hedgerows are listed as a HoPI and a HAP.

Scattered trees

3.16. Scattered trees were present amongst the hedgerows (**Plate**) and standalone trees (**Plate**) adjacent to the residential building. Species recorded included Lombardy poplar *Populus nigra 'Italica*, English oak *Quercus robur*, sycamore *Acer pseudoplatanus*, ash *Fraxinus excelsior*, sweet chestnut *Castanea sativa* and beech. Ivy *Hedera helix* was frequently recorded scrambling up the trees.

Semi-improved grassland

3.17. Semi-improved grassland was recorded adjacent to the farm buildings (**Plate**). It appeared to be under semi-regular management with a sward height of approximately 150mm. Wall barley *Hordeum murinum*, common bent *Agrostis capillaris*, false oat grass *Arrhenatherum elatius*, Yorkshire fog and perennial ryegrass were the dominant plant species with occasional herb species such as creeping buttercup *Ranunculus repens*

Semi-natural broad-leaved woodland

3.18. Small copses of plantation woodland were recorded on Site to the south of the farm buildings and occasionally on the ends of the hedgerows. Tree species recorded were as the scattered trees detailed above however, unknown coniferous species were recorded.

Tall ruderal

3.19. Tall ruderal habitat was present adjacent to the dry and wet ditches (**Plate**) and hedgerows (**Plate**). The following species were recorded; common mallow *Malva sylvestris*, white campion *Silene latifolia*, red campion *Silene dioica*, common poppy *Papaver rhoeas*, oxeeye daisy *Leucanthemum vulgare*, white deadnettle *Lamium album*, hawk-weed species *Hieracium spp.*, hogweed *Heracleum sphondylium*, charlock *Sinapis arvensis*, cleavers *Galium aparine*, wild mignonette *Reseda lutea,* common nettle *Urtica dioica* broad-leaved dock *Rumex obtusifolius*, cow parsley *Anthriscus sylvestris*, teasel *Dipsacus fullonum*, field rose *Rosa arvensis* and creeping thistle *Cirsium arvense*.

3.20. Occasional grasses were also recorded, similar to the semi-improved grassland species described above.

Protected, BAP and other Notable Fauna and Flora

3.21. As a result of the Phase 1 Habitat Survey an assessment is made below on the potential of the Site to support:

- Amphibians;
- Badgers;
- Bats;
- Birds;
- Hazel dormice *Muscardinus avellanarius*;
- European hedgehog *Erinaceus europaeus*;
- Flora – arable weeds;
- Invertebrates;
- Otter;

- Reptiles;
- Water vole; and
- Invasive species.

3.22. The fauna descriptions provided below should be read in conjunction with **Figure 4 to 10** which includes target notes (**TN**) and the photographs (Plates) presented in **Appendix C**.

Amphibians

3.23. The Site offers potential for amphibians, including great crested newts in the form of ditches, offering commuting and breeding habitat as well as the adjacent tall ruderal and ephemeral habitat offering foraging opportunities.

3.24. Historical survey work within the local area has confirmed amphibians, including great crested newts are within 1km of the Site.

Badgers

3.25. The Site offers potential commuting habitat in the form of field boundaries.

3.26. Historical survey work within the local area has confirmed badgers are within 1km of the Site.

Bats

3.27. Building and trees present on Site may offer roosting habitat. In addition, the extensive network of hedgerows, leading into the wider locale would offer **high** potential commuting habitat.

3.28. Historical survey work within the local area has confirmed bats are within 1km of the Site.

Birds

3.29. The buildings, arable fields, trees and hedgerows offer extensive nesting bird habitat.

Hazel dormice

3.30. The extensive network of hedgerows, which leads into the wider locale, offers commuting, foraging, hibernating and nesting habitat for hazel dormice.

Hedgehog

3.31. The extensive network of hedgerows offers commuting, foraging and nesting habitat for European hedgehog.

Flora – arable weeds

3.32. The Site is predominantly arable fields and therefore offers suitable habitat for notable arable weeds.

Invertebrates

3.33. The Site offers extensive habitat for common and low numbers of notable species of invertebrate in the form of hedgerows, ephemeral / short perennial and tall ruderal.

Otter

3.34. The ditches on Site offer commuting habitat for otters that lead out to the wider locale.

3.35. Historical survey work within the local area has confirmed otters are within 1km of the Site.

Reptiles

3.36. The Site offers extensive commuting, foraging, basking and hibernating potential for reptile species.

Water vole

3.37. The ditches on Site offer commuting on and off-Site. In addition, some of the ditches may offer opportunities for burrows, albeit the ditch banks may not be steep enough,

Invasive species

3.38. No invasive species were recorded during the walkover.

4. Key Constraints and Opportunities

Key Constraints

4.1. As a result of the ecological assessment, **Table 3** below details the following potential constraints which may arise from any future development. The table includes the rationale for the inclusion of each potential IEF and details the potential effect pathways and any requirement for further ecological assessments.

Table 3: Potential Important Ecological Features Anticipated to be Affected by the Future Development

Potential Important Ecological Feature	Category of Importance	Rationale	Potential Effect Pathway	Requirement for Further / Potential Ecological Assessments
Non-statutory designated sites	Local	Location of non-statutory designated sites are unknown.	Direct and indirect impacts during the demolition. construction and operational phases.	• Ecological data search
Hedgerows	HR, HoPI & LBAP	The hedgerows maybe classified as 'important' under the Hedgerow Regulations	Loss of hedgerows during the site clearance stage.	Yes: • Botanical survey of hedgerows.
Amphibians	Hab regs, WCA, SoPI & LBAP	Presence of suitable commuting, foraging and breeding habitat in the form of ditches.	Loss of habitat resulting from future development. Killing or injury of individuals during site clearance.	Yes: • Ecological data search • Habitat Suitability Index on waterbodies on-Site and up to 500m away.
Badgers	PBA	Presence of suitable commuting habitat in the form of field boundaries.	Loss of habitat resulting from future development. Killing or injury of individuals during site clearance.	Yes: • Ecological data search • Badger walkover survey, including a buffer of 30m.
Bats	Hab regs, WCA & SoPI	Presence of suitable commuting, foraging and roosting habitat in the form of hedgerows, trees and buildings.	Loss of habitat resulting from future development. Killing or injury of individuals during site clearance.	Yes: • Ecological data search • Transect surveys should be undertaken if there is extensive hedgerow removal. • Ground-based inspections on all

Potential Important Ecological Feature	Category of Importance	Rationale	Potential Effect Pathway	Requirement for Further / Potential Ecological Assessments
				trees and building to be lost.
Birds	WCA & SoPI	Presence of suitable habitat for nesting birds including notable birds using the arable fields.	Loss of nesting habitat resulting from future development. Killing or injury of individuals during site clearance.	Yes: • Ecological data search • Breeding bird survey.
Hazel dormice	Hab Regs, WCA, SoPI & LBAP	Presence of suitable habitat for commuting, foraging, hibernating and nesting hazel dormice.	Loss of nesting habitat resulting from future development. Killing or injury of individuals during site clearance.	Yes: • Ecological data search • Presence / likely absence survey.
European hedgehog	SoPI & LBAP	Presence of suitable habitat for hedgehog.	Loss of nesting habitat resulting from future development. Killing or injury of individuals during site clearance.	Yes: • Ecological data search
Invertebrates	SoPI & LBAP	Presence of suitable habitat for low numbers of notable species for commuting, foraging	Loss of foraging habitat	Yes: • Ecological data search
Otters	WCA, SoPI & LBAP	Presence of suitable habitat for commuting otters.	Loss if commuting habitat.	Yes: • Ecological data search • Otter survey.
Reptiles	WCA, SoPI & LBAP	Presence of suitable commuting, foraging, basking and hibernating habitat for reptiles	Loss of habitat resulting from future development. Killing or injury of individuals during site clearance.	Yes: • Ecological data search • Presence / likely absence survey.
Water vole	WCA, SoPI & LBAP	Presence of suitable habitat for commuting, foraging.	Loss of habitat resulting from future development. Killing or injury of individuals during site clearance.	Yes: • Ecological data search Presence / likely absence survey

Potential Important Ecological Feature	Category of Importance	Rationale	Potential Effect Pathway	Requirement for Further / Potential Ecological Assessments
Flora – Arable weeds	HoPI & LBAP	Presence of suitable habitat for notable species of arable weed.	Destruction of notable plant species.	Yes: • Ecological data search; • Potentially an arable weed survey.

*Hab Regs - Conservation of Habitats and Species Regulations 2017
HR- The Hedgerow Regulations 1997
WCA - The Wildlife and Countryside Act 1981 (as amended)
SoPI – Species of Principal Importance under The Natural Environment and Rural Communities Act 2006
LBAP – Bedfordshire and Luton Species Biodiversity Action Plan
PBA - Protection of Badgers Act 1992

4.2. Statutory designated Sites have been scoped out of further assessment as none are present with in 2km of the Site boundary.

Key Opportunities

4.3. Ecological mitigation and compensation measures would be informed by any subsequent survey work as detailed in **Table 3**.

4.4. Key, principles for the inclusion of ecological enhancement for a variety of protected and notable species and are as follows, detail of proposed green infrastructure and habitat provision is shown on the concept plan in **Appendix A**:

- Protection and enhancement of existing wildlife habitats within the future development e.g. hedgerows, field boundaries and standalone trees. This will strengthen the site's value for commuting, nesting / roosting and foraging wildlife such as bats, birds, reptiles, badgers, hazel dormice and hedgehog and maintain green links to the wider locale;
- Provision of green and brown roofs to provide further opportunities for wildlife, particularly for foraging birds and invertebrates;
- Inclusion of wildlife 'corridors' to maintain connectivity throughout the future development. This will increase the site's value for reptiles, badgers, hazel dormice and hedgehog and increase the green links to the wider locale;
- Inclusion of artificial wildlife habitats targeting local priority species such as common pipistrelle *Pipistrellus pipistrellus* bats, house sparrow *Passer domesticus*, swift *Apus apus* and notable invertebrates;
- Provision of native woodland planting, to the south of the site. This will increase the site's biodiversity value for nesting / roosting and foraging wildlife, such as bats, birds badgers, hedgehogs, amphibians and hazel dormice;
- Provision of swales and ponds as part of the SuDS scheme. This will provide opportunities for water voles and amphibians (including great crested newts *Triturus cristatus*); and
- Inclusion of native species or species of wildlife benefit within and landscape scheme. The proposed planting should look to provide a food source throughout the year, providing valuable foraging opportunities in the winter months.

4.5. The above principles will assist in meeting the local planning policies, CSRID policies CP22 – Green Infrastructure and CP25 – Biodiversity as well as national planning policy.

Work Required to Bring the Development Forward

4.6. In support of any future planning applications for future developments an Ecological Impact Assessment (EcIA) would be required upon scheme fix. The EcIA will be informed by the results of the surveys detailed in **Table 3** above.

4.7. The further works described in **Table 3** would be required to meet legislative compliance as summarised in **Appendix B**.

4.8. Protection measures will also have to be adhered to; this would include the following:

- The protection of retained trees. Any trees to be retained should be appropriately protected in accordance with BS 5837:2012 - "Trees in relation to design, demolition and construction – Recommendations";
- Should any habitats of value to nesting birds require removal to facilitate the future development this will be undertaken outside of the breeding bird season (March to August inclusive). However, if works cannot be undertaken outside the breeding bird season an ecologist will inspect any vegetation / building to be removed. An experienced ecologist will be deployed to carry out an inspection at least within 24 hours prior to the clearance. If an occupied nest is detected, an appropriate buffer zone will be created around the nest, and clearance of this area delayed until the young have fledged.
- Other protection measures may be required subject to the outcomes of the further works described in **Table 3.**

5. Summary

5.1. In summary, as a result of the PEA, numerous potential IEFs have been identified. **Table 3** provides further details including the recommended next steps.

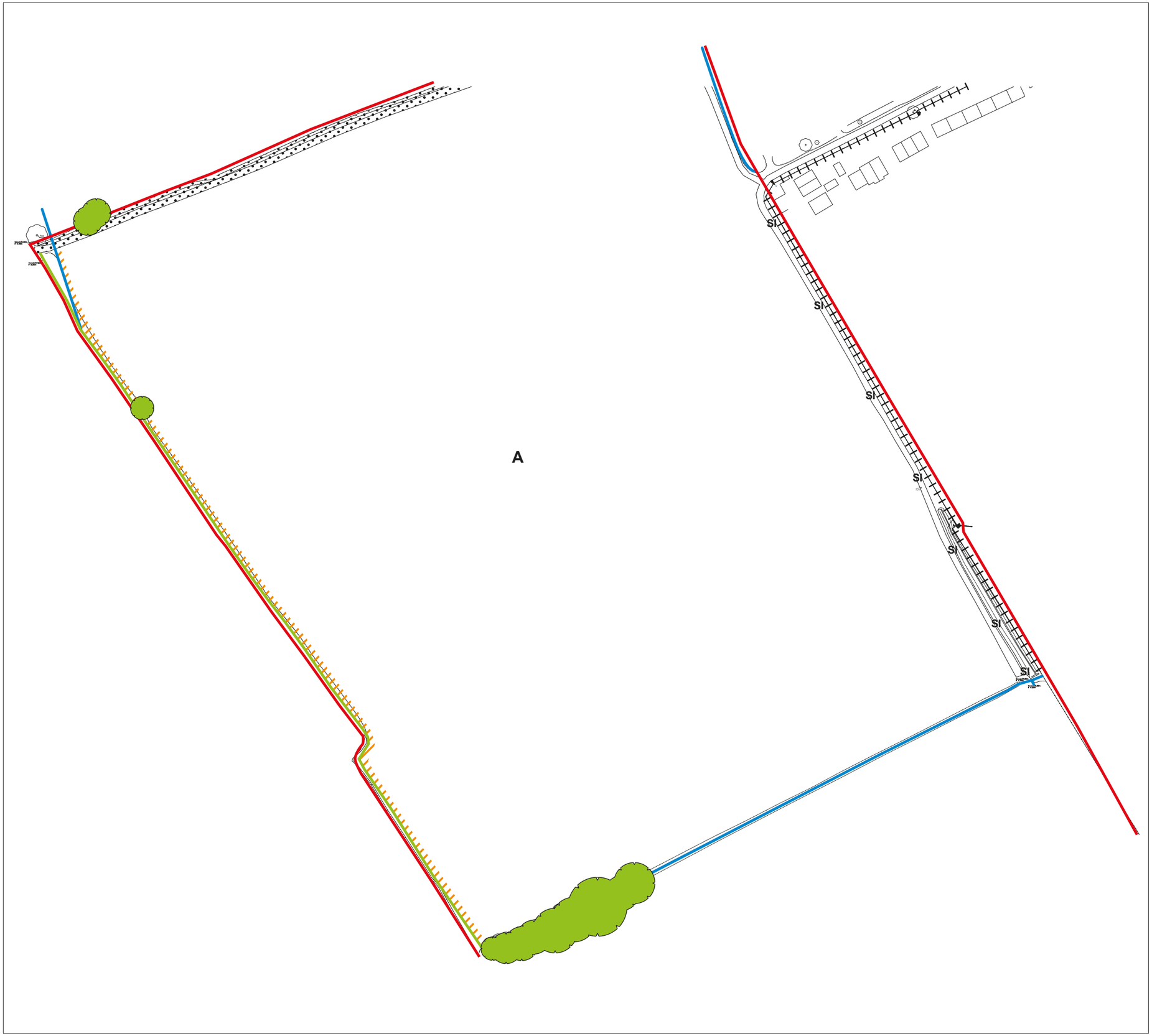
5.2. The Concept Plan (**Appendix A**) sets out the principals of the future development by providing information on the green space being provided. The green space includes areas of allotments, and accessible natural green space, including woodland, informal and amenity green spaces (ponds, swales and ditches) as well as formal parks and gardens. These green spaces total nearly 30ha and will deliver an increase in biodiversity value to the site for a variety of protected and notable species.

5.3. In addition, key opportunities are provided to inform basic principles on enhancing the Site's ecological value. This would provide an increase in opportunities for a range of protected / notable species which would result in a gain to biodiversity.

5.4. It should be noted that this PEA is relevant to the legislation detailed in Section 2 and **Appendix B** at the time of writing. If there are any changes to legislation prior to the future development being completed, the advice within this PEA may require amending / updating in line with any legislative updates.

5.5. If there is a significant period (most LPAs consider this period to be to 18 months) between this PEA and the future development commencing, the ecological value of the Site may change, and the Site should therefore be subject to an update survey.

Figures



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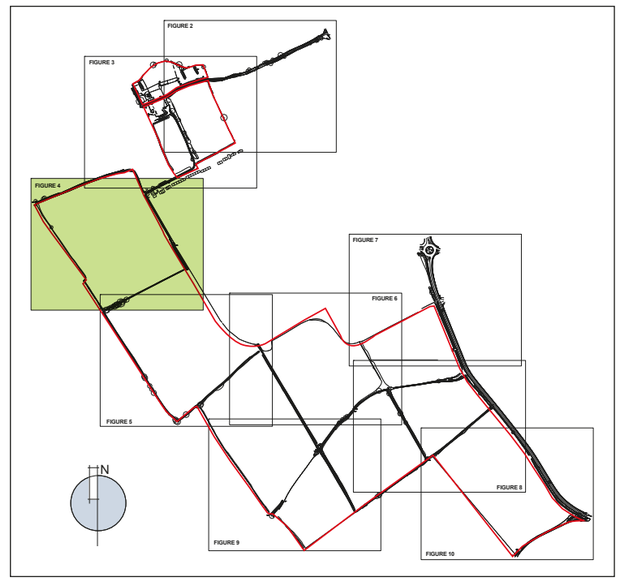
- Site Boundary
- Hedgerows
- Building
- Hardstanding
- Tall Ruderal
- Semi-natural Broadleaved Woodland
- SI Semi-improved Grassland
- Amenity Grassland
- Ephemeral
- Bare Ground
- Scattered Trees
- Ditches
- A Arable
- Fence



Project Details	WIE15761-102: Land at Shortstown, Bedfordshire
Figure Title	Figure 4: Habitat Features Plan
Figure Ref	WIE15761-102_GR_EC_4A
Date	June 2019
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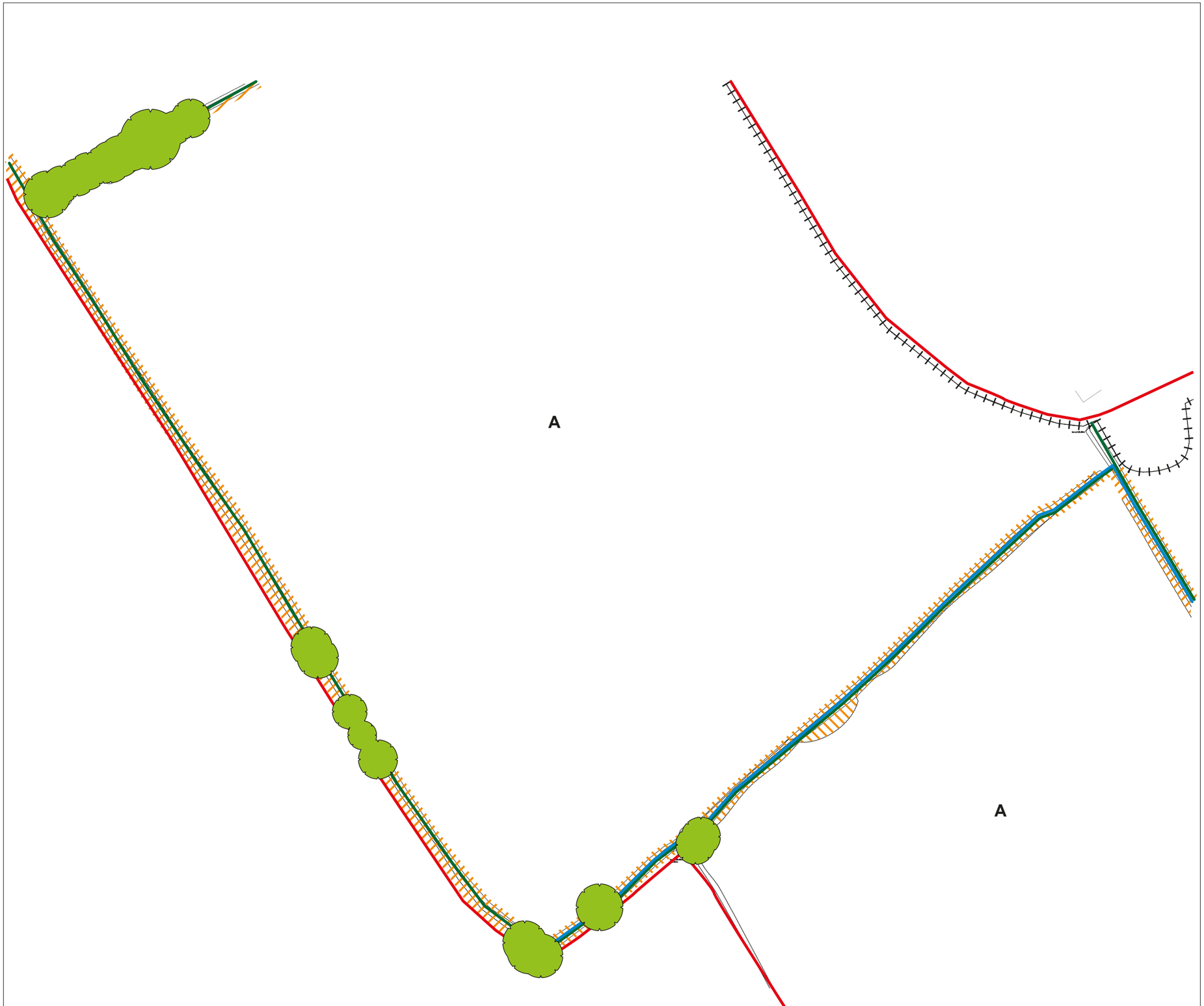
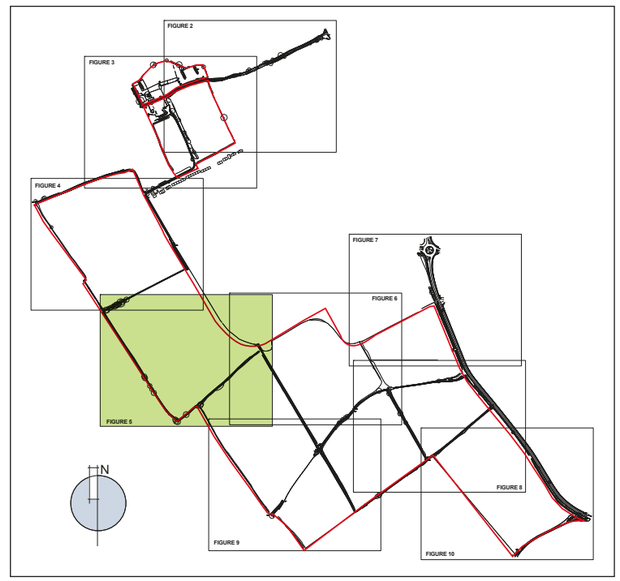


- Site Boundary
- Hedgerows
- Building
- Hardstanding
- Tall Ruderal
- Semi-natural Broadleaved Woodland
- SI Semi-improved Grassland
- Amenity Grassland
- Ephemeral
- Bare Ground
- Scattered Trees
- Ditches
- A Arable
- Fence



Project Details	WIE15761-102: Land at Shortstown, Bedfordshire
Figure Title	Figure 5: Habitat Features Plan
Figure Ref	WIE15761-102_GR_EC_5A
Date	June 2019
File Location	\\s-lncs\wiel\projects\wie15761\102\graphics\ec\issued figures

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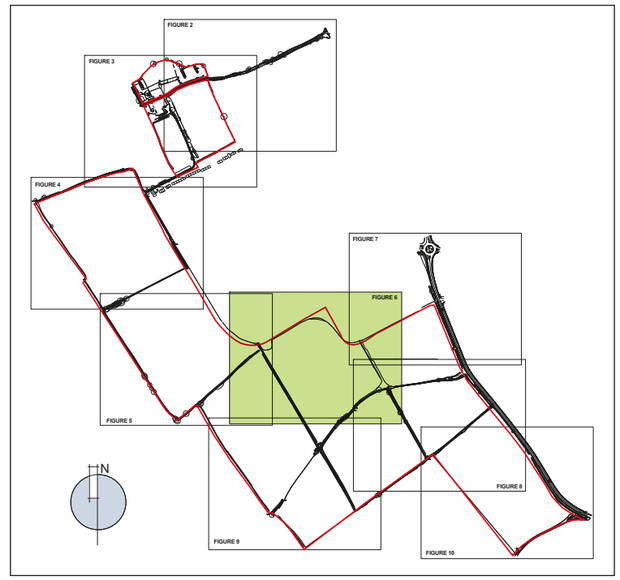

Project Details	WIE15761-102: Land at Shortstown, Bedfordshire
Figure Title	Figure 6: Habitat Features Plan
Figure Ref	WIE15761-102_GR_EC_6A
Date	June 2019
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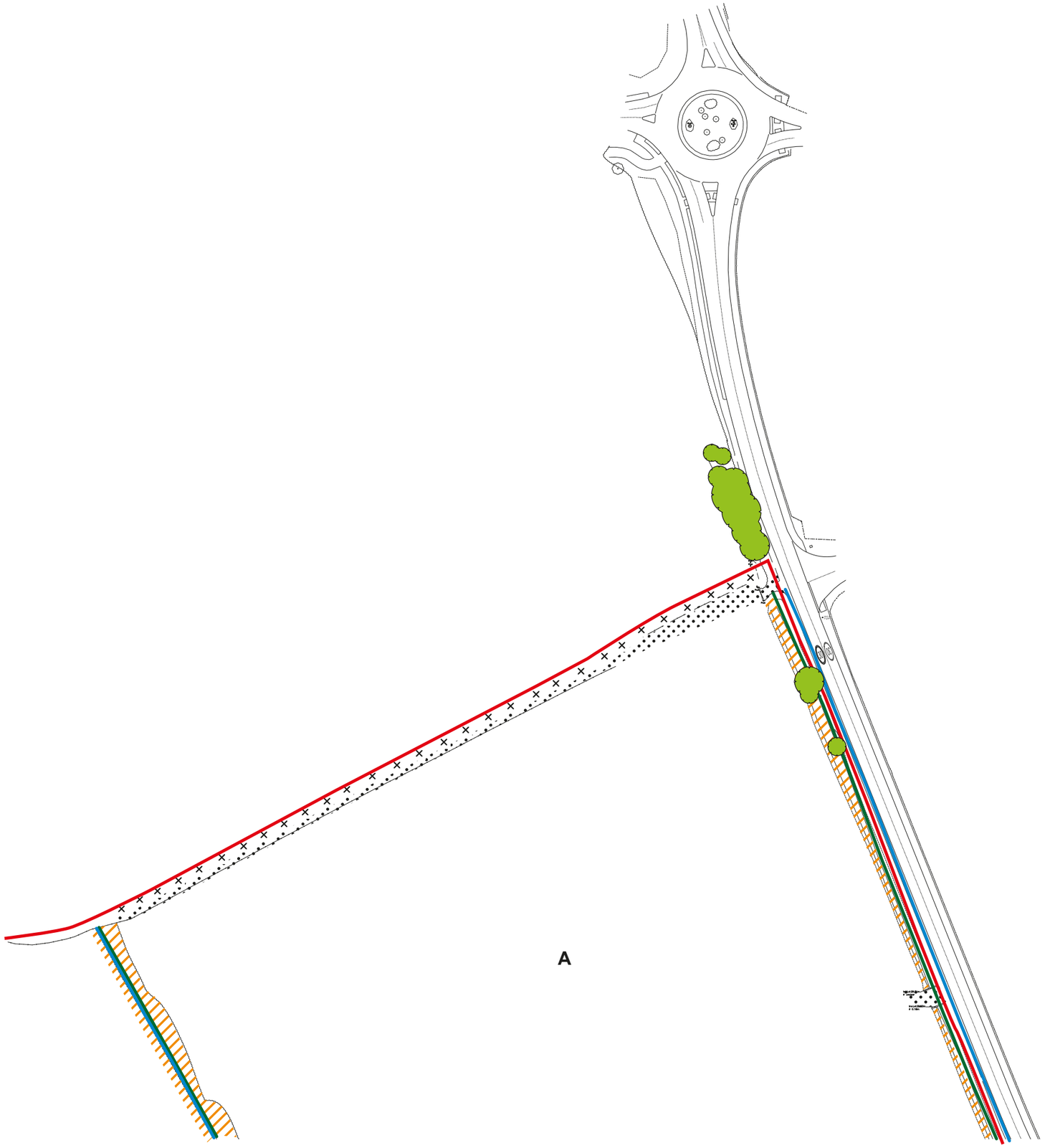

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Project Details	WIE15761-102: Land at Shortstown, Bedfordshire
Figure Title	Figure 7: Habitat Features Plan
Figure Ref	WIE15761-102_GR_EC_7A
Date	June 2019
File Location	\\s-lncs\wiel\projects\wie15761\102\graphics\ec\issued figures

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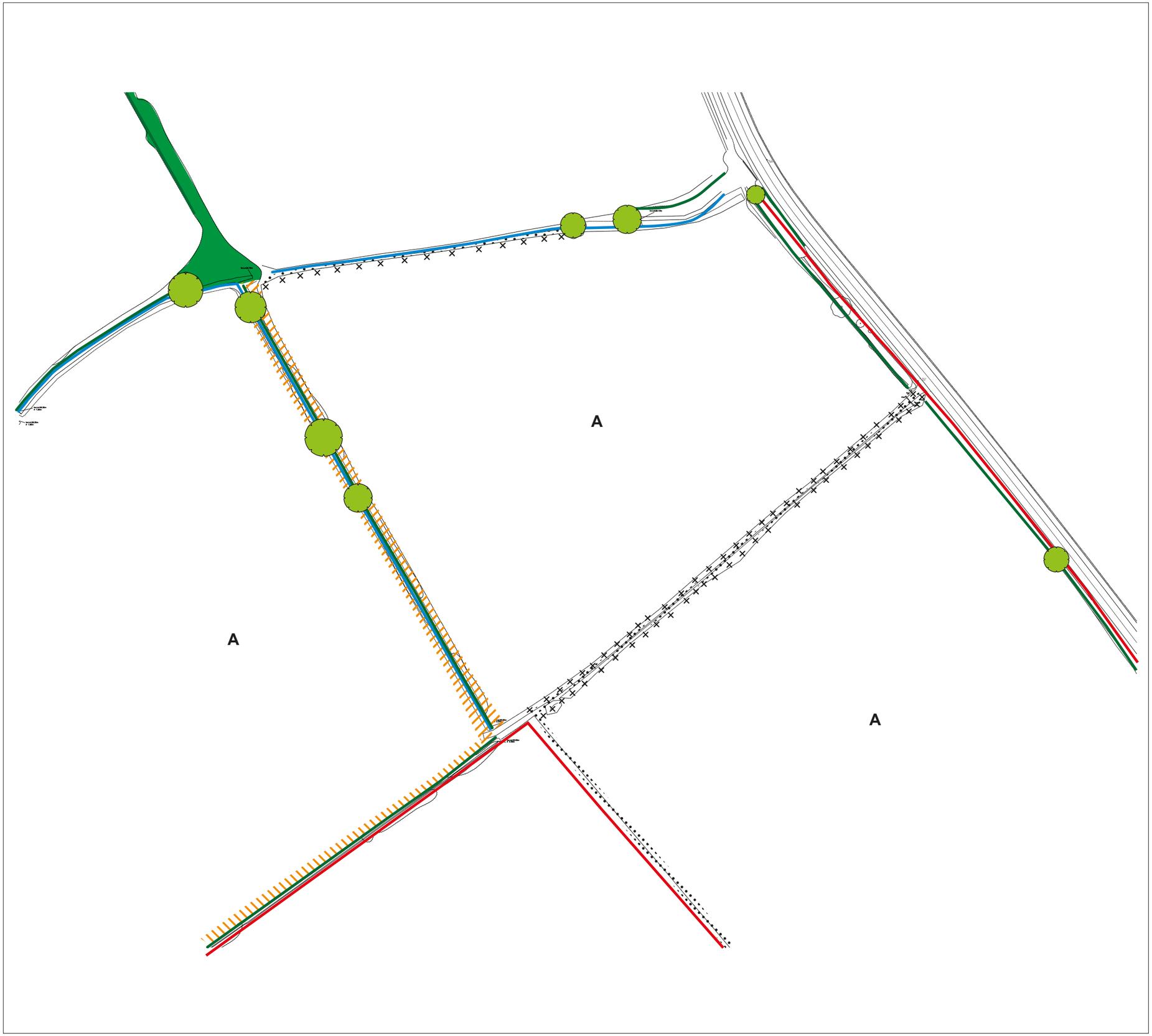

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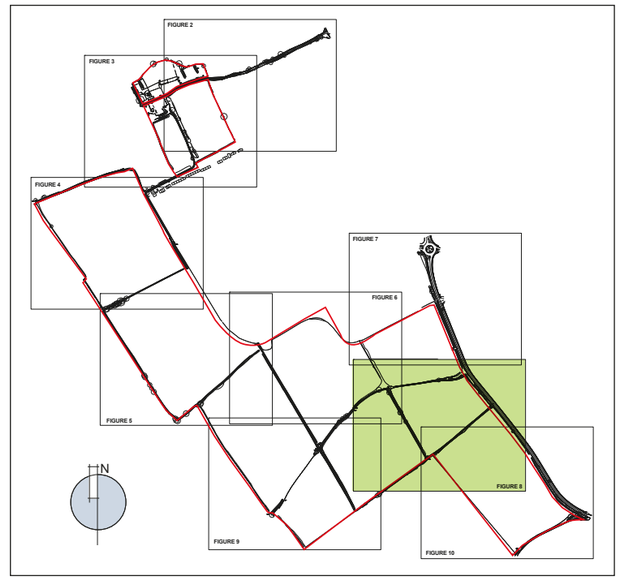

Project Details	WIE15761-102: Land at Shortstown, Bedfordshire
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Figure Ref	WIE15761-102_GR_EC_8A
Date	June 2019
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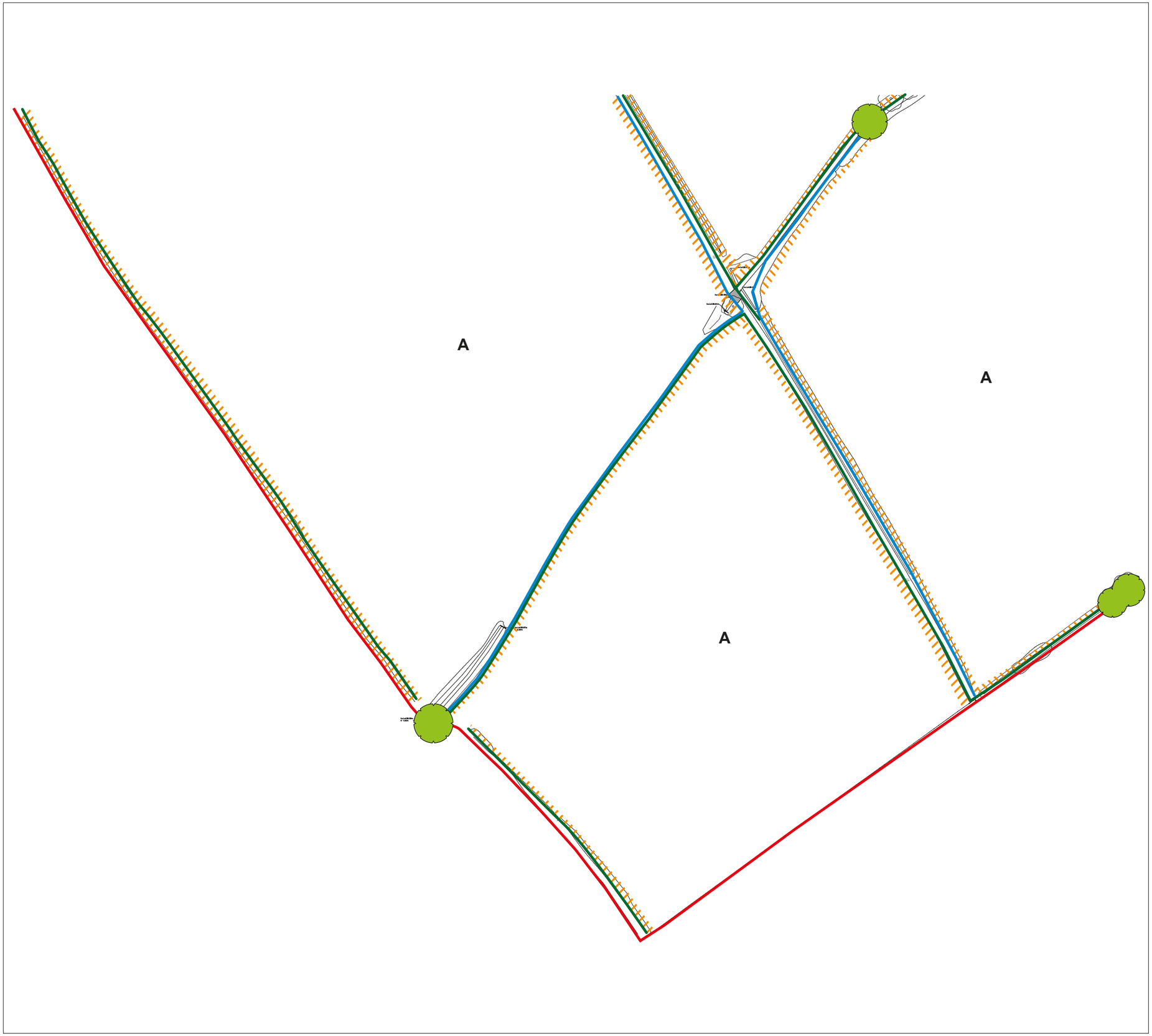

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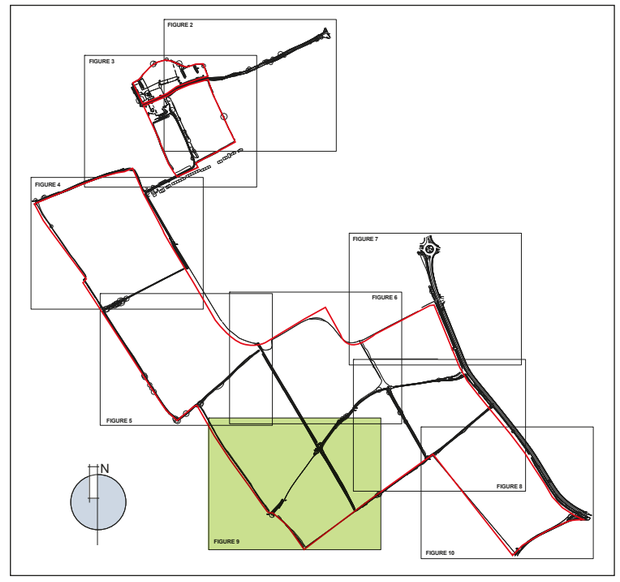

Project Details	WIE15761-102: Land at Shortstown, Bedfordshire
Figure Title	Figure 9: Habitat Features Plan
Figure Ref	WIE15761-102_GR_EC_9A
Date	June 2019
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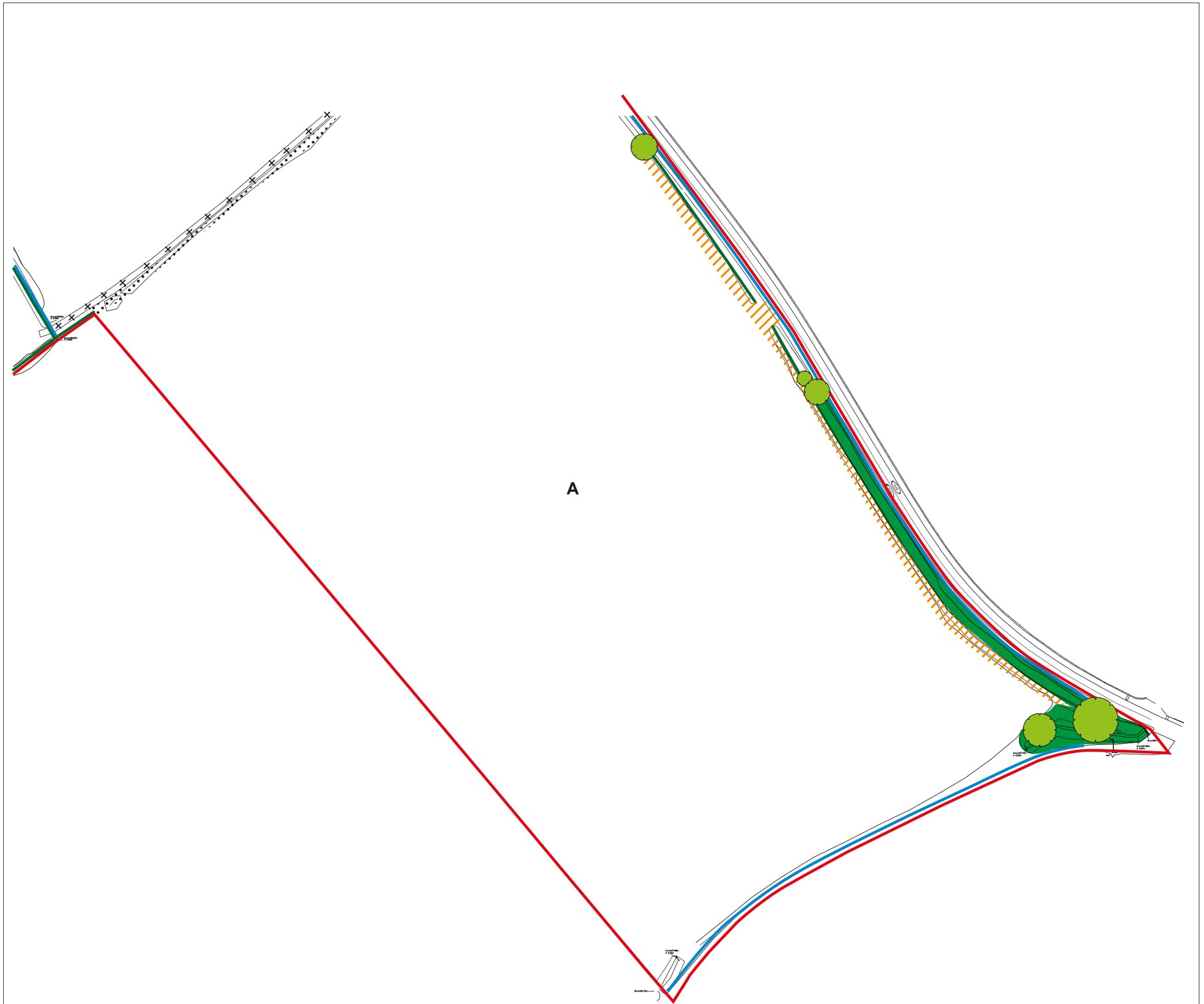

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Figure Title	Figure 10: Habitat Features Plan
Figure Ref	WIE15761-102_GR_EC_10A
Date	June 2019
File Location	\\s-lncs\wiel\projects\wie15761\102\graphics\ec\issued figures

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APPENDICES

A. College Farm, Shortstown - Concept Plan (ref: 29533-9301 rev. L)

The scaling of this drawing cannot be assured

Revision		Date	Drn	Ckd
L	Red Line Amended	02.06.2020	DR	BW

Area of Improved Neighbourhood Play inc. MUGA

Site Boundary	67.75 Ha
Residential Development	30.08 Ha

Public Open Space to meet LPA Policy AD28
(Of the total 34.55Ha POS Provision, 20.33Ha of this needs to meet the Forest of Marston Vale Policy)

Allotments / Outdoor Sport Space	05.44 Ha
Allotments	01.14 Ha
Outdoor Sport Space	04.30 Ha
Informal and Amenity Green Space Including Basins, Swales and 2.59 Ha to meet the Forest of Marston Vale Policy	11.77 Ha
Accessible Natural Green Space	15.07 Ha
Parks and Gardens	01.53 Ha
Equipped / Natural Play Areas	00.74 Ha
School	02.30 Ha
Local Centre	00.82 Ha
Flood Area	
Existing Watercourse / Land Drain	
9m Buffer from ordinary Watercourses	
Proposed Detention Basin (Dry) with 4m Maintenance Buffer	
Proposed Foul Pumping Station	
Potential Vehicular Access	
Potential Pedestrian/Cycle Access	

N

Project
College Farm, Shortstown

Drawing Title
Concept Plan

Date	Scale	Drawn by	Check by
12.06.19	1:5000 @A2	KU	BW

Project No	Drawing No	Revision
29533	9301	L

DRAFT

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B. Summary of Relevant Legislation

A1. Specific habitats and species receive legal protection in England under various pieces of legislation, including:

- The Conservation of Habitats and Species Regulations 2017[19];
- The Wildlife and Countryside Act (WCA) 1981 (as amended)[20];
- The Natural Environment and Rural Communities Act 2006[21];
- The Hedgerow Regulations 1997[22]; and
- The Protection of Badgers Act 1992[23];

[19] HMSO (2017) The Conservation of Habitats and Species Regulations 2017
[20] HMSO (1981) 'Wildlife and Countryside Act 1981 (as amended)'
[21] ODPM (2006) 'Natural Environment and Rural Communities Act (2006)'
[22] ODPM (1997) 'The Hedgerow Regulations'
[23] ODPM (1992) 'The Protection of Badgers Act'

C. Photographs

Plate 1 : Residential building, amenity grassland and scattered trees

Plate 2 : Arable field: Grain crop and bare ground

Plate 3 : Arable field, edible pea crop, tall ruderal and scattered trees within hedgerow

Plate 4 : Farm buildings and semi-imporved grassland

Plate 5: Example of dry ditch and hardstanding on Site

Plate 6 : Example of wet ditch, tall ruderal and hardstanding on Site

Plate 7 : Colonising ephemeral / short perennial

Plate 8 : Hedgerow on Site

Plate 9: Himalayan balsam recorded in a ditch (TN1)

Plate 10: Grass snake (TN2)

UK and Ireland Office Locations