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# **Biodiversity Enhancement Layout**

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**1-3 Meadow Acre, Norton**

**for**

**Mr Sauveur Desira**

**5 January 2024**

**Client**

Mr Sauveur Desira

**Planning authority**

Mid Suffolk District Council

***Time limit of reliance***

*Please note that the reported surveys were conducted on the date(s) stated in the report and that it represents site conditions at the time of the visit. The findings and recommended mitigation are based on these conditions. If site conditions change materially after the site survey, the original report cannot be relied upon and will need to be updated. Ecological reports and surveys can typically be relied on for 18 to 24 months from the date of survey.*

*Surveys supporting European Protected Species Mitigation Licence applications must be within the current or most recent survey season for bats (May to September), or within two survey seasons for great crested newts (March to June).*

Document	Biodiversity Enhancement Layout
Version	1.0
Date	5 January 2024
Reference number	3420
Author	Miranda Proctor B.Sc (Hons), Natural England licences (Bat level 1 2020-44596-CLS-CLS, Great crested newt level 1 2018-37838-CLS-CLS)
Reviewer	Nathan Duszynski M.Sc, B.Sc (Hons), ACIEEM, Natural England licences (Bat level 2 2017-31943-CLS-CLS, Great crested newt level 1 2016-24303-CLS-CLS, Barn owl level 1 2023-11104-CL29-OWL)

***Signed disclosure***

*The information, data, advice and opinions provided in this report which I have provided is true and has been prepared in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. I confirm that the opinions expressed are my true and professional bona fide opinions.*

*Etienne Swarts, ACIEEM*

**Greenlight Environmental Consultancy Limited**

Diss Business Hub  
Hopper Way  
Diss  
Norfolk  
IP22 4GT  
www.greenlightco.co.uk



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## 1. INTRODUCTION

1.1. Greenlight Environmental Consultancy Ltd. has been commissioned to compile evidence to discharge a planning condition (Application Number: DC/23/04414, DC/23/04415 and DC/23/04416, Mid Suffolk District Council, November 2023). The proposed development is located at 1-3 Meadow Acre, Norton, Suffolk, IP31 3GU (grid reference: TL 95689 66018).

1.2. Condition 2 states:

*“Within three months of the date of this decision, details of the biodiversity enhancement measures including a Biodiversity Enhancement Layout, providing the locations of the enhancements, shall be submitted to and approved in writing by the local planning authority. If enhancement(s) includes bird or bat boxes, the manufacturer’s details, height and orientation of affixing shall be required.*

*The enhancement measures shall be implemented in accordance with the approved details, within three months of LPA approval in writing, and all features shall be retained in that manner thereafter.*

*Reason: To enhance protected and Priority Species and allow the LPA to discharge its duties under the S40 of the NERC Act 2006 (Priority habitats and species).”*

## 2. CONDITION 2 – BIODIVERSITY ENHANCEMENT LAYOUT

2.1. This report outlines the biodiversity enhancement layout for three detached cart lodges located at 1-3 Meadow Acre, Norton.

2.2. The conservation objectives include:

- i. Mitigation and compensation for potential impacts on protected and priority species/habitats.
- ii. Maintaining the favourable conservation status of protected and priority species.
- iii. Providing a net gain in biodiversity, as is encouraged by National Planning Policy Framework (NPPF, 2023).

## Habitats

- 2.3. A soft landscaping scheme will be implemented to include:
- i. The planting of new native species-rich ( $\geq 5$  species), hedgerows and trees along the site peripheries. Species will include 40% hawthorn *Crataegus monogyna*, 25% hazel *Corylus avellana*, 15% blackthorn *Prunus spinosa*, 10% field maple *Acer campestre* and 10% dogwood *Cornus sanguinea*.
  - ii. All bare root stock shall be planted between late October and March inclusive. Plants shall be delivered to site in quantities which can be planted the same day. No plant roots shall be allowed to dry out.
  - iii. Dig L or T shaped notches and insert eight plants at 25cm intervals and bare root trees in hedgerows at 10 metre intervals in two staggered rows, remove weeds, large stones to 50cm x 50cm with organic mulching to all new hedging and trees and insert rabbit spiral protectors and canes and geotextile fabric. Revisit after 12 months to replace non-surviving plants/trees.
- 2.4. Construction works carried out in accordance with British Standards Institution (2012), BS 5837:2012, Trees in relation to design, demolition and construction – recommendations, to protect trees which are to be retained and their root protection areas.

## Bats

- 2.5. As a precautionary measure, the following mitigation will be implemented to avoid impacts on bats from the proposed works:
- i. Any lighting schemes will follow guidance from the Bat Conservation Trust (GN08/23) and CIE 150:2017. Warm-white (<3,000K) lights with UV filters (where necessary) will be installed away from roosting locations and linear features. Lighting units will feature a beam angle <70°, connected to movement sensors and feature baffles, hoods, louvres and horizontal cut off units at 90° where necessary.
- 2.6. As enhancements, the following will be implemented:
- i. One standalone bat box for every new building on site, totalling three boxes (Greenwood's Ecohabitats three crevice bat box – please see Appendix B for design and Appendix E for location).
- 2.7. After these precautionary mitigation measures, we predict no impact on bats as a result of the development plans.

### **Birds**

- 2.8. Any works affecting bird nesting habitat such as management of scrub, hedgerows or trees would ideally need to be conducted outside the main nesting season. If work is planned during the bird nesting season (between 1<sup>st</sup> March and 31<sup>st</sup> July), then a precautionary check of all habitats will be conducted by a qualified ecologist immediately prior to starting any work. If any nesting birds are found, an appropriate protection zone from the nest will be required and will be maintained until the young have fledged.
- 2.9. As enhancements, the following will be implemented:
- ii. One sparrow terrace for every new building on site, totalling three sparrow terraces (Vivara Pro WoodStone Sparrow Terrace Nest Box – Appendix B and Appendix E for location).

### **Other animals**

- 2.10. The surrounding habitat of the site is considered suitable for hedgehogs. To maintain potential hedgehog routes within the site and between the site and further habitats, any fencing installed will be porous and provide access openings for hedgehogs (see Appendix C for examples).
- 2.11. General mitigation to protect wildlife during any additional construction are as follows:
- i. Any excavations will have a rough sawn plank placed inside to act as a ramp to allow any animals that have fallen in to escape. The excavations will be checked each morning works are scheduled for, to remove any animals trapped.
  - ii. Construction materials will be stored off the ground on pallets and waste materials in skips, to prevent providing shelter for animals and subsequent harm when materials are moved.
- 2.12. As enhancements, the following will be implemented:
- i. The installation of one insect hotel for every new building on site, totalling three insect hotels (Schwegler Insect Nesting Aid – Appendix D and Appendix E for location).

### **Responsible persons**

- 2.13. The client is the developer and landowner of the site and it will be their responsibility to ensure the safeguarding of the mitigation, enhancements and any post-development management, maintenance and monitoring.

### **Aftercare and long-term maintenance**

- 2.14. The model of bat and bird boxes have been selected for their design and material, which will ensure the boxes will be protected from weather and attacks from other animals.
- 2.15. If the bat and bird boxes experience any damage, they will need to be repaired or replaced.
- 2.16. Bird boxes will need to be cleaned at the end of each bird nesting season; the main nesting seasons lasts from March to August, so it is recommended boxes are cleaned in October to ensure all nests are unoccupied.
- 2.17. Hedgerows and tree mays need to be maintained. Management would ideally be undertaken outside the main nesting season, which lasts from March to August, and if work is planned during the bird nesting season, a precautionary check of all habitats will be conducted by a qualified ecologist immediately prior to starting any work. If any nesting birds are found, an appropriate protection zone from the nest will be required and will be maintained until the young have fledged.

### 3. BIBLIOGRAPHY

- Baker, J., Beebee, T., Buckley, J. Gent, T., Orchard, D. (2011). *Amphibian Habitat Management Handbook*. Amphibian and Reptile Conservation: Bournemouth
- Barn Owl Trust (2012). *Barn Owl Conservation Handbook*. Pelagic Publishing: Exeter.
- Bright, P., Morris, P., Mitchell-Jones, T. (2006). *The dormouse conservation handbook*. English Nature
- British Standard BS 42020:2013 *Biodiversity - Code of Practice for planning and development*.
- British Standards Institution (2012). BS 5837:2012, *Trees in relation to design, demolition and construction – Recommendations*.
- CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal*.
- Collins, J. (Ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4<sup>th</sup> edn.)*. The Bat Conservation Trust, London.
- Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R., Lock, L. Musgrove, A., Noble, D., Stroud, D., Richard, G. (2015). *Birds of conservation concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man*. *British Birds* 108, 708-746.
- Edgar, P., Foster, J., Baker, J. (2010). *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation: Bournemouth
- English Nature (2001). *Great Crested Newt Mitigation Guidelines*. Peterborough.
- Gent, A.H. and Gibson, S.D. eds. (1998). *Herpetofauna Workers' Manual*. Peterborough, Joint Nature Conservation Committee.
- Griffiths, R.A., Raper, S.J., Brady, L.D. (1996). *Evaluation of a standard method for surveying common frogs (Rana temporaria) and newts (Triturus cristatus, T. helveticus, and T. vulgaris)*. Joint Nature Conservation Committee Report No. 259.
- International Commission on Illumination (2017). CIE 150:2017, *Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations*.
- JNCC (2010). *Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.
- Langton, T., Beckett, C., Foster, J. (2001). *GCN Conservation handbook*. Froglife.
- McLean, I.F.G., JNCC (Drafted by) on behalf of the Inter-agency Translocations Working Group (2003). *A Habitats Translocation Policy for Britain*.
- Mitchell-Jones (2004). *Bat mitigation guidelines*. English Nature: Peterborough
- Oldham, R.S., Keeble, J., Swan, M.J.S., Jeffcote, M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. *Herpetological Journal* 10 (4), 143-155.
- Pearce, G.E. (2011). *Badger behaviour, conservation and rehabilitation*. Pelagic Publishing: Exeter.
- Sewell, D., Griffiths, R.A., Beebee, T.J.C., Foster, J., Wilkinson, J.W. (2013). *Survey protocols for the British herpetofauna*. ARC, DICE University of Kent and University of Sussex.
- Stone, E.L. (2013). *Bats and lighting: Overview of current evidence and mitigation*. University of Bristol.
- Strachan R., Moorhouse T., Gelling, M. (2011). *Water Vole Conservation Handbook Third Edition*. University of Oxford: Abingdon



## Appendix A

### Native species suitable for planting and sowing

Plants should be obtained from specialist nurseries and preferably be of local genetic stock.

Key: (f) – fruit and berry species; (e) – evergreen species; (se) semi-evergreen species; (d) – deciduous species

Trees	
Alder (d)	<i>Alnus glutinosa</i>
Apples (f; d)	<i>Malus spp.</i> (local varieties)
Ash (d)	<i>Fraxinus excelsior</i>
Beech (d)	<i>Fagus sylvatica</i>
Bird cherry (f; d)	<i>Prunus padus</i>
Elder (f; d)	<i>Sambucus nigra</i>
Elm (d)	<i>Ulmus procera</i>
Field maple (d)	<i>Acer campestre</i>
Pedunculate oak (d)	<i>Quercus robur</i>
Rowan (f; d)	<i>Sorbus aucuparia</i>
Pears (f; d)	<i>Pyrus spp.</i>
Silver birch (d)	<i>Betula pendula</i>
Small-leaved lime (d)	<i>Tilia cordata</i>
White willow (d)	<i>Salix alba</i>
Wild cherry (f; d)	<i>Prunus avium</i>
Walnut (d)	<i>Juglans regia</i>

Shrubs	
Blackthorn (f; d)	<i>Prunus spinosa</i>
Buckthorn (f; d)	<i>Rhamnus catharticus</i>
Crab apple (f; d)	<i>Malus sylvestris</i>
Dog rose (f; d)	<i>Rosa canina</i>
Dogwood (f; d)	<i>Cornus sanguinea</i>
Field maple (d)	<i>Acer campestre</i>
Guelder-rose (f; d)	<i>Viburnum opulus</i>
Hawthorn (f; d)	<i>Crataegus monogyna</i>
Hazel (d)	<i>Corylus avellana</i>
Holly (e)	<i>Ilex aquifolium</i>
Honeysuckle (f; d)	<i>Lonicera periclymenum</i>
Spindle (f; d)	<i>Euonymus europaeus</i>
Wild privet (f; se)	<i>Ligustrum vulgare</i>
Yew (f; e)	<i>Taxus baccata</i>

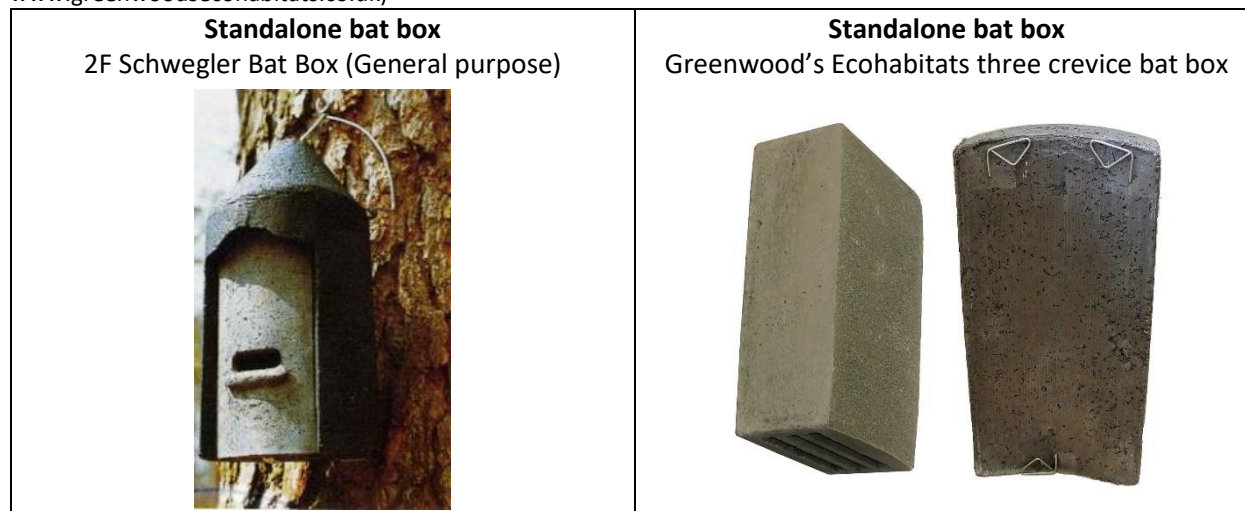
Flowering plants	
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Black knapweed	<i>Centaurea nigra</i>
Common cat's-ear	<i>Hypochoeris radicata</i>
Common sorrel	<i>Rumex acetosa</i>
Common vetch	<i>Vicia sativa</i>
Cowslip	<i>Primula veris</i>
Field scabious	<i>Knautia arvensis</i>
Foxglove	<i>Digitalis purpurea</i>
Lady's bedstraw	<i>Galium verum</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Primrose	<i>Primula vulgaris</i>
Red clover	<i>Trifolium pratense</i>
Selfheal	<i>Prunella vulgaris</i>
Sweet violet	<i>Viola odorata</i>
Wild daffodil	<i>Narcissus pseudonarcissus</i>
Yarrow	<i>Achillea millefolium</i>

Grasses	
Common bent	<i>Agrostis capillaris</i>
Crested dog's-tail	<i>Cynosurus cristatus</i>
Meadow fescue	<i>Festuca pratensis</i>
Red fescue	<i>Festuca rubra</i>
Rough meadow-grass	<i>Poa trivialis</i>
Small timothy	<i>Phleum bertolonii</i>
Smooth meadow-grass	<i>Poa pratensis</i>
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>
Yellow oat-grass	<i>Trisetum flavescens</i>

## Appendix B

### Examples of bat and bird boxes

(images sourced from [www.nhbs.com](http://www.nhbs.com), [www.habibat.co.uk](http://www.habibat.co.uk), [www.manthorpe.co.uk](http://www.manthorpe.co.uk), [www.barnowltrust.org.uk](http://www.barnowltrust.org.uk) and [www.greenwoodsecohabitats.co.uk](http://www.greenwoodsecohabitats.co.uk))



#### Recommendations for installing bat boxes:

(Sourced from Bat Conservation Trust [www.bct.org](http://www.bct.org))

Ideally, several boxes should be put up facing in different directions to provide a range of conditions.

Locate boxes:

- Where bats are known to feed close to hedges and treelines (some bats use a treeline or hedgerow for navigation, putting boxes near these features may help the bats find the box).
- On trees: boxes should be placed on the trunk of a mature tree, where there is a clear flight line/accessible entrance.
- On buildings: boxes should be placed as close to the eaves as possible.
- As high as possible (ideally, at least 3 to 4m above the ground, where safe installation is possible).
- In sunny places, sheltered from strong winds (usually between south-west and south-east).

Make sure the boxes are secured.

Boxes can be installed on trees using adjustable ties to avoid damaging the trees. Otherwise, timber screw bolts or nails can be used. Aluminium alloy nails are less likely to damage saws and chipping machinery.

Bats need time to find and explore new homes, and it may be several months or even years before boxes have residents. Once bats find a place they want to live they can return over and over again. Droppings on the landing area, urine stains around the lower parts of the box and chattering noises from inside on warm afternoons and evenings are signs of occupation.



**Recommendations for installing bird boxes:**

(Sourced from British Trust for Ornithology [www.bto.org](http://www.bto.org), Manthorpe [www.manthorpe.co.uk](http://www.manthorpe.co.uk) and Barn Owl Trust [www.barnowltrust.org.uk](http://www.barnowltrust.org.uk))

The highest priority when siting a nest box must be to provide a safe and comfortable environment in which birds can nest successfully.

Tips for putting up a nest box:

- Boxes should be sited 1-3m from the ground, ideally on tree trunks but can be placed on the side of a shed or wall. Avoid areas where foliage obscures the entrance hole.
- Don't place boxes too close to another nest box of the same type, as this may promote aggressive behaviour between neighbours.
- Shelter your nest box from prevailing wind, rain and strong sunlight. The box should face between north and east, and angled vertically or slightly downwards to prevent rain entering.
- Make sure cats cannot get into the box.
- Keep nest box away from bird feeders.
- Use galvanized or stainless steel screws or nails. If fixing boxes to trees, galvanised wire can be used to tie the box to the trunk or hang it from a branch. Make sure to regularly inspect these fittings (every two or three years) to ensure the box remains securely attached.



Tips for putting up house sparrow terraces and swift bricks/boxes:

- Locate  $\geq 5$ m high on the gable wall of the property and above the level of the insulation zone.
- Where possible, install in locations that are unlikely to receive large amounts of direct sunlight during the hottest times of the day, ideal places include below the overhang of the verge and barge board.

## Appendix C

### Examples of hedgehog friendly fencing

(images sourced from [www.quercusfencing.com](http://www.quercusfencing.com) and [www.jackson-fencing.co.uk](http://www.jackson-fencing.co.uk))

<b>Quercus Fencing</b>	<b>Jacksons-Fencing</b>
Hedgehog friendly oak woven fencing panels	Hedgehog friendly gravel board for use with slotted posts
	

#### **Recommendations for installing hedgehog friendly fencing:**

(Sourced from Hedgehog Street [www.hedgehogstreet.org](http://www.hedgehogstreet.org))

A hedgehog friendly fence should have a gap measuring at least 13cm by 13cm in the gravel board. These gaps allow any hedgehog to pass through but are too small for nearly all pets.

At least one hedgehog friendly fence panel should be located on each side of your garden, to provide unimpeded access.

Almost all fencing materials can be made hedgehog friendly, but may require DIY adaptations. Please note that some concrete gravel boards contain metal rods running along the length of the boards to provide strength and rigidity, and cannot be cut. To overcome this, a gap can be left between the gravel board and post to provide the required gap.

## Appendix D Insect hotel

(images sourced from [www.nhbs.com](http://www.nhbs.com))





<p style="text-align: center;"><b>Insect hotel</b> Schwegler Insect Nesting Aid, Wood-concrete</p> 	<p style="text-align: center;"><b>Insect hotel</b> Schwegler Clay and Reed Insect Nest</p> 
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### Recommended insect hotel installation

(Sourced from NHBS [www.nhbs.com](http://www.nhbs.com))

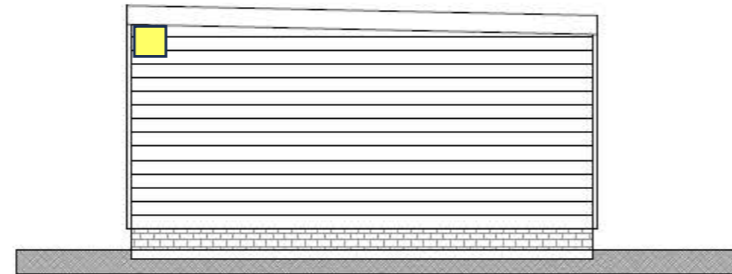
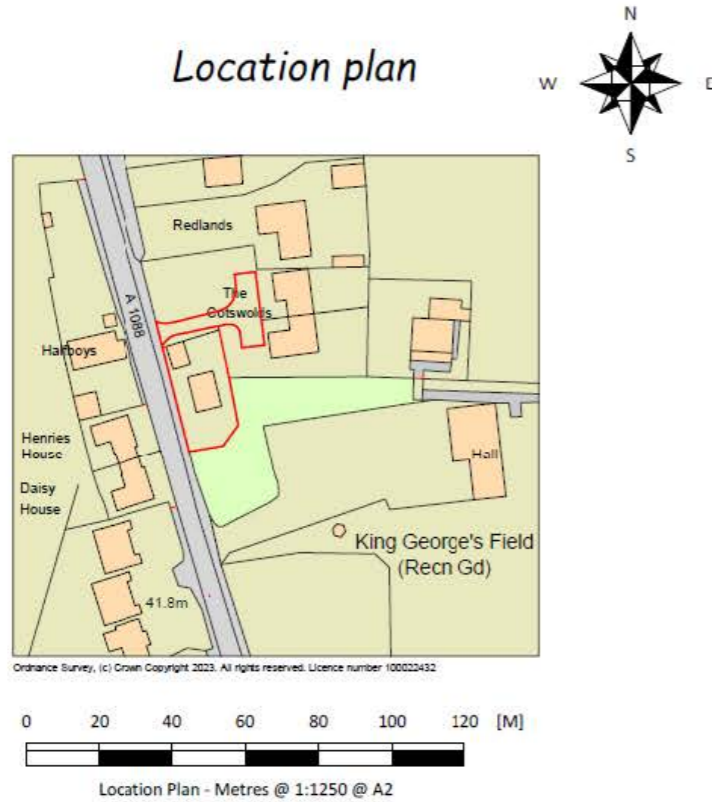
- Insect hotels will be installed on a south facing sunny spot of an external wall of the building, at a minimum height of 1m. No vegetation should be obstructing the holes.
- The insect hotel must be left outside during winter.

**Appendix E**  
**Proposed plans**

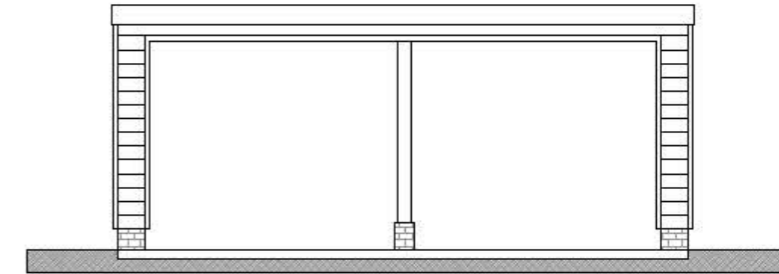
-  = bat box
-  = insect hotel
-  = sparrow terrace nest box
-  = hedgerow planting

# Cartlodge to 1 Meadow Acre, Norton, Suffolk, IP31 3GU

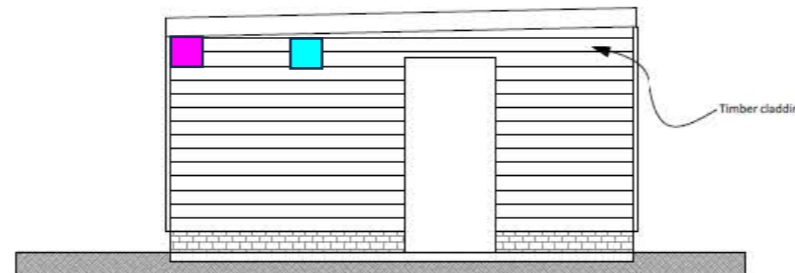
Location plan



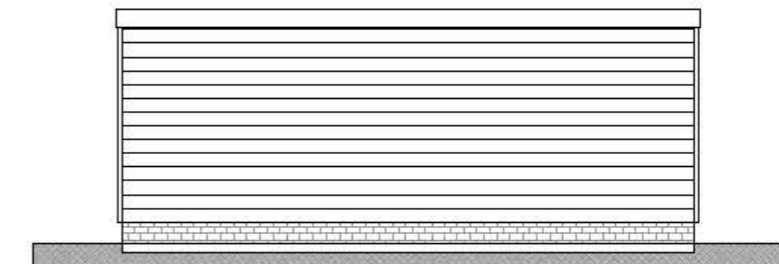
North



East

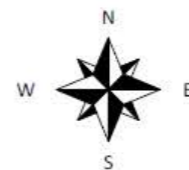


South



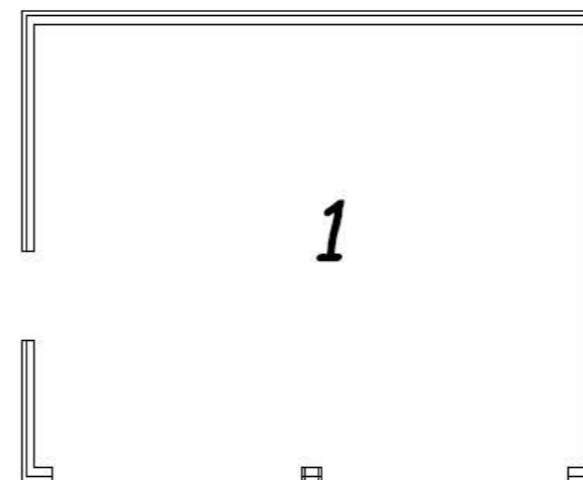
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Block plan

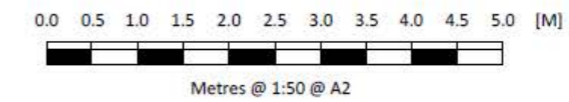


MATERIAL SCHEDULE:-

- Walls - Timber clad with natural finish and red clay multi brick plinth.
- Roof - Flat roof comprising mineral felt.
- Windows - None
- Fascias, Soffits and Bargeboards - Softwood with natural finish.
- Rainwater Goods - Black plastic rainwater goods.



Floor plan existing



Width : 6229mm  
 Depth : 5068mm  
 Finished Floor Level : 41.49m  
 Flat Roof : 44.07m

Revised plan ref 1881-1-B; Ecological 18.12.23



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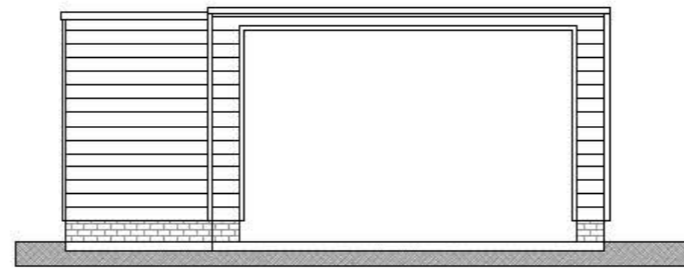
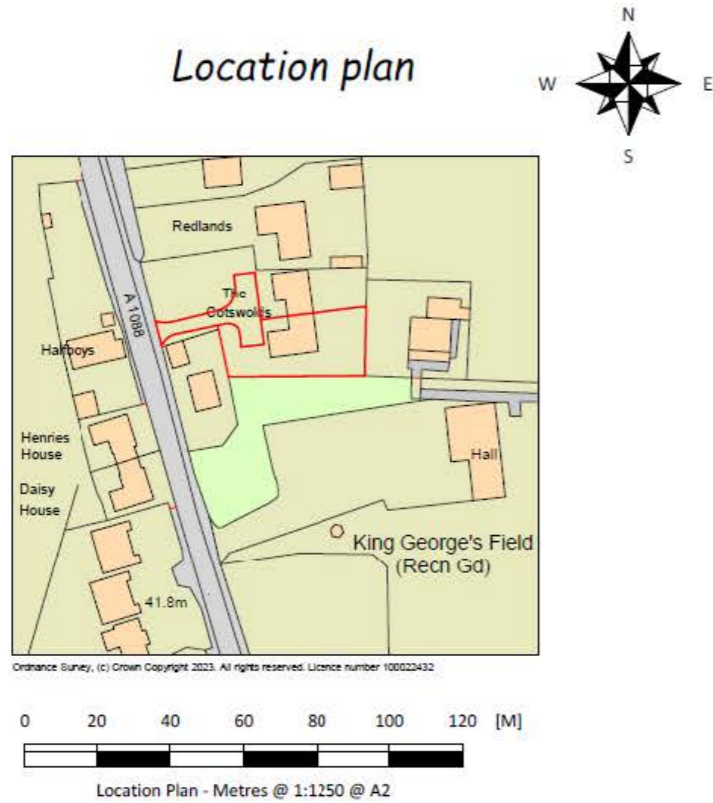
Project - Cartlodge at 1 Meadow Acre,  
 Norton, Suffolk, IP31 3GU

Client - Sam Desira Esq  
 Project Number - 1881 Drawing Number - 1  
 Drawn by - KGG Revision Number - B  
 Date: 03.09.23

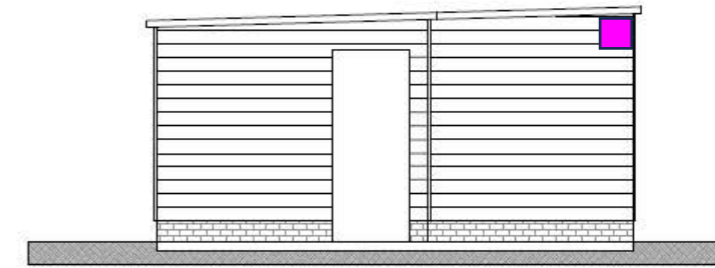
PLANNING

# Cartlodge to 2 Meadow Acre, Norton, Suffolk, IP31 3GU

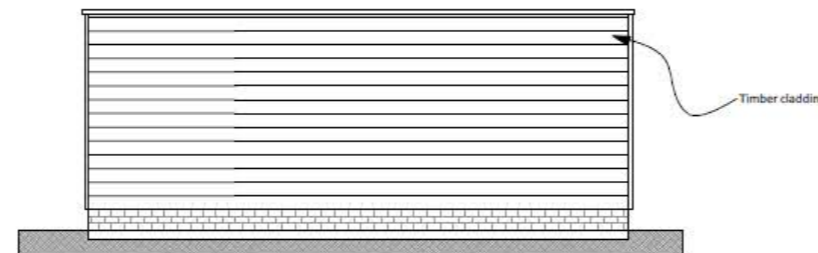
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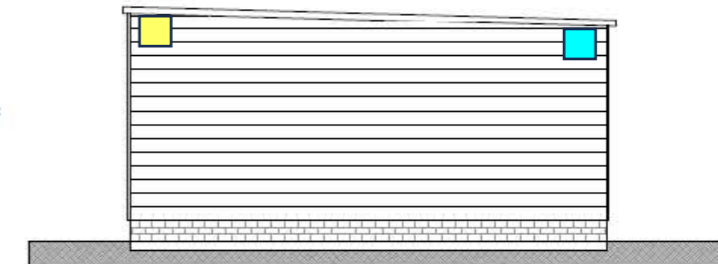
North



East

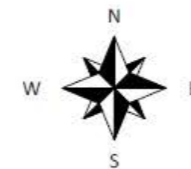


South



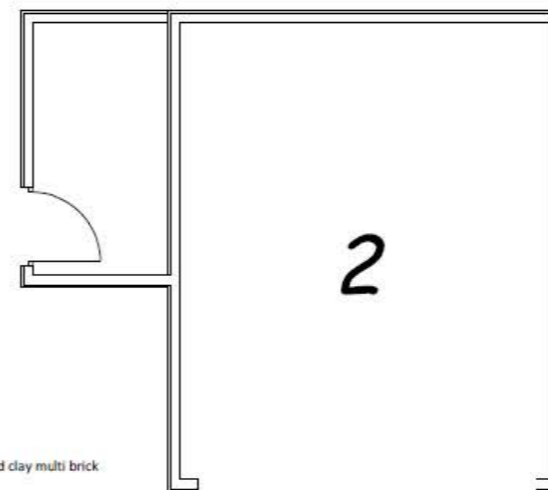
West

Block plan



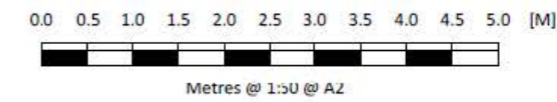
**MATERIAL SCHEDULE:-**

- Walls - Timber clad with natural finish and red clay multi brick plinth.
- Roof - Flat roof comprising mineral felt.
- Windows - None
- Doors - Timber with natural finish.
- Fascias, Soffits and Bargeboards - Softwood with natural finish.
- Rainwater Goods - Black plastic rainwater goods.



Floor plan existing

Width : 5935mm  
Depth : 5268mm  
Finished Floor Level : 41.69m  
Flat Roof : 44.27m



Revised plan ref 1881-2-B; Ecological 18.12.23

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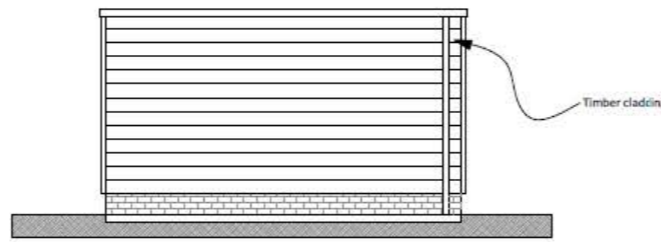
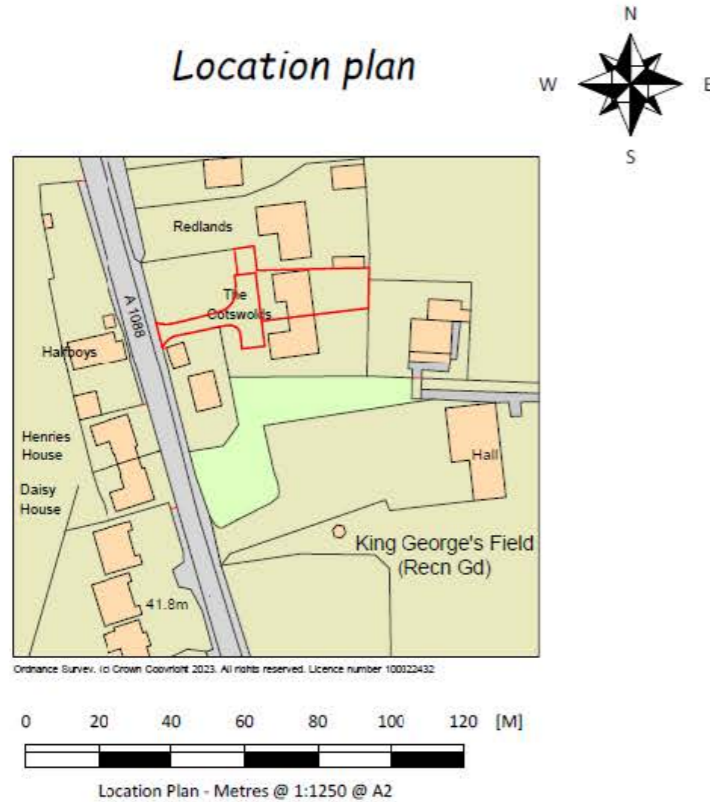
Project - Cartlodge at 2 Meadow Acre,  
Norton, Suffolk, IP31 3GU  
Client - Sam Desira Esq  
Project Number - 1881 Drawing Number - 2  
Drawn by - KGG Revision Number - B  
Date: 03.09.23

## PLANNING

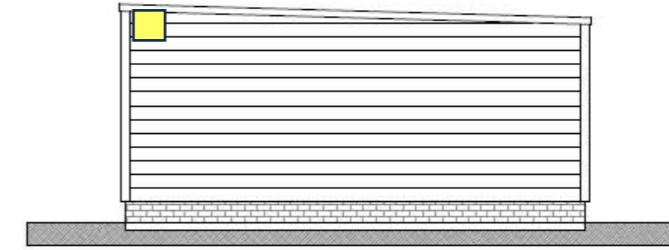


# Cartlodge to 3 Meadow Acre, Norton, Suffolk, IP31 3GU

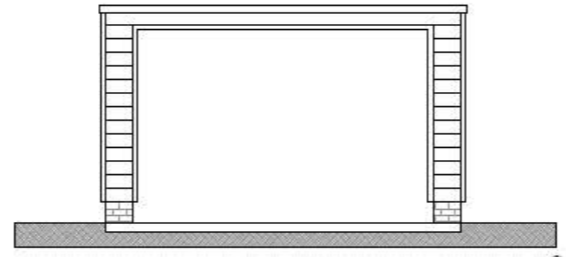
Location plan



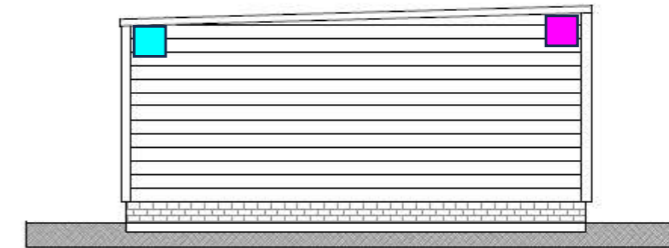
North



East

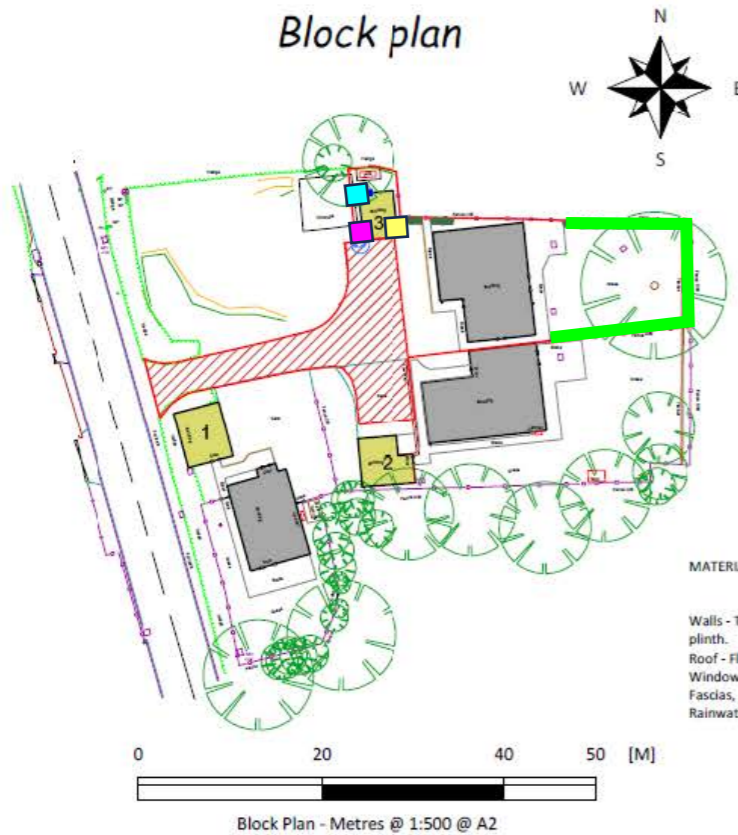


South

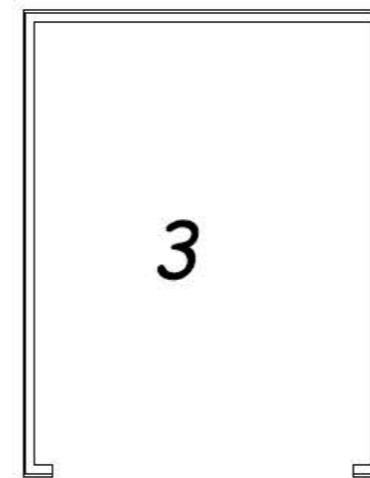


West

Block plan

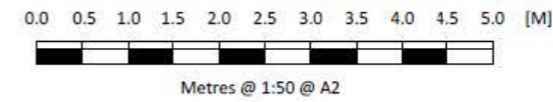


- MATERIAL SCHEDULE:-
- Walls - Timber clad with natural finish and red clay multi brick plinth.
  - Roof - Flat roof comprising mineral felt.
  - Windows - None
  - Fascias, Soffits and Bargeboards - Softwood with natural finish.
  - Rainwater Goods - Black plastic rainwater goods.



Floor plan existing

Width : 3910mm  
 Depth : 5036mm  
 Finished Floor Level : 41.90m  
 Flat Roof : 44.25m



Revised plan ref 1881-3-B; Ecological 18.12.23

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 office@kgamham.co.uk  
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Project - Cartlodge at 3 Meadow Acre,  
 Norton, Suffolk, IP31 3GU  
 Client - Sam Desira Esq  
 Project Number - 1881 Drawing Number - 3  
 Drawn by - KGG Revision Number - B  
 Date: 03.09.23

## PLANNING