

Hopkins Ecology

Project: Phases 3 and 4 of Land North and South of Dereham Road, Easton

Work Item: Ecological and Green Infrastructure Management Plan for the Discharge of Conditions 31 and 32 (ref. 2014/2611)

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1. INTRODUCTION

BACKGROUND

- 1.1 The scheme was approved in outline in November 2016¹, and is for “the erection of 890 homes, the creation of a village heart, an extended primary school, a new village hall, a retail store and areas of public open space, the relocation and increased capacity of the allotments and associated infrastructure including public open space and highway works”.
- 1.2 This Reserved Matters application is for a total of 350 dwellings.
- 1.3 The application was informed by a suite of survey work undertaken by Amec in 2012-13. As part of the preparation of the current management plans a new suite of survey work has been requested to ensure that the baseline description and management plans are up-to-date and appropriate.
- 1.4 The outline consent has two conditions relating to ecology, in essence requiring:
 - Condition 31 - The preparation and implementation of an Ecological Management Plan for matters relating to on-Site ecology.
 - Condition 32 - A Green Infrastructure Management Plan relating to the context of the scheme at a landscape scale.
- 1.5 These phases are somewhat different to Phases 1 and 2 in that a specific area is included for ecological mitigation, located to the south-west of the main development area. This will include attenuation features as part of the landscaping. Measures with respect to commuting and the possibility of roosting bats are also identified.

THE CONDITIONS

- 1.6 The two Conditions are presented below.

Condition 31 states

31. An ecological management plan (EMP) for the phase to which it relates shall be submitted to, and approved in writing by the LPA prior to commencement of development. The content of the EMP shall include the following.
 - a) Description and evaluation of features to be managed,
 - b) Ecological constraints on site that might influence management
 - c) Aims and objectives of management
 - d) Appropriate management options for achieving aims and objectives including mitigation detailed in the ES submitted with the application namely that for
 - o great crested newts,
 - o protection and enhancement of bat feeding and commuting corridors,
 - o protection and enhancement of hedgerows
 - o reptile translocation, if required,
 - o nest boxes for birds,
 - e) Prescriptions for management actions
 - f) Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period)
 - g) Details of the body or organisation responsible for implementation of the plan
 - h) On-going monitoring and remedial measures

¹ 2014/2611

The EMP shall also include details of the legal and funding mechanisms by which the long-term implementation of the plan will be secured by the developer. The plan shall also set out (where the results of monitoring show that conservation aims and objectives of the EMP are not being met) how remedial action will be identified, agreed and implemented so the development still delivers the fully function biodiversity objectives of the originally approved scheme. "

Reason for the condition:

In order to safeguard the ecological interests of the site in accordance with Policy ENV14 of the South Norfolk Local Plan. These details are required prior to commencement in order to avoid any irreparable damage being caused to ecology, including protected species.

Condition 32 states:

32. No development shall take place within any phase until a Green Infrastructure Management Plan (GIMP) has been submitted to and approved by the local planning authority in writing for the phase to which the works relate. The GIMP shall include:
- a. details of measures to mitigate the adverse impacts of the development and its construction on the ecology of the area (including severance effect of roads and other development and the timing of vegetation clearance);
 - b. measures for the protection of habitat;
 - c. connected green infrastructure with measures to enhance the bio-diversity of the area (such as the provision of ponds, bird and bat boxes) and the subsequent implementation, timing, management and maintenance of such measures agreed;
 - d. provision for the implementation, management and maintenance of the GIMP measures over a period of no less than 15 years.
- The development shall only proceed in accordance with the agreed GIMP or with any amendment to it that has been agreed in writing with the Local Planning Authority.

Reasons for the condition

In the interests of preserving, enhancing and maintaining biodiversity and natural heritage assets in accordance with policy 1 of the Joint Core Strategy and part 11 of the National Planning Policy Framework.

REPORT LAYOUT

- 1.7 This current document is intended to discharge Condition 32 in full, and Condition 31 as it relates to Phases 3 and 4 of the scheme. The Site-wide GIMP was presented previously and is appended here (Appendix 2).
- 1.8 The measures included here will ensure legal compliance with appropriate legislation, including:
 - The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) (as amended) (the Habitats Regulations).
 - Wildlife and Countryside Act 1981 (as amended).
 - Natural Environment and Rural Communities (NERC) Act 2006.

2. BASELINE

SURVEY INFORMATION

- 2.1 The baseline description of the Site was originally provided by Amec based on surveys in 2012-13. These have been repeated in 2019 by Hopkins Ecology Ltd and have been presented separately².

HABITATS

- 2.2 The Site is largely unchanged from that described previously, although a number of fields that were arable are now improved sward (Figure 1). The key changes are that an off-Site pond supporting a moderate population of great crested newts in 2014 was without newts in 2019 (this is the pond located within the showground site). Also, the 2019 survey work includes a detailed botanical description and this identified an assemblage of species associated with arable margins and open, disturbed grassland. The main features and species are summarised in Table 1.

Figure 1. Phases 3 and 4: ecology plan.

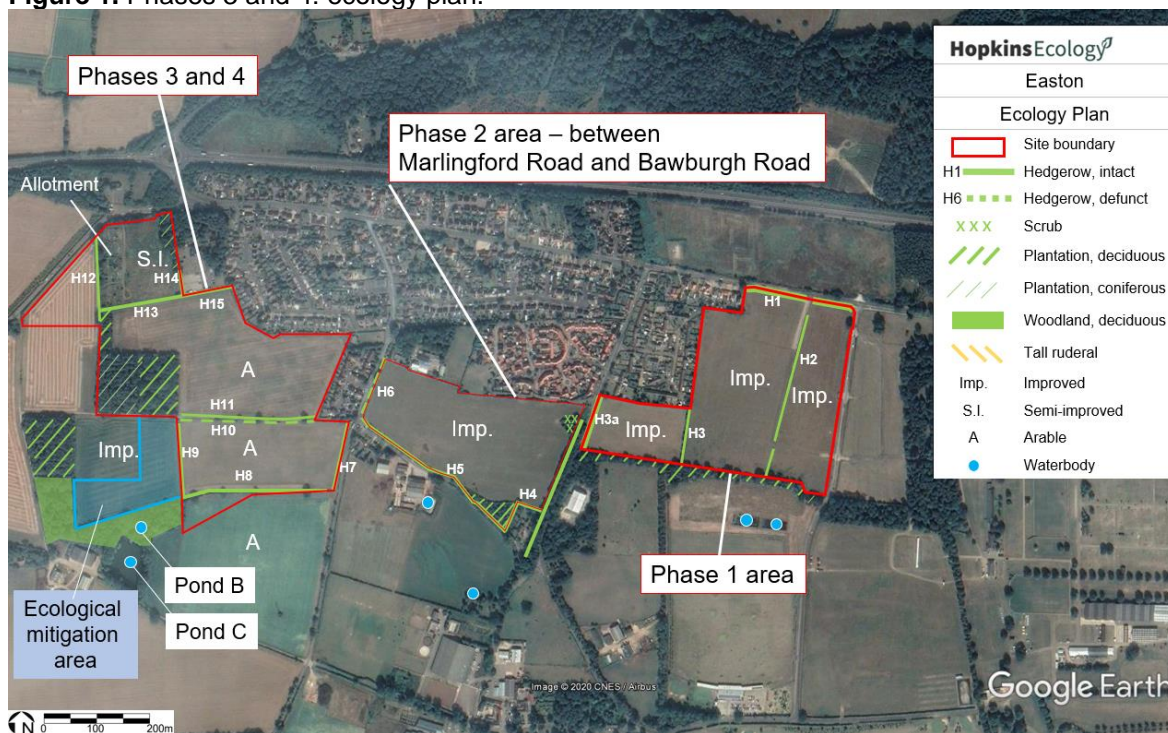


Table 1. Summary of the site and phases 3 and 4 baseline, 2021.

Feature	Site-wide	Phase 3 and 4 area
Habitats	Mainly arable and improved and semi-improved swards with smaller blocks of plantation and scrub.	Arable, semi-improved sward, improved sward, plantation (deciduous and coniferous) and hedgerows.
Hedgerows	14 lengths qualify as priority Hedgerow Habitat of Principal Importance. One length qualifies as an Important Hedgerow.	Six lengths, of which H12 is an Important Hedgerow.
Woodland and scrub	Isolated blocks, with mature woodland to the west.	Two blocks of plantation woodland.

² Hopkins Ecology Ltd (2020) *Land North and South of Dereham Road, Easton, Norfolk. Baseline Ecology Description 2019*. Hopkins Ecology Ltd, unpublished.

Phases 3 and 4 of Easton:

Ecological and Green Infrastructure management Plans (Conditions 31 and 32)

Feature	Site-wide	Phase 3 and 4 area
Arable herbs	Two Near Threatened and one scarce species: common cudweed, corn spurrey and hoary mullein. Likely to be similar to other arable sites around Norwich.	None of note.
Great crested newts	One occupied pond with a peak count of 3, located off-Site to the south-west.	Pond B had a peak count of 3 individuals in 2019 and a peak count of four individuals in 2021. Pond A was negative using E-DNA testing in 2019 and 2021. See Appendix 3 for additional detail
Bats: roosting and commuting	No roosts identified on-Site. Soprano pipistrelle roost of moderate size likely to be present within Diocese buildings.	Soprano pipistrelle roost and brown long-eared in the off-Site diocese buildings, Common pipistrelle possibly roosting also. Nine trees with low bat roost potential, mainly on the basis of moderately dense ivy covering. See Appendix 3 for locations
Bats: foraging	Six species: common pipistrelle, soprano pipistrelle, Myotis species, noctule, brown long-eared and barbastelle.	Only common pipistrelle and soprano pipistrelle and overflying noctules recorded regularly, with sporadic records mainly along the west boundary (but also along other hedgerows) of barbastelle, <i>Myotis</i> species and brown long-eared.
Nesting birds	Five species of conservation concern: skylarks, song thrush, dunnock, stock dove and linnet. Density of skylarks lower than previously reported (when there were 7 pairs) and below the reported average for winter cereals.	Species of conservation concern probably or possibly breeding: dunnock (2-3 pairs), song thrush (1-2 pairs), Linnet (1-2 pairs), skylark (1 pair) and stock dove (1-2 pairs).
Reptiles	Low population of slow worms, between A47 and Dereham Road only. Only recorded within westernmost parcel.	None present.
Hedgehogs	Likely to be present.	Potentially present in low numbers.
Invertebrates	Small assemblage of widespread but declining priority moths.	Small assemblage of widespread but declining priority moths within hedgerows and plantations.

2.3 Direct great crested newt surveys were undertaken of one pond in 2019 and 2021 (B), with a peak count of three individuals in 2019 and four individuals in 2021 (Table 2). The population is low. The only other pond in the vicinity is Pond C, and this is scoped out due to the presence of fish.

Table 2. Great crested newts survey results from 2019 and 2021.

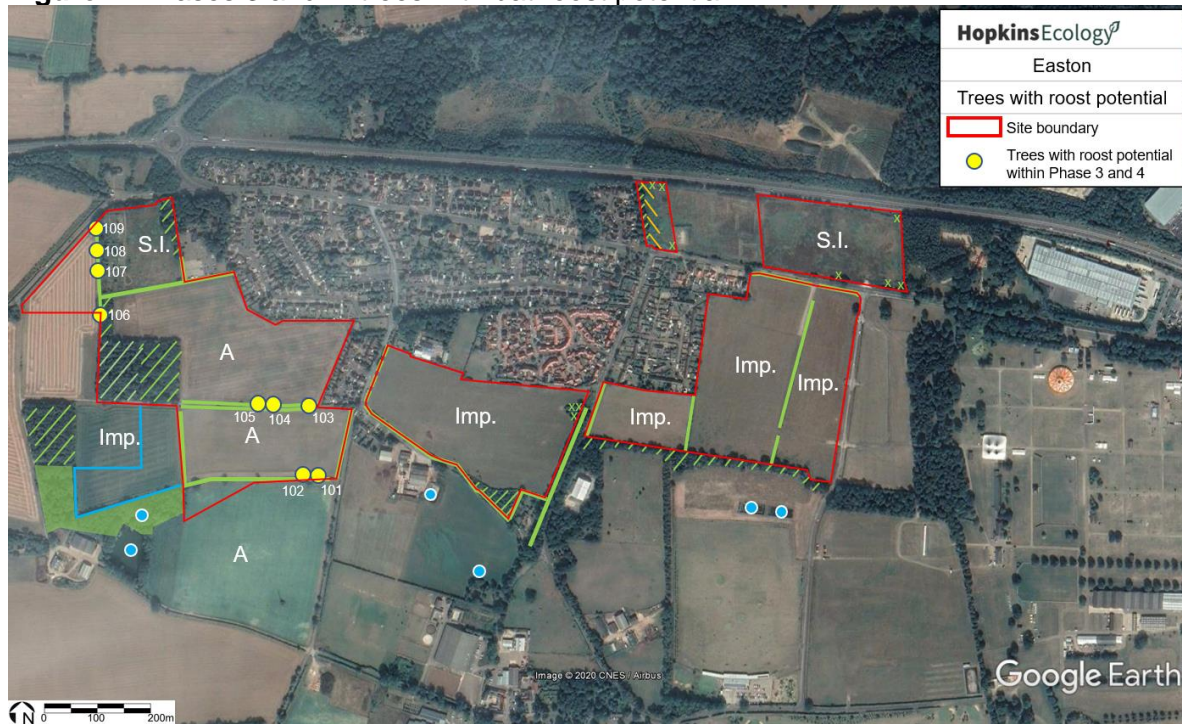
Pond	Method	2019	2021
B	Manual surveys.	Peak count of 3.	Peak count of 3.
C	Not surveyed – fishing lake.	Not surveyed – fishing lake.	Scoped out

2.4 For the nine trees within Phases 3 and 4 with potential roost features (Figure 2), single emergence surveys were undertaken in 2019 (Table 3). No roosts were identified. The identified potential roost features on these trees is moderately dense ivy and narrow aerial dead wood.

Table 3. Details for tree emergence surveys.

Date	Trees	Weather
07 June 2019	103, 104 and 105	17°C, warm, calm and dry
11 June 2019	101 and 102	17°C, warm, calm and dry
14 June 2019	106, 107, 108 and 109	18°C, warm, calm and dry

Figure 2. Phases 3 and 4: trees with bat roost potential.



3. GIMP, PHASE 2: CONDITION 32

LANDSCAPING

Overview of Phases 3 and 4

3.1 The landscaping for Phases 3 and 4 are shown below (Figures a, b and c; see Appendix 1 for additional detail). A contrast to previous phases is that there is an area allocated as ecological mitigation land located to the south-west of the main development area. Also, the plantation woodland is included, and this has an existing informal path that connects to off-Site woodland with informal paths.

Figure a-c. Landscape plan for Phase 3 and 4, with annotations to show main vegetation types (although not all locations are marked, see landscaping plans for additional detail).





Mitigation Area

- 3.2 The mitigation area will be of benefit to a range of species. Within the ES this was identified as a mitigation area for great crested newts, and while the licensing for great crested newts is proposed to be via District Level licensing this area will nevertheless provide enhanced habitat for great crested news, as well as other locally relevant species.
- 3.3 The landscaping is shown above in Figure 3c, and comprises a range of shrub planting and wildflower swards. Also included will be hibernacula for great crested newts. Attenuation features are intended to be included and these will be designed with consideration of their ecological value with appropriate physical design and landscaping.
- 3.4 The mitigation will be fenced off from public access.

SPECIFIC ITEMS FOR CONDITION 32

Item A: detailed measures to mitigate the adverse impacts of the development and its construction on the ecology of the area (including severance effect of roads and other development and the timing if vegetation clearance).

- 3.5 The scheme layout and landscaping include a crossing point for bats along the east west hedgerow (H13) with an island between the two carriageways with hedge planting. The island will act to reduce traffic speeds while the hedgerow will be planted at ~1.5m with the aim to grow no more than 2-2.5m. This is intended to force the bats to fly relatively high and above the traffic, while the feature is not so high that the bats would prefer to fly round it.
- 3.6 Other locations on the road are less frequently used by commuting and would be expected to have lower traffic speeds by virtue of the street deign or proximity to junctions. The road will be unlit.
- 3.7 The timing of vegetation clearance will be outside of the nesting bird season (March to August inclusive) or otherwise under a watching brief.

Item B: measures for the protection of habitat.

- 3.8 Throughout, hedgerow loss is minimised as far as possible but there is removal of hedgerow lengths and also tree removal. Nine trees within the phase have low bat roost potential and

emergence surveys in 2019 did not record roosts. Direct inspections for roosts will be undertaken prior to any arboricultural works.

3.9 The extent of hedgerow and tree loss within this Phase comprises:

- Breaches within hedgerows 11 and 13 totalling ~130m. New hedgerow planting exceeds this length.
- Remove defunct H10.
- Tree removals in H12 and 13. These trees have low roost potential and emergence surveys in 2019 were negative.

Item C: connected green infrastructure with measures to enhance the bio-diversity of the area (such as the provision of ponds, bird and bat boxes) and the subsequent implementation, timing and management and maintenance of such measures agreed.

3.10 The overall landscape framework provides a strong network of connecting green infrastructure across the Site. This phase includes large blocks of habitat and open space east-west with only a single road crossing this.

Bird and Bat Boxes

3.11 Bird and bat boxes will be included within each phase, with 25% of buildings to have one or other. These will be arranged as broad 'clusters' of boxes as indicated on Figure 4. The precise locations will be determined at a later stage but with individual houses specified on construction plans in advance of works.

Figure a and b. Indicative locations for bird and bat boxes.





3.12 25% of buildings will have bird or bat boxes, with the recommended types being:

- Bat boxes. General purpose boxes of wood, woodcrete or integral styles. To be erected as high as possible in areas away from lighting. Within individual groupings of boxes it is preferable to have boxes facing different direction to provide a range of local conditions.
- Bird boxes. A mix of swift and house sparrow boxes are recommended. Swift boxes should be located under eaves and house sparrow boxes 2-3m above ground. Both types should be located away from full midday sun to prevent overheating. Various wood, woodcrete or integral box styles are suitable.

3.13 The maintenance of the landscaping outside of private areas will be maintained and transferred to a management company, highways authority or local authority as appropriate. Maintenance will accord with BS 8545 - clause 11.1-11.5 - Post-planting management and maintenance.

3.14 The cutting regime for areas of meadow planting is proposed as described under the EMP.

Hedgehogs

3.15 It is proposed that at least 50% of new houses will have access measures to allow hedgehogs into rear gardens. The options are for holes within fence gravel boards and also raised garden gates to leave a gap of at least 15cm beneath.

3.16 The outline locations for these are shown below in Figure 5, located in areas where success is likely to be greatest due to the proximity to off-Site areas. The locations comprise five clusters of houses hedgehogs will be able to enter from off-Site and then move between gardens. In some locations, hedgehogs would need to cross through several fences to reach gardens located centrally in blocks and in practice such reliance on multiple holes is unlikely to be effective in providing access.

Figure 5a and b. Outline locations for hedgehog access features to gardens.



Item D: provision for the implementation, management and maintenance of the GIMP measures over a period of not less than 15 years.

- 3.17 As described above the long-term maintenance of the landscaping outside of private areas will be maintained and transferred to a management company, highways authority or local authority as appropriate. Maintenance will accord with BS 8545 - clause 11.1-11.5 - Post-planting management and maintenance. The more detailed prescriptions are provided below under the EMP 5-year management plan.

4. EMP, PHASES 3 AND 4: CONDITION 31

SPECIES MITIGATION (ITEM D)

- 4.1 This item is listed out of sequence to provide greater prominence within this document. The overall establishment and management of the plantings is described below. The wider benefits of the proposed soft landscaping have been reviewed within the GIMP and the specific mitigation required has also been described (methods of vegetation clearance with respect to nesting birds).
- 4.2 Specific additional actions proposed within the plan are bird and bat boxes, and measures to allow hedgehogs to access gardens. Also, required within these phases are measures for commuting bats, roosting bats and great crested newts.

Commuting Bats

- 4.3 There is an off-Site roost in the diocese buildings to the north-east of the Phase 4 area. The scheme layout and landscaping includes a crossing point for bats along the east west hedgerow (H13) with an island between the two carriageways with hedge planting. The island will act to reduce traffic speeds while the hedgerow will be planted at ~1.5m with the aim to grow no more than 2-2.5m. This is intended to force the bats to fly relatively high and above the traffic, while the feature is not so high that they would prefer to fly round it.
- 4.4 Other locations on the road are less frequently used by commuting and would be expected to have lower traffic speeds by virtue of the street design or proximity to junctions. The road will be unlit.

Roosting Bats

- 4.5 Nine trees have low bat roost potential on the basis of moderately dense ivy and aerial dead wood (of narrow diameter and without visible cavities). Emergence surveys of these were undertaken in 2019 and were negative.
- 4.6 Prior to arboricultural works direct inspections will be undertaken under supervision by a licensed ecologist. If evidence of bats is found then appropriate mitigation and if necessary licensing will be implemented.

Great Crested Newts

- 4.7 The intention is for the scheme to apply for District Level licensing with respect to Pond B. The scheme will not impact breeding ponds and the net loss of terrestrial habitat will be very low, and largely arable verges. However, works to construct the attenuation features in the mitigation area will require licensing.
- 4.8 The wider landscaping including the attenuation features within the mitigation area and indeed within the development areas will represent a net gain in terrestrial habitat for great crested newts, irrespective of licensing measures and mitigation.

SPECIES BENEFITS

Item A: description of the ecological features to be managed

- 4.9 Across the Site the species for which mitigation and enhancement measures are proposed cover the suite of species and features described for the baseline, with the exception of skylarks which cannot be managed for on-Site. In terms of the species and other features the relevant measures are outlined in Table 4.

Table 4. Summary of features / species within Phase 3 and 4 areas and relevant measures.

Feature	Phase 3 and 4 areas	Summary of relevant measures
To be covered by EMP		
Habitats	Improved sward.	New areas of meadow planting types.
Hedgerows	Four lengths, none of which are Important Hedgerows	Protection measures for retained lengths. New hedgerow planting and general structural planting as mitigation for losses.
Bats: roosting	Nine trees with low bat roost potential, due to moderate ivy covering or aerial dead wood.	Prior to arboricultural works direct inspections will be undertaken under supervision by a licensed ecologist. If evidence of bats is found then appropriate mitigation and if necessary licensing will be implemented.
Bats: commuting	Commuting along hedgerow H13, with lower levels of commuting elsewhere	Where H13 is crossed by the road, then will have a specific crossing point with an island to reduce speed and landscaping to encourage the bats to fly higher.
Bats: foraging	Only common pipistrelle and soprano pipistrelle and overflying noctules recorded.	General landscaping benefits and the larger area within the ecological mitigation land.
Great crested newts	Off-Site 'small' population to the south-west. No on-Site breeding ponds.	Licensing is proposed via the District Level scheme. The ecological mitigation land will nevertheless provide a high quality terrestrial habitat.
Nesting birds	No species of conservation concern recorded breeding.	Bird boxes. General landscaping to provide new scrub and scrub-grassland mosaic habitat.
Hedgehogs	Potentially present in low numbers.	General landscaping benefits and access provided within the scheme.
Invertebrates	Small assemblage of widespread but declining priority moths within hedgerows.	General landscaping benefits.
Not covered by EMP for Phases 3 and 4		
Arable herbs	None of note.	-
Reptiles	None present.	-

Item B: ecological constraints on that site that might influence management

- 4.10 The existing soil on-Site is free draining and without the additional of fertilisers is likely to be nutrient poor and conducive to creating vegetation with semi-natural characteristics. There are local examples of sites that have reverted from arable and developed high quality grassland and scrub habitat with a low intervention approach.

Item C: aims and objectives of management

- 4.11 The aim of management is to deliver enhancements through the successful establishment of the vegetation types as described with additional measures are the provision of bird and bat boxes and access to gardens for hedgehogs within the development area.
- 4.12 The mitigation area is intended to provide ecological habitat for a range of species. The licensing for great crested newts is proposed to be via District level licensing but the mitigation will nevertheless be of value to great crested newts. Other species likely to benefit include a range of birds, bats via enhanced foraging habitat, hedgehogs, and invertebrates including widespread but declining moths.

Item D: appropriate management option for achieving aims and objectives including mitigation detailed in the ES, for: great crested newts, bat feeding and commuting

corridors, protection and enhancement of hedgerows, reptile translocation, nest boxes

4.13 Covered above in paragraphs 4.1-4.8.

Item E. Preparation of a 5-year work schedule

4.14 The overall works schedule is outlined below.

MANAGEMENT PRESCRIPTION (5-YEAR)

4.15 The management of soft landscaping areas should follow best horticultural practice (Table 5), with a general requirement for appropriate planting of trees and shrubs and then maintenance until established.

4.16 The mitigation area is currently an improved sward, and the landscaping of this area will be undertaken as part of general landscaping works across the scheme. I.e. it will be undertaken as part of wider scheme landscaping and following the construction of the attenuation features.

Table 5. 5-year management.

Planting type	Year		
	0	1	2-5
Grassland and herbs: <ul style="list-style-type: none"> Meadow grassland, SuDS herbaceous / grass planting, bulb planting, SuDS meadow grassland SuDS wildflower turf. 	Establishment in March / April or September / October. Sow seed on grassland area. Establishment affected by weather - avoid dry periods. Mowing in autumn after a season of growth, removal of arisings.	Check grassland for injurious weeds and removal or herbicide treatment. Re-seed any failed areas. Mowing in late winter and then late-summer with removal of arisings.	Mowing in late winter and then late-summer with removal of arisings.
Trees and shrubs: <ul style="list-style-type: none"> POS tree planting, landmark tree planting. Native woodland, wetland tree and shrubs, native mixed hedgerow, private garden tree planting 	October to end-March. Planting according to standard practice.	Checking of newly planted trees and shrubs with watering during dry periods. Replace any dead trees / shrubs in winter.	Pruning of shrubs and trees as required to allow for appropriate growth forms.
Erect bat and bird boxes	To be erected prior to occupation, as described above.	-	-
Ensure fencing / garden gates have access for hedgehogs as required.	To be installed prior to occupation of each required dwelling.	-	-
Monitoring	-	Monitoring as part of landscape maintenance, including replacement of dead trees and shrubs, and other remedial works as required.	-

Item E. Details of the body responsible for implementation of the plan

4.17 The initial establishment of new areas of landscaping and additional measures will be undertaken by specialist contractors employed by Persimmon Homes. The long-term management of the landscaping outside of private areas will be maintained and transferred to a management company, highways authority or local authority as appropriate. Maintenance will accord with BS 8545 - clause 11.1-11.5 - Post-planting management and maintenance.

Item E. On-going monitoring and remedial measures.

4.18 The general management of structural planting will follow standard horticultural practice, while the management of wildlife areas will be based on the cutting and removal of arisings outside of the flowering period of spring to late-summer.

4.19 Monitoring will be undertaken as part of landscape maintenance, including replacement of dead trees and shrubs, and other remedial works implementation of measures, with remedial action as required. Any remedial planting will be undertaken in the next available planting season.

5. SYNTHESIS AND PRESCRIPTIONS

- 6.1 The strategy outlined has the objectives of first ensuring legal compliance with respect to construction works and then, second, to outline the measures proposed within the site to provide high quality habitat and resources for local wildlife. It is thought that the proposals are directly relevant to the local context and will result in a net ecological benefit and provide long-term continuity for the target species.
- 6.2 The proposed work items and measures relevant to the discharge of Conditions 31 and 32 are summarised below (Table 6).

Table 6. Summary of mitigation and enhancement measures covered under the GIMP for Phase 2 (not site-wide) and EMP.

Action	Phase	Detail
GIMP: Phase 2 (Condition 32)		
New landscaping to include various types of grassland and shrub and tree planting.	9 types with substantial native species components or otherwise high quality ornamentals.	Planting will provide connectivity across the Phase, connecting with other phases also. Large blocks of habitat will run east-west in particular. Severance by roads is considered to be of lesser importance. The landscaping will provide corridors of habitat around much of the phase boundary and offer a buffer to off-Site plantation woodland along the south boundary. An ecological mitigation area is provided, to be of benefit to a range of locally relevant species including great crested newts.
Clearance woody vegetation.	Outside of nesting period (March to August) preferred, or otherwise with watching brief.	
Protection of habitat.	One hedgerow to have a breach for access (a length of ~45m). Young plantation woodland to be removed for the SuDS. New landscaping intended as mitigation, including new hedgerow planting.	
Bird and bat boxes.	25% of buildings to have a box, with boxes located in indicative locations along aspects facing open space. Boxes to include bat boxes and also swift and house sparrow boxes.	
Hedgehog access	50% of dwellings to have specific hedgehog access measures to allow access from off-Site and between gardens.	
EMP: Phase 2 (Condition 31)		
Three species / groups of relevance: <ul style="list-style-type: none"> • Commuting bats, • Roosting bats, and • Great crested newts 	Commuting bats. The point where the road crosses H13 will have measures to reduce traffic speed and to encourage bats to fly higher. Across these phases there will not be any street lighting. Roosting bats. Nine trees have low roost potential without roosts having been found. Prior to arboricultural works, inspections for evidence of bats will be undertaken under ecologist supervision. Great crested newt licensing will be via the District Level scheme. The ecological mitigation land will additionally provide local enhancement.	
Features / species to benefit from actions.	<ul style="list-style-type: none"> • Habitats: Increase in semi-natural habitat (from improved sward) • Hedgerows: Some removal, but new planting as mitigation. • Bats: roosting. Bat boxes. • Bats: foraging. General increase in scrub and scrub-grassland mosaic, buffering of southern boundary by open space. • Nesting birds. Bird boxes. General increase in scrub and scrub-grassland mosaic. 	

Action	Phase	Detail
		<ul style="list-style-type: none"> Hedgehogs and invertebrates: General increase in scrub and scrub-grassland mosaic.
Landscaping constraints.		None in particular. Soil free-draining, and likely to be nutrient poor, which will benefit meadow planting.
Management plan for 5-year period.		Establishment according to good horticultural practice. Maintenance of trees and shrubs to include watering and any formative pruning. Grassland establishment at an appropriate time of year, with cutting in late-summer and possibly late-winter, with removal of arisings.
Remedial measures.		General horticultural practice will be followed, with replacement of dead trees and shrub specimens, to be identified as part of the landscape maintenance regime.

6. CONCLUSIONS

- 6.1 A range of mitigation and enhancement measures are included within the scheme masterplan or will be implemented as part of the works to be undertaken.
- 6.2 The overall landscaping framework across the scheme and within Phases 3 and 4 is a key driver for the measures required by both Conditions 32 and 31. This will generate substantial benefits for a range of species, and also landscape benefits. This will also include mitigation for the loss of lengths of hedgerows. This landscape will largely comprise native species or high quality ornamentals, and provide new grassland and scrub-grassland habitat.
- 6.3 A specific area is allocated as ecological mitigation land and will include high quality landscaping without public access.
- 6.4 Additional measures to be included within Phases 3 and 4 include bird and bat boxes, access into gardens for hedgehogs (50% of gardens to have specific measures), and appropriate working methods with respect to vegetarian clearance and nesting birds.
- 6.5 Specific measures within these phases for protected species are:
 - Commuting bats. The crossing point of the access road for bats roosting off-Site will have measures to reduce traffic speed and encourage the bats to fly above the traffic.
 - Roosting bats. Nine trees have low roost potential and prior to arboricultural works inspections will look for direct evidence of roosting.
 - Great crested newt licensing will be via the District Level scheme, but the ecological mitigation land will nevertheless provide local enhancement. Breeding ponds are not present within the scheme boundary but are off-Site.
- 6.6 The proposed mitigation is thought likely to be successful in minimising ecological impacts and also to generate enhancements for the species identified within the Phase 3 and 4 areas through the provision of new habitat and resources.

7. APPENDIX 1: LANDSCAPING PLANS

Phases 3 and 4 landscaping.



Phases 3 and 4 of Easton:
Ecological and Green Infrastructure management Plans (Conditions 31 and 32)



Planting palette for each type of particular wildlife value.

NOTE 1: POS tree planting

Aa	<i>Amelanchier arborea</i>	Ms	<i>Malus sylvestris</i> (Crab apple)
Ac	<i>Acer campestre</i> (Field Maple)	Mt	<i>Malus tschonoskii</i> (Ornamental apple)
Ag	<i>Alnus glutinosa</i> (Alder)	Pa	<i>Prunus avium</i> (Wild cherry)
Bp	<i>Betula pubescens</i> (downy birch)	Pc	<i>Prunus cerasifera</i> (Cherry plum)
BpZG	<i>Betula pendula</i> 'Zwisters Glory' (Birch)	Pp	<i>Prunus padus</i> (Bird Cherry)
Cb	<i>Carpinus betulus</i> (Hornbeam)		

NOTE 2: Landmark tree planting (street and parkland)

AcGC	<i>Acer campestre</i> 'Green Column' (Field maple),
AcE	<i>Acer campestre</i> 'Elsrijk' (Field Maple)
BpZG	<i>Betula pendula</i> 'Zwisters Glory' (Birch)
Axc	<i>Aesculus x carnea</i> (Horse chestnut)
Cc	<i>Corylus colurna</i> (Turkish Hazel)
Fs	<i>Fagus sylvatica</i> ' (Beech)
Gb	<i>Ginkgo biloba</i> (Maidenhair tree)
LsW	<i>Liquidambar styraciflua</i> 'Worplesdon' (Sweet gum),
PcN	<i>Prunus cerasifera</i> 'Nigra' (cherry)
Ps	<i>Prunus sargentii</i> (Sargent's cherry)
PcC	<i>Pyrus calleryana</i> 'Chanticleer' (Pear)
Qr	<i>Quercus robur</i> (Pedunculate oak)
SiB	<i>Sorbus intermedia</i> 'Brouwers' (Swedish Whitebeam),
Tc	<i>Tilia cordata</i> (Small-leaved lime)
TcGS	<i>Tilia cordata</i> 'Green Spire'
UC	<i>Ulmus lutece</i> (Elm)

NOTE 3: Native woodland planting mix**Species mix to comprise:**

<i>Acer campestre</i> Field maple	(10%)
<i>Betula pendula</i> Birch	(20%)
<i>Carpinus betulus</i> Hornbeam	(10%)
<i>Cornus sanguinea</i> Dogwood	(10%)
<i>Corylus avellana</i> Hazel	(5%)
<i>Crataegus monogyna</i> Hawthorn	(5%)
<i>Ilex aquifolium</i> Holly	(5%)
<i>Malus sylvestris</i> Crab Apple	(10%)
<i>Prunus avium</i> Wild Cherry	(5%)
<i>Quercus robur</i> Oak	(10%)
<i>Sambucus nigra</i> Elder	(5%)
<i>Viburnum Opulus</i> Guelder Rose	(5%)

NOTE 4: Native wetland tree and scrub planting mix**Species mix to comprise:**

<i>Alnus glutinosa</i> Alder	(5%)
<i>Betula pendula</i> Birch	(5%)
<i>Cornus sanguinea</i> Dogwood	(50%)
<i>Frangula alnus</i> Alder buckthorn	(10%)
<i>Prunus padus</i> Bird Cherry	(5%)
<i>Salix cinerea</i> Grey Willow	(25%)

NOTE 5: Native mixed hedgerow

Plant at 5 per linear metre in a double staggered row. To be protected with shrub guards. Temporary post and wire fencing will be installed to protect hedgerow from traffic whilst it establishes.

<i>Carpinus betulus</i> Hornbeam	(5%)
<i>Corylus avellana</i> Hazel	(15%)
<i>Cornus sanguinea</i> Dogwood	(5%)
<i>Crataegus monogyna</i> Hawthorn	(45%)
<i>Euonymus europaea</i> Spindle	(5%)
<i>Ilex aquifolium</i> Holly	(5%)
<i>Malus sylvestris</i> Crab Apple	(5%)
<i>Prunus avium</i> Wild Cherry	(5%)
<i>Quercus robur</i> Oak	(5%)
<i>Viburnum opulus</i> Guelder Rose	(5%)

NOTE 6: Single species hedgerow

Plant at 60cm centres in a single row.

May be any of the following: -

Cb	<i>Carpinus betulus</i>	(hornbeam)
Fs	<i>Fagus sylvatica</i>	(beech)
Gl	<i>Griselinia littoralis</i>	
Oxb	<i>Osmanthus x burkwoodii</i>	
PRR	<i>Photinia 'Red Robin'</i>	
Pl	<i>Prunus laurocerasus</i>	(laurel)

NOTE 9: Meadow grassland

Germinal Amenity WFG21: Everyday Meadow. Or similar approved. Sowing specification and mowing regime to manufacturers recommendations. Sowing rate 15g/m².

<i>Birdsfoot trefoil (lotus corniculatus)</i>	0.25%
<i>Agrostis capillaris (browntop bent)</i>	5%
<i>Festuca rubra commutata (chewings fescue)</i>	25%
<i>Centaurea nigra (common knapweed)</i>	0.5%
<i>Vicia sativa (common vetch)</i>	0.25%
<i>Chrysanthemum segetum (corn marigold)</i>	0.25%
<i>Papaver rhoeas (corn poppy)</i>	0.5%
<i>Agrostemma githago (corncockle)</i>	0.5%
<i>Centaurea cyanus (cornflower)</i>	0.25%
<i>Galium verum (lady's bedstraw)</i>	0.25%
<i>Ranunculus acris (meadow buttercup)</i>	0.25%
<i>Leucanthemum vulgare (oxeye daisy)</i>	0.5%
<i>Silene dioica (red campion)</i>	0.25%
<i>Plantago lanceolata (ribwort plantain)</i>	0.25%
<i>Sanguisorba minor (salad burnet)</i>	0.25%
<i>Prunella vulgaris (self heal)</i>	0.25%
<i>Festuca rubra litoralis (slender creeping red fescue)</i>	20%
<i>Poa pratensis (smooth stalked meadow grass)</i>	10%
<i>Festuca rubra rubra (strong creeping fescue)</i>	30%
<i>Silene alba (white campion)</i>	0.25%
<i>Trifolium repens (white clover)</i>	5%
<i>Achillea millefolium (yarrow)</i>	0.25%
<i>Rhinanthus minor (yellow rattle)</i>	0.25%

NOTE 10: SuDS meadow grassland

Emorsgate EM8: Meadow mixture for wetlands. Or similar approved. Sowing specification and mowing regime to manufacturers recommendations. Sowing rate 4g/m².

Wildflowers

0.5%	<i>Achillea millefolium</i>	Yarrow
0.4	<i>Achillea ptarmica</i>	Sneezewort
1	<i>Betonica officinalis</i> - (<i>Stachys officinalis</i>)	Betony
3	<i>Centaurea nigra</i>	Common Knapweed
0.4	<i>Filipendula ulmaria</i>	Meadowsweet
3	<i>Galium verum</i>	Lady's Bedstraw
0.5	<i>Geranium pratense</i>	Meadow Crane's-bill
0.5	<i>Leontodon hispidus</i>	Rough Hawkbit
1.8	<i>Leucanthemum vulgare</i>	Oxeye Daisy
0.2	<i>Lotus pedunculatus</i>	Greater Birdsfoot Trefoil
1	<i>Plantago lanceolata</i>	Ribwort Plantain
0.5	<i>Primula veris</i>	Cowslip
0.4	<i>Prunella vulgaris</i>	Selfheal
0.8	<i>Ranunculus acris</i>	Meadow Buttercup
0.8	<i>Rhinanthus minor</i>	Yellow Rattle
1.4	<i>Rumex acetosa</i>	Common Sorrel
0.1	<i>Sanguisorba officinalis</i>	Great Burnet
0.3	<i>Silene silaus</i>	Pepper Saxifrage
1.7	<i>Silene flos-cuculi</i> - (<i>Lychnis flos-cuculi</i>)	Ragged Robin
0.3	<i>Succisa pratensis</i>	Devil's-bit Scabious
0.6	<i>Taraxacum officinale</i>	Dandelion
0.8	<i>Vicia cracca</i>	Tufted Vetch

Grasses

10	<i>Agrostis capillaris</i>	Common Bent
1	<i>Alopecurus pratensis</i>	Meadow Foxtail (w)
3	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass (w)
2	<i>Briza media</i>	Quaking Grass (w)
24	<i>Cynosurus cristatus</i>	Crested Dogtail
1	<i>Deschampsia cespitosa</i>	Tufted Hair-grass (w)
32	<i>Festuca rubra</i>	Slender-creeping Red-fescue
1	<i>Hordeum secalinum</i>	Meadow Barley (w)
6	<i>Schedonorus pratensis</i> - (<i>Festuca pratensis</i>)	Meadow Fescue (w)

NOTE 11: SuDS Wildflower turf

Wildflower Turf WFT-SUD-37: Or similar approved. Specification and mowing regime to manufacturers recommendations.

Grasses

Sheep's Fescue Festuca ovina
Crested Dogtail Cynosurus cristatus
Yellow Oatgrass Trisetum flavescens
Slender creeping red fescue Festuca rubra trichophylla
Smooth Stalked Meadow Grass Poa pratensis
Sweet vernal Grass Anthoxanthum odoratum

Flora (top 10)

Betony Stachys officinalis
Birdsfoot Trefoil Lotus corniculatus
Bladder Campion Silene vulgaris
Common Knapweed Centaurea nigra
Common Sorrel Rumex acetosa
Cowslip Primula veris
Wild Red Clover Trifolium pratense

NOTE 12: SuDS herbaceous / grass planting

Plug plants, plant at 5m2.

Achillea millefolium Yarrow
Agrostis stolonifera Creeping Bent Grass
Carex acutiformis Pond sedge
Cynosurus cristatus Crested dogs tail
Iris pseudacorus Yellow flag
Leucanthemum vulgare Ox-eye daisy
 Purple loosestrife (*Lythrum salicaria*)
 Marsh marigold (*Caltha palustris*)
 Meadowsweet (*Filipendula vulgaris*)

NOTE 13: Private garden tree planting

To be detailed within the on-plot planting plans.

Typical species:

<i>Ad</i>	<i>Acer davidii</i> (Snakebark Maple)	<i>Pa</i>	<i>Prunus 'Accolade'</i> (Cherry)
<i>BpZG</i>	<i>Betula pendula 'Zwisters Glory'</i> (Birch)	<i>Md</i>	<i>Magnolia denudata</i> (Yulan magnolia)
<i>Cs</i>	<i>Cercis siliquastrum</i> (Judas tree)	<i>Mt</i>	<i>Malus trilobata</i> (crab apple)
<i>GtS</i>	<i>Gleditsia triacanthos Sunburst</i> (Honey Locust)	<i>Sa</i>	<i>Sorbus aria 'Lutescens'</i> (Swedish whitebeam)

8. APPENDIX 2: GIMP, SCHEME-WIDE: CONDITION 32

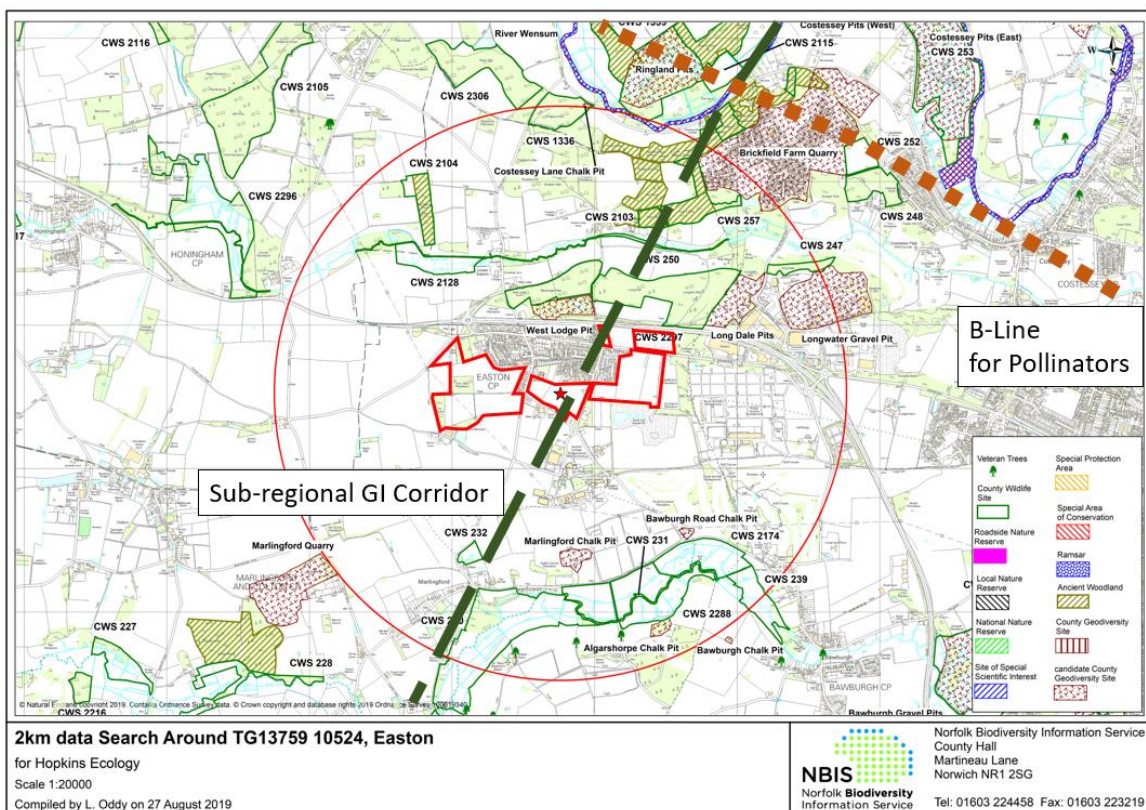
CONTEXT

Condition 32 requires an ecological management plan (EMP) for each phase. The Condition also states the items to be included as a minimum. This Section provides a Scheme-wide overview of the items relevant to this Condition.

GREEN INFRASTRUCTURE

The scheme is crossed by a sub-regional green infrastructure (GI) corridor, as identified within the policy requirements originating in the Joint Core Strategy³ (Figure A1).

Figure A1. The data search map of the Site with a 2km radius, with the Site boundary and GI corridors drawn on.



The Wensum valley also lies within an area identified as a B-Line ('bee'-line) for pollinating insects, which is part of a project overseen by Buglife – The Invertebrate Conservation Trust and fits within the National Pollinator Strategy (DEFRA 2015⁴); it is described as follows:

“The B-Lines are a series of ‘insect pathways’ running through our countryside and towns, along which we are restoring and creating a series of wildflower-rich habitat stepping stones. They link existing wildlife areas together, creating a network, like a railway, that will weave across the British landscape. This will provide large areas of brand new habitat benefiting bees and butterflies– but also a host of other wildlife”.

³ Greater Norwich Development Partnership (2014) *Joint Core Strategy for Broadland, Norwich and South Norfolk*. Available from: <http://www.greaternorwichgrowth.org.uk/planning/joint-core-strategy/>

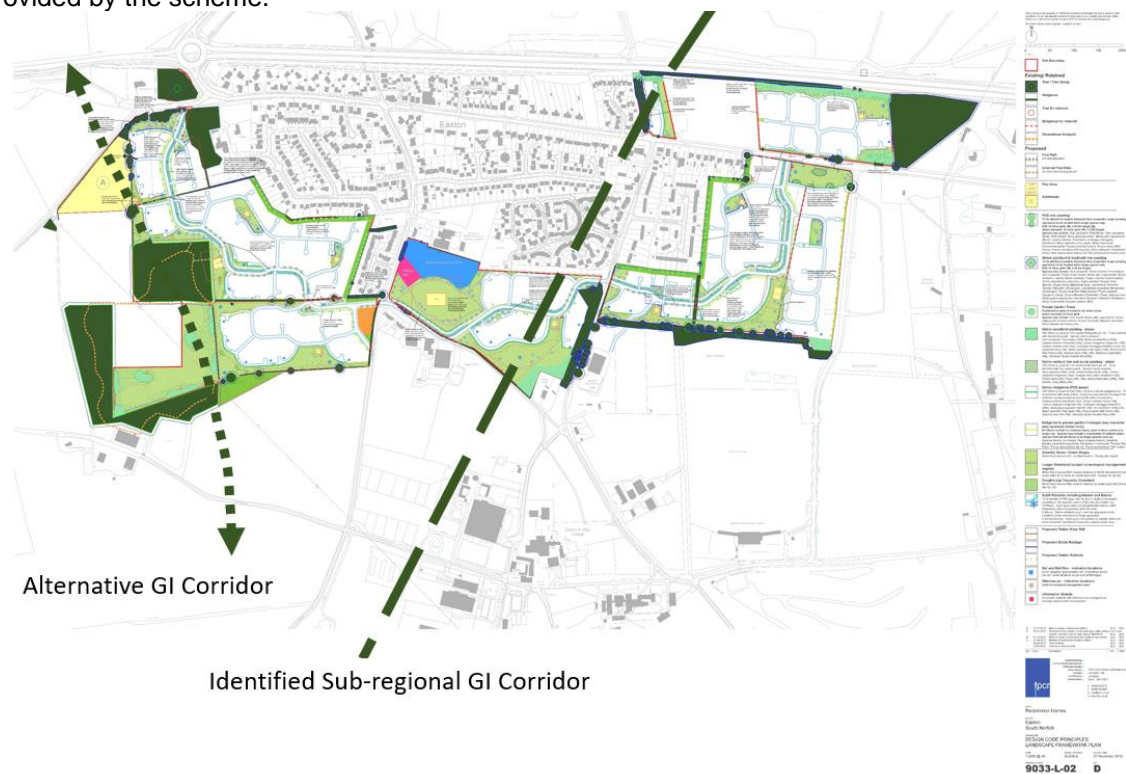
⁴ DEFRA (2015) *National Pollinator Strategy: Implementation Plan*. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/474386/nps-implementation-plan.pdf

SCHEME-WIDE FRAMEWORK

The landscape framework for the scheme (Figure A2) includes strong corridors of open space running east-west and also north-south. In the context of the sub-regional GI corridor it is noted that the indicative route crosses roughly centrally through the scheme and through the residential part of Easton. However, and noting that the proposals for GI corridors are indicative, the emphasis within the scheme is for the stronger elements of open space to be in the west of the Site:

- In the west these open spaces include an area identified specifically as ecological mitigation land.
- The wider arrangement of open space to be created by the scheme will link areas of existing woodland.
- The western boundary of the site lies close to the Food Enterprise Park⁵ which includes structural landscape planting of trees and shrubs along its east and south boundary and which will complement the current scheme's landscaping. This will provide a broad swathe of shrub and tree planting and also other non-arable vegetation within this western area.
- The western part of the Site lies close to the single carriageway section of the A47, rather than the dualled section crossed by the indicative GI route.

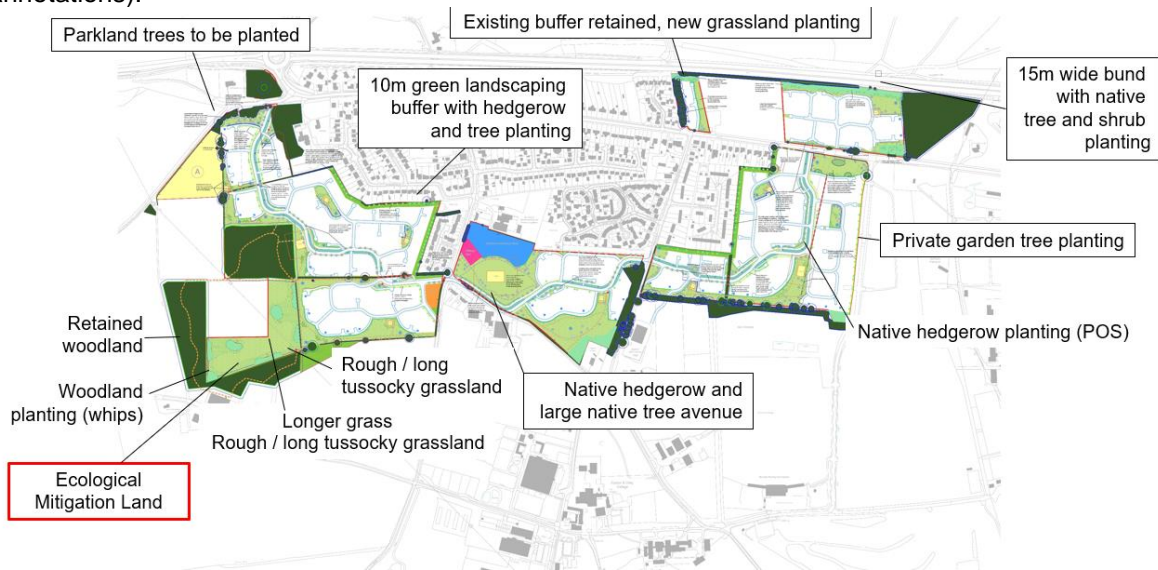
Figure A2. The landscaping framework with the identified GI corridor and a 'alternative' corridor provided by the scheme.



Within the landscaping framework there are a number of broad areas where new structural planting and other mitigation and enhancements are included (Figure A3).

⁵ <http://www.foodenterprise.com/>

Figure A3. Overview of main scheme-wide mitigation and enhancements (landscape framework with annotations).



The overall quantum of green infrastructure including open space such as allotments is ~16.5ha, or ~38% of the total area. The land identified for ecological mitigation will form part of the great crested newt mitigation works, but will have wider benefits for key local species.

PHASING

The scheme is proposed as five phases (Figure A4). The ecological mitigation land is proposed to be part of Phase 3 of the built development.

Figure A4. Phasing.



SCHEME-WIDE OPEN SPACE

The broad character of the key spaces is described below (Figure A5 and Table A1):

- Development will provide a range of open spaces and green routes to be enjoyed by people of all ages and abilities.
- The landscaping will comprise formal green and urban spaces and streets, to informal, naturalistic green spaces and greenways that reflect the rural character and provide a suitable transition to the rural context of Easton.
- The majority of planting within the scheme will focus on native species of trees and plants, particularly throughout the peripheral transitional spaces at the urban-rural interface. Non-native planting is also appropriate within more formal spaces and along streets.
- Street trees will be planted along the Green Spine and within focal squares and spaces throughout the development.
- Planting across the scheme will be implemented at the appropriate size to provide instant visual benefits and / or to maximise the opportunity for successful establishment.
- Native hedgerow and woodland planting will be specified as bare root and planted at a density of 5/linear metre (hedgerows) and 1.5m centres (woodland planting) and protected with tree/shrub rabbit guards.
- Formal spaces will include some non-native plant specimens.
- All trees within the public realm, including verges will be maintained and transferred to a management company, highways authority or local authority as appropriate. Maintenance will accord with BS 8545 - clause 11.1-11.5 - Post-planting management and maintenance. If any remedial planting is required then it will be undertaken in the next available planting season.

Figure A5. Scheme-wide key spaces.

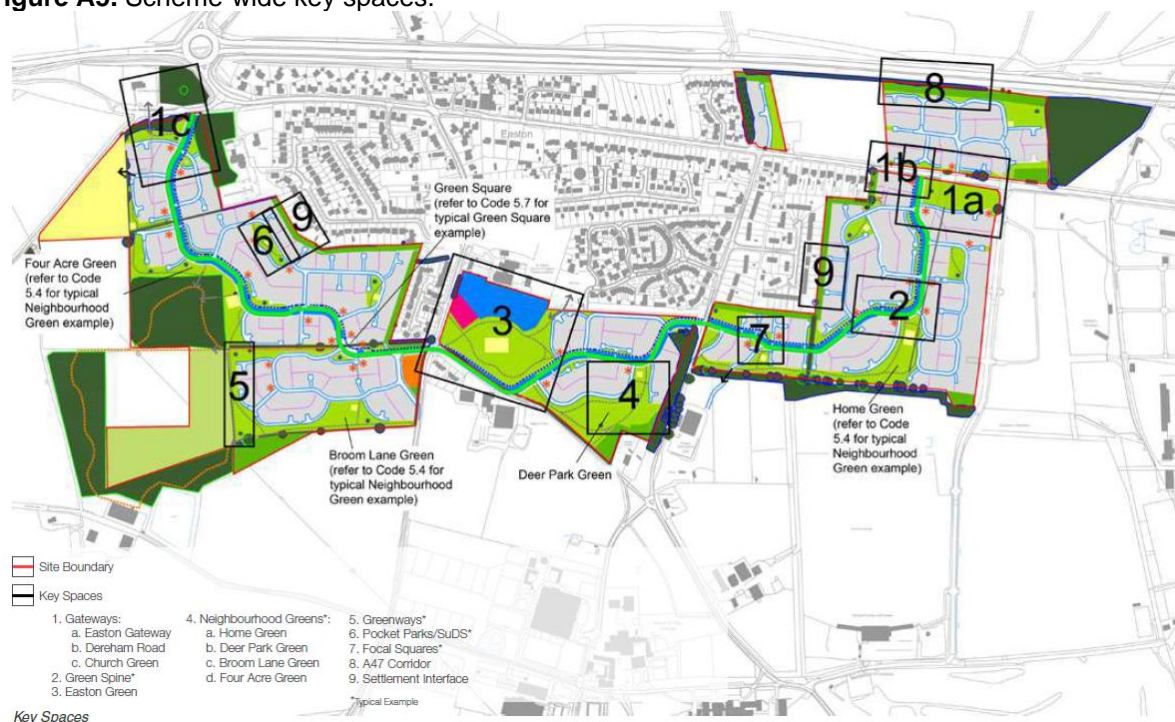


Table A1. Summary of key spaces

Phase	Reference (see Figure 6)	Key space	Character	Planting
1	1a	Easton Gateway	Landscaped greenspace including native tree and shrub planting with meadow grass.	Trees and shrubs, meadow and grassland.
1	1b	Dereham Road	Verge and hedgerow frontage to street.	Native single species hedgerow.
4	1c	Church Green	Semi-formal parkland and greenspace.	Parkland style trees within grass.
1	2	Green spine	Broad green corridor. SuDS features, tree planting in the street scene.	Street trees, hedgerow and grass planting.
2	3	Easton Green	Semi-formal and amenity greenspace.	Meadow grass and new native hedgerow and tree planting to replace the hedgerow. Swale.
2	4	Neighbourhood greens	Four further greenspaces, semi-formal with amenity facilities.	Meadow grass and new native hedgerow and tree planting to replace the hedgerow.
3	5	Greenways	Multifunctional perimeter green corridors provide a transitional landscape between the development edge and the surrounding rural landscape.	Native hedgerow and tree planting, meadow grassland. Boundary network hedgerows retained.
3	6	Pocket parks.	Smaller, semi-formal greenspaces.	Amenity swards with some SuDS.
1	7	Focal squares	Formal greenspace.	Amenity grass and semi-ornamental shrubs.
5	8	A47 corridor	15m wide landscape buffer. Noise bund.	Native tree and shrub planting at high density.
1, 3	9	Settlement interface	Planted buffers with retained hedgerows in places.	Native hedgerow planting.
3	Ecological mitigation land	Mitigation area	A mosaic of scrub, tussock and long sward grassland, and open sward grassland.	Native trees, shrub and meadow mixes.

ECOLOGICAL MITIGATION LAND

The ecological mitigation land will:

- Provide habitat for great crested newts located in the off-Site pond ~50m to the south.
- The wider character will be of a shrub and grass mosaic, with tussock and rough grassland. This will also include areas of verge suitable for the arable herbs and species of disturbed open grassland identified within the baseline surveys of 2019.
- Additional features such as hibernacula will be included.

SPECIFIC ITEMS FOR CONDITION 32.

Item A: detailed measures to mitigate the adverse impacts of the development and its construction on the ecology of the area (including severance effect of roads and other development and the timing of vegetation clearance).

The key location where severance is identified as a potential constraint is the north-west of the Site where a commuting route for bats from a roost in the Diocese buildings westwards along a hedge line will be severed. The roost supports a moderate number of soprano pipistrelles and is likely to also support common pipistrelles and brown long-eared bats. The measures are (see Figure A6):

- Retention of the main hedgerow with as small a breach as possible, approximately 16.5m to allow for the construction of the road and footpath. This will be subject to later detail design and with the calming of traffic as a feature, to reduce potential collisions with bats.
- Tree planting to provide a range of vegetation heights adjacent to the crossing.
- Absence of lighting.
- Installation of traffic calming.

Figure A6. Extract of the landscape framework showing the measures to protect the commuting route from the Diocese buildings.



The timing of vegetation clearance will be outside of the nesting bird season (March to August inclusive) or otherwise under a watching brief.

Item B: measures for the protection of habitat.

Throughout, hedgerow loss is minimised as far as possible, and trees and woodland areas are retained. A tree protection plan will accompany each phase outlining the required measures. No other areas of habitats are identified as being of conservation concern or status.

Item C: connected green infrastructure with measures to enhance the bio-diversity of the area (such as the provision of ponds, bird and bat boxes) and the subsequent implementation, timing and management and maintenance of such measures agreed.

The overall landscape framework provides a strong network of connecting green infrastructure. This applies to within the scheme and also within the broader context of the Site. These are as outlined previously within this section.

Bird and bat boxes will be included within each phase, with 10% of buildings to have one or other. These will be arranged as broad ‘clusters’ of boxes. Access will also be provided to gardens for hedgehogs through a combination of gaps beneath garden gates and holes within fencing, with 50% of gardens to have specific access.

The maintenance of the landscaping outside of private areas will be maintained and transferred to a management company, highways authority or local authority as appropriate. Maintenance will accord with BS 8545 - clause 11.1-11.5 - Post-planting management and maintenance.

Item D: Provision for the implementation, management and maintenance of the GIMP measures over a period of not less than 15 years.

As described above the long-term maintenance of the landscaping outside of private areas will be maintained and transferred to a management company, highways authority or local authority as appropriate. Maintenance will accord with BS 8545 - clause 11.1-11.5 - Post-planting management and maintenance.

9. APPENDIX 3: ADDITIONAL ECOLOGY DATA

HABITAT SUITABILITY INDEX

The ponds were evaluated using the Habitat Suitability Index (HSI) methodology (ARG, loc. cit.). The HSI of a pond is determined by calculating a geometric mean of 10 component factors of 'Suitability Indices' (SI) that are known to have an influence on its suitability as a breeding location for great crested newts (see A), thus:

$$\bullet \text{ HSI} = (\text{SI1} \times \text{SI2} \times \text{SI3} \times \text{SI4} \times \text{SI5} \times \text{SI6} \times \text{SI7} \times \text{SI8} \times \text{SI9} \times \text{SI10})^{1/10}$$

Once calculated, the HSI score for a waterbody can be categorised as follows:

- Excellent (>0.8)
- Good (0.7 – 0.79)
- Average (0.6 – 0.69)
- Below Average (0.5 – 0.59)
- Poor (<0.5)

Table A2. Habitat Suitability Index: component factors or SIs.

Index	Name	Description
SI1	Geographic Location	Lowland England or upland England, Scotland and Wales
SI2	Pond area	To the nearest 50m ²
SI3	Permanence	Number of years pond dry out of ten
SI4	Water quality	Measured by invertebrate diversity
SI5	Shade	Percentage shading of pond edge at least 1m from shore
SI6	Fowl	Level of waterfowl use
SI7	Fish	Level of fish population
SI8	Pond count	Number of ponds within 1km ²
SI9	Terrestrial habitat	Quality of surrounding terrestrial habitat
SI10	Macrophytes	Percentage extent of macrophyte cover on pond surface

The HSI scores for the pond are shown in Table A3.

Table A3. Habitat Suitability Index assessments (as presented in the preliminary ecological appraisal).

Factor	Pond B	
	Field Score	Factor Score (SI)
Location	Optimal	1
Pond area (m ²)	200	0.4
Pond permanence	Sometimes dries	0.5
Water quality	Moderate	0.67
Shade %	90	0.3
Fowl	Absent	1
Fish	Absent	1
Pond density km ⁻²	3	0.95
Terrestrial habitat	Good	0.67
Macrophyte cover % (likely, estimated)	0	0.85
HSI score	-	0.68
Rating	Average	

DIRECT SURVEYS

The direct surveys used an appropriate combination of methods, with torching and egg search on each visit and with bottle trapping on the final three. Netting was the third method on the first visit. Survey data and results are shown in Tables A4-7.

Table A4. Weather conditions

Date	Weather
28 March 2021	11°C, partial cloud cover (80%), light wind (Beaufort 1)
31 March 2021	13°C, partial cloud cover (90%), light wind (Beaufort 1)
24 April 2021	10°C, partial cloud cover (90%), light wind (Beaufort 2)
27 April 2021	11°C, partial cloud cover (60%), light wind (Beaufort 1)
2 May 2019	11°C, partial cloud cover (1000%), light wind (Beaufort 1)
5 May 2019	11°C, partial cloud cover (80%), light wind (Beaufort 12)

Table A5. Summary of survey conditions.

Pond	Date	Turbidity (0=completely clear, 5=very turbid)	Vegetation cover (0=no vegetation obscuring, 5=water completely obscured)
B	All visits	2	0

Table A6. Summary of methods.

Pond	Date	Method	Comment
B	28 March, 31 March and 24 April 2021	Torching, egg search and netting	-
	All later visits	Torching, egg search and bottle trapping	10 traps

Table A7. Survey results.

Pond	Date	Great crested newts		Common frog		Common toad		Smooth newt	
		Torch	Traps	Torch	Traps	Torch	Traps	Torch	Traps
B	28 March 2021	2 (male)	-	1	-	0	-	2	-
	31 March 2021	2 (1 male, 1 female)	-	1	-	0	-	4	-
	24 April 2021	4 (2 males, 2 female)	-	0	-	0	-	3	-
	27 April 2021	2 (male)	1 (male)	0	0	0	0	2	3
	2 May 2021	2 (1 male, 1 female)	2 (male)	0	0	0	0	2	2
	5 May 2021	1 (male)	0	0	0	0	0	1	2