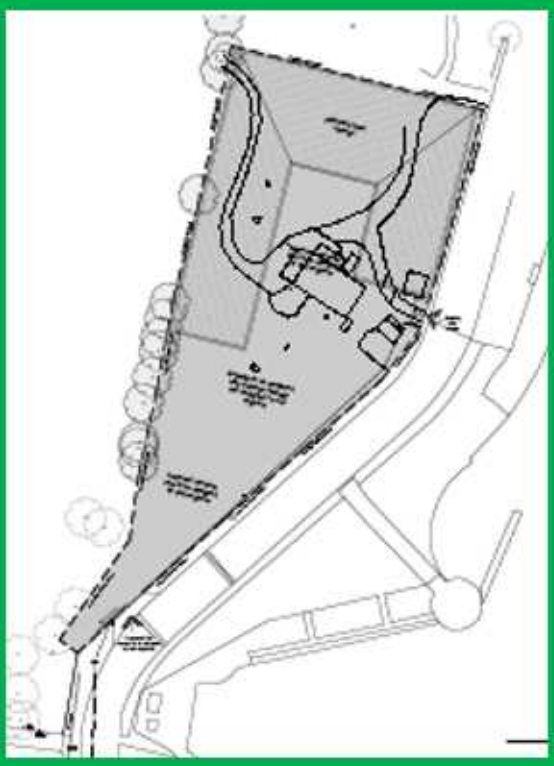
Glaven Ecology



West Bank
Sutton Bridge

Biodiversity Net Gain Plan

Prepared by
Glaven Ecology

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CIEEM
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1 Background

1.1.1 Planning is sought for the erection of storage unit and associated concrete yard on West Bank, Sutton Bridge, PE12 9HQ (Figure 1).

1.1.2 As part of the planning application South Holland Council asked for a biodiversity net gain strategy.

1.1.3 The content of the Biodiversity Net Gain Strategy includes the following:

a) DEFRA 4.0 Metrics calculations

b) Purpose and conservation objectives for proposed enhancement measures;

c) detailed designs or product descriptions to achieve stated objectives;

d) locations, orientations, and heights of proposed enhancement measures by appropriate maps and plans;

e) persons responsible for implementing the enhancement measures;

f) details of initial aftercare and long-term maintenance (where relevant).

2 Biodiversity Net Gain Calculations

2.1 DEFRA Small Metrics

2.1.1 The DEFRA 4.0 Metrics (2023) was used to calculate the current and projected habitats on site to see whether a net gain in habitats can be achieved by habitat creation alone.

2.1 Baseline Habitats

2.1.1 The site was visited by Carolyn Smith MCIEEM, Lead Ecologist at Glaven Ecology on 8th August 2023.

2.1.2 The site appeared to have undergone some recent clearance and was predominantly bare earth with some areas of modified grassland.

2.1.3 As good practice dictates the habitats prior to site clearance were used to calculate the biodiversity net gain for the site (Table 1).

2.1.4 The site prior to site clearance consisted of mixed scrub, modified grassland and bare ground. The mixed scrub was bramble and hawthorn as derived from the stumps and brash piles on site during the survey.

2.1.5 The grassland was poor condition with few herbs present and of a uniform sward with areas of bare earth.

Table 1: Baseline Habitats at West Bank, Sutton Bridge

Broad Habitat	Habitat Type	Area (hectares)
Urban	Artificial unvegetated, unsealed surface	0.15
Grassland	Modified grassland	0.11
Heathland and shrub	Mixed scrub	0.44

2.2 Habitats to be created

2.2.1 There will be an increase in sealed developed land on site due to the erection of the storage building in the north of site and the sealed concrete yard in the centre and south (Table 2).

2.2.2 There is scope to create a small area of grassland to the south of the building and some hawthorn scrub in the south of the site. Otherwise area habitat on site is difficult to provide given the requirement for the concrete yard for vehicle movement and parking.

2.2.3 However, to mitigate against the loss of the scrub on site it would be possible to plant hedgerow around the site boundaries, approximately 380m in total.

2.2.1 Figure 1 shows the habitats on site post development, including hedgerow planting.

Table 2: Habitats post development at West bank, Sutton Bridge

Broad Habitat	Proposed habitat	Area (hectares)
Urban	Developed land; sealed surface	0.68
Woodland and forest	Lowland mixed deciduous woodland	0.008
Grassland	Modified grassland	0.01
	Native hedgerow	0.38

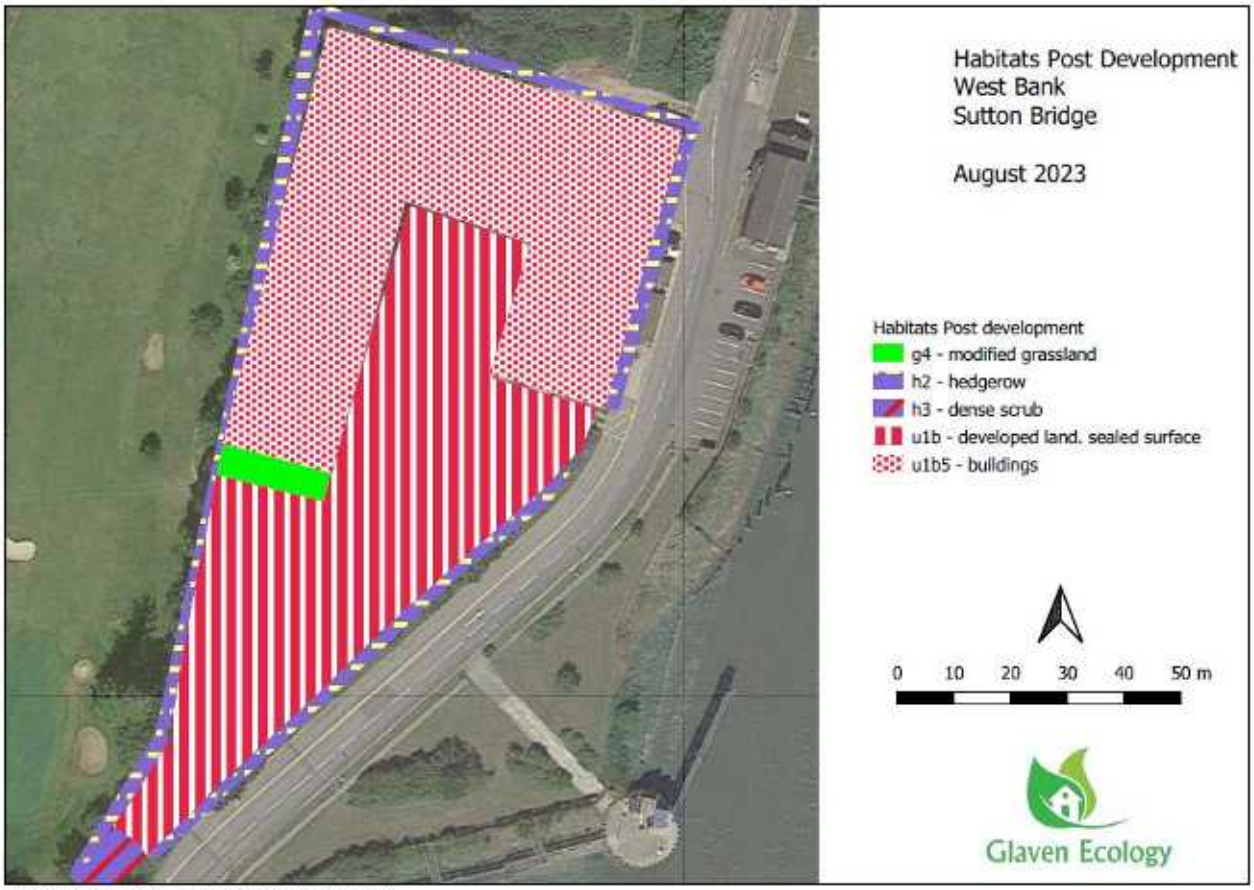


Figure 1: Habitats post development

2.3 Headline results

2.3.1 The results of the metric calculations show a loss in area habitat of 1.97 habitat units. However, there is a gain in hedgerow units of 1.27 (Table 3).

2.3.2 Given that there were no hedgerow units in the baseline habitats it is not possible to calculate a percentage change in biodiversity units. However, it can be seen that there is an overall loss in habitat.

Table 3. habitat units and hedgerows units post development

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-1.97
	Hedgerow units	1.27
	Watercourse units	0.00

2.4 Habitat specifications

2.4.1 The new hedgerow should be planted between November and March (but not in frozen or waterlogged conditions). They should be planted in double staggered rows, 40cm part with at least five plants per metre. The following hedgerow species are suggested for this location:

- Common Hawthorn *Crataegus monogyna*
- Hazel *Corylus Avellana*
- Field Maple *Acer campestre*
- Dogwood *Cornus sanguinea*
- Dog Rose *Rosa canina*

2.4.2 Commonly used non-native species such as Leyland cypress and cherry laurel will not be used because they can have ecologically detrimental impacts such as acidification of underlying soils and overshadowing native vegetation.

2.4.3 Plants such as ivy, clematis or honeysuckle should be planted within the hedging to help improve the habitat for wildlife.

2.4.4 The new grass area will be of a diverse species mix, with at least four grass species and eight herb species. This will encourage invertebrates on the developed site which in turn will provide feeding opportunities for bats and birds. Suitable mixes are available online and can be targeted to the desired grassland style, for example Emorsgate offers mixes

for flowering lawns (where regular mowing is required) and for wildflower grassland (where infrequent mowing is possible).

3 Enhancements

3.1 Purpose and conservation objectives

3.1.1 As the site is relatively small it is unrealistic to expect new habitats to be created at the site (see Table 3), however as well as the new hedgerow, grass area and hawthorn scrub, biodiversity net gain could be achieved from installing species specific habitats such as bat boxes and bird boxes (as yet this cannot be taken into account in the DEFRA Metric).

3.1.2 Specifications and suggested locations for these enhancements can be found in Appendices 1, 2 and 3.

3.2 Bats

3.2.1 To enhance the sites biodiversity it is recommended that two bat boxes be installed along the western aspect of the new building.

3.2.2 The Beaumaris Bat Box or Elisa Bat Box would be suitable.

3.2.3 Boxes should be mounted at least 4m from ground level on the southern or eastern aspects.

3.2.4 These boxes are suitable for species which are most commonly found roosting in buildings, such as pipistrelle and Natterer's.

3.3 Birds

3.3.1 Installation of two No.17 Schwegler Swift Boxes (triple cavity) along the northern aspect. These boxes are lightweight and suitable for industrial buildings.

3.3.2 Boxes intended for swifts are well used by other species of conservation concern and can be considered a 'universal' nest chamber (Newall, 2021). Swift nest boxes are commercially available and will be provided with instructions for appropriate installation. The Manthorpe Swift box or equivalent would be suitable.

3.3.3 In general, bird boxes should be sited in or on gable ends, or under overhanging eaves, overlooking gardens or other green spaces, and with a clear/unobstructed flight line for easier access and egress.

3.4 Persons Responsible and maintenance

3.4.1 It is the landowner/developer's responsibility (and their contractor as instructed) to install and maintain the agreed enhancements as listed in this report.

3.4.2 Bat boxes can be checked to ensure they remain secure, with cobwebs removed from the outside, but should not otherwise be disturbed.

3.4.3 A well-designed bird box will only need one annual clean in the autumn.

3.4.4 It is important not to clean out bird boxes before August as they may still be occupied. Wait until autumn and then remove the contents, scattering them on the ground some way from the box to help prevent parasites re-infesting the nest box. Wear gloves and use a small brush or scraper to remove debris from the corners. Boiling water can be used to kill any parasites remaining in the box, leaving the lid off afterwards until it is fully dry.

3.4.5 Do not wait until the winter to clean out nest boxes as birds may already be roosting in them.

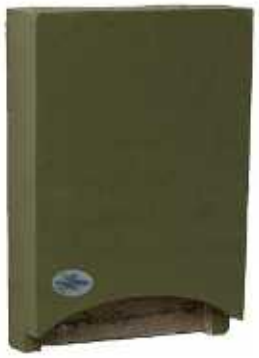
Appendix 1 - Specification of bat boxes

Beaumaris Woodstone Bat Box



- This bat box is made entirely from woodstone, a robust material comprising concrete and wood fibres.
- Suitable for attaching to external walls and should be sited as high up on the façade as possible, at a height of at least 3m from the ground.
- 390mm x 290mm; Weight: 4.4kg

Elisa Bat Box



- Sitting close to a wall in order to minimise the dangers of strong winds knocking it free, the Elisa features a single internal cavity with an entrance hole at the bottom, meaning that it does not need to be cleaned.
- The Elisa Wood Concrete Bat box is designed to provide an ideal summer roost and nesting space for a variety of bat species, including pipistrelles and Daubenton's.
- 260mm x 100mm x 370;

Appendix 2 - Specification of Bird boxes

Schwegler No17A Swift Box – triple cavity



- The Swift Box No. 17A is made from a special mixture of compressed plant fibres and concrete which enables it to provide good insulation and an extremely long life.
- The box is supplied in a natural grey colour but can be painted to match the background using an air-permeable paint.
- Dimensions: 140mm x 140mm x 300m, Weight: 7.1kg

Appendix 4 – Enhancement Locations

These are the indicative locations of the enhancements listed within this report.

