



A Preliminary Ecological Appraisal & Assessment of The Barn at Windyridge.

Aim: To establish the presence or absence of bats & birds in the building & importance of adjacent habitats.

██████████
Windyridge
Tewkesbury road
Coombe Hill
GL19 4AR

Reference: 1G\Bat & bird's survey.doc
7th May 2021

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1. Introduction & Background

As part of the planning application, for the conversion of The Barn at Windyridge into a dwelling (& part removal), it is necessary to survey the building and adjacent areas to be directly affected by the proposed development, to establish whether there are any protected species currently using the building proposed for conversion or any priority habitat adjacent to the building. Previously the whole barn received approval under class Q planning ref: 20/00588 but this new proposal is for a planning application for conversion of only part of the barn & dismantling of the rest.

2. Methodology of Surveys

The survey of the building & land was carried out on the 20th November 2020; by Ros Willder MCIEEM & CEnv, Bat Licence number CLS03109 & Natasha James, Dormouse license number 2019-43685-CLS of Willder Ecology, the weather was wet. The daytime survey began at 10:30 am.

A detailed daytime survey was carried out of the building and any areas which would potentially be affected by the proposed development. This was done by a thorough visual inspection of building using a strong hand-held torch.

In addition, a frequency division bat detector and endoscope were used, where appropriate, to enable further detail examination of the walls. The area around the building was also surveyed and the adjacent habitats assessed.

A pond search was carried out to identify ponds within 250m & 500m of the site, the results of which are discussed in Section 4 and shown on the Pond Search map is shown in Appendix Three.

A designated site search was also carried out using the MAGIC map service from Natural England and the results are discussed in section 4 and shown in Appendix four.

3. Results of Surveys

3.1 Examination of the barn at Windy Ridge

The building proposed for conversion (& part dismantling) was in use as an agricultural building housing cattle and pigs. Part of the barn is still used for storage of garden machinery. The main construction for the walls of the barn are breeze block. At the south western elevation of the barn there are two large open areas leading to the two subdivided sections of the barn.

The roof is comprised of composite corrugated roof sheets. On the north western elevation of the barn is a lean to which is comprised of tin roofing sheets and timbers and has a number of Elder shrubs growing within it as shown below in figure 1.



Figure 1: The south western elevation of the first section of the barn and the lean to

The external breeze block walls are exposed but are all well-sealed with no cracks or crevices in them as shown in figure one above. The western side of the first enclosed section of the barn has glazed metal framed windows with an adjacent lean-to section of the building on the south eastern and north western side of the building as shown above in figure one & over the page in figure four.

Despite the direct flight access into this area, it offers little roosting potential due to the lack of gaps or crevices in the walls or roof & the large amount of natural light. The corrugated composite roofing sheets are unlined and there are five glazed windows in the internal walls. The metal & timber roof frames are heavily covered in cobwebs. One jackdaw nest was observed within the barn as shown in figure three.



Figure 2 – The northern gable wall and side elevations of section one



Figure 3 – cobwebs and one Jackdaw nest found

The interior of the second section of the barn is again naturally well-lit throughout by the large open sections on the north eastern and south western gable ends & a large opening along the south eastern elevation wall (for ventilation) as shown in figure four below. In addition to the large permeant openings throughout the barn the corrugated composite roofing sheets are interspersed with Perspex sheet sections to give further levels of natural light throughout the barn.



Figure 4 - the interior of the south-eastern lean-to section of the barn

Both sections of the barn are of breeze block construction and have a hard standing floor. In the second section there is a large ivy which has grown through a gap in the south western elevation wall as shown in figure five. At the corner of this large lean-to section there is a cattle pen formed with rusty metal sheets as the walls as shown above in figure four.

This second lean-to section of the barn has metal RSJ from floor to roof holding up large timbers that have considerable rot and water damage as seen in figures four above and in figure five over the page.



Figure 5 – The internal northern elevation & side wall of the manor

The north eastern elevation wall of the barn as shown below in figure six shows a small timber door on the north eastern gable end of the tallest section of the barn with the two lean to areas coming off this part of the barn & the partly repaired breeze block wall of the lean to.



Figure 6 – the northern elevation

There was no evidence of use by bats found in the interior of any part of the building. There is a lack of crevices within the external & internal walls due to the breeze block being in good condition. The corrugated roof sheets do not offer optimum bat roosting habitat due to the wide variation of temperatures that this type of covering offers & the lack of undisturbed cracks & crevices that corrugated roofing provides further reduce the potential use into the roof space by bats.

The large openings in the barn which provide direct flight access into the building also mean that the building is naturally well lit & exposed in this area with no enclosed dark undisturbed areas making the barn less attractive & less suitable for use by bats. However the large openings mean that there is direct flight access available for birds & at the time of the visit of the barn a jackdaws nest was evident in the roof apex of the barn.



Figure 7 – the southern elevation view of both sections of the barn

The area adjacent to the building to be affected by this proposal is predominately comprised of hard standing that has some vegetation cover and access drive and parking area. On the rear northern elevation, east and western elevation of the barn there is a permeant grass field comprised of a semi-improved grassland habitat that would be considered to be species poor semi-improved grassland as shown below in figure eight.



Figure 8 – The outside area to the rear of the barn

4. Pond & Data search results & Ecological Assessment

4.1 POND SEARCH

A pond search was carried out, using the MAGIC map service from Natural England, to within a radius of 500m of the barn at Windyridge. The results of the map-based pond search show that there are four ponds within 500m. However, two of the ponds are situated 400m to the north west of the site & divided from the site by the main A38 road. The third pond is situated 475m away from the site to the south east & divided from the site by the Leigh Brook as such both the distance from the site & the Leigh Brook & the main A38 are considered to be sufficient physical barriers to prevent amphibians crossing from these ponds on to the site.

This leaves one pond within the 250m key radius of the site as the pond is situated 175m directly north of the barn this was surveyed & assessed, and a Habitat Suitability Index score calculated with the results shown in table one over the page.



Figure 9 – The pond to the north of the site

The pond is a large pond which appears to be connected to a watercourse & also appeared that local conditions suggest that fish may be present. The limited emergent vegetation & close proximity of a regularly mown residential garden appeared to offer a below average value to Great Crested Newts.

As the barn itself is surrounded by hard standing & improved pasture & has extremely limited cover for wildlife making the likelihood of any Great Crested Newts on site considered to be negligible.

ARGUK GCN HSI Calculator

		Pond Name Grid Ref	<i>Example</i> <i>SK 123456</i>	Pond One Windyridge
SI No	SI Description	<i>SI Value</i>		SI Value
1	Geographic location		1.00	1
2	Pond area		0.50	0.6
3	Pond permanence		0.90	0.9
4	Water quality		1.00	0.67
5	Shade		1.00	1
6	Waterfowl effect		1.00	0.67
7	Fish presence		1.00	0.67
8	Pond Density		0.65	0.1
9	Terrestrial habitat		1.00	0.33
10	Macrophyte cover		0.90	0.5
HSI Score			0.88	0.55
Pond suitability (see below)			<i>Excellent</i>	<i>Below average</i>

Categorisation of HSI Score by Lee Brady

HSI Score	Pond Suitability
< 0.50	Poor
0.50 - 0.59	Below average
0.60 - 0.69	Average
0.70 - 0.79	Good
> 0.80	Excellent

Based
on

ARGUK advice note 5 - Great Crested Newt Habitat Suitability Index

4.2 THE DATA SEARCH

The data search was carried out using the MAGIC Map service from Natural England. The search results identified there is one local Site of Special Scientific Interest (SSSI) Coombe Hill Canal SSSI which is situated 0.6km away from the site & is managed as a nature reserve by the Gloucestershire Wildlife Trust but there are no other designated sites within the 2km search area however the site is within the impact risk zone for the Coombe Hill Canal SSSI.

The Priority Habitats within the wider 2km radius of the area including:- Coastal Floodplain and grazing marsh, Good quality Semi Improved Grassland, Traditional Orchard and Deciduous Woodland.

Of the Deciduous Woodland recorded within the search radius, no sites were noted as Ancient Semi-natural Woodland. It should also be noted that no Priority Habitats were observed or recorded within the proposed development Boundary.

The following species were also recorded within the 2km search radius, Curlew, Lapwing, Redshank, Grey Partridge, Snipe, Turtle Dove and Yellow Wagtail. Great Crested Newt were also found to be present within the ponds within the 2km radius.

4.3 Ecological Assessment

The habitats within the barn building itself and the adjacent areas of hard standing & semi-improved tightly grazed pasture have negligible suitability for use by any European protected species (including bats). The natural light levels within the building and the complete lack of available cracks and crevices within the barn and most crucially the lack of available dark undisturbed spaces within the barn make the building of negligible suitability for bats and this was confirmed by the complete lack of evidence of use by bats.

There was evidence of nesting birds within the barn, as such works to the central part of the barn will have to be carried out outside of when the jackdaws are nesting in this part of the barn. The main nesting season is considered to be April to August.

Whilst there was no evidence of use by bats in the barn & the likelihood of any direct impacts by the proposal is considered to be negligible a precautionary approach is recommended to dismantling of parts of the barn & careful timing due to birds to avoid any impacts.

There is one designated site within a 2km radius of the site & the site is therefore within the impact risk zone for the Coombe Hill Canal SSSI, the impact risk zone is applicable to all planning applications except householder applications.

However, as the SSSI is divided from the site by the main A38 and is situated of sufficient distance from the site & is confined to the barn itself & areas of tightly grazed grassland & was not deemed to have an impact when the previous planning application was granted the ecological assessment must conclude that there is a limited potential for the proposal to cause an impact to the identified designated site.

There are no priority habitats within the proposed red development boundary as such the potential for any impacts to designated sites or priority habitats is considered to be negligible.

The site was found to have negligible suitability for Great Crested newts as the nearest pond had a below average suitability for GCN & was situated 175m away & the area around the barn to be affected is predominately hard standing & tightly grazed pasture which offers limited suitability for Wildlife such as amphibians & reptiles.

5. Conclusion, Mitigation & Enhancements

The proposal is limited to a conversion of the barn into a dwelling & dismantling of the part of the barn within existing areas of hard standing. The barn and its adjacent areas of hard standing & tightly grazed pasture are of limited value to wildlife, as such the proposal will not have any adverse effects on any designated sites or priority habitats or species in the wider area.

The lack of evidence of Bat activity within the building suggests that there are no bats currently using the building for roosting; this may be due to high natural light level throughout due to the Perspex roof lights & glazed windows and the construction being comprised primarily of breeze blocks walls which are well sealed providing no cracks or crevices and the corrugated roofing sheets having adverse thermal properties for bats.

Even though no evidence of bats was found, and the majority of the adjacent habitats are hard standing & tightly grazed pasture, a careful precautionary approach to dismantling of the rest of the barn & works to converting the barn should be taken so that all impacts can be avoided for the identified nesting birds all together as detailed in section 5.1 Mitigation (a precautionary approach).

Although the nearest pond is 175m away & identified as having below average suitability for Great Crested Newts a precautionary approach is also recommended to avoid any potential harm to either amphibians or reptiles however unlikely their presence as detailed in section 5.1 Mitigation.

Whilst the low-level works to the barn are not expected to have any impact on the SSSI which is of sufficient distance from the site & was found to be the case for the previously granted planning application on this barn this does not mean that the proposal cannot be carefully designed to have enhancements for biodiversity that will complement the identified Coombe Hill Canal SSSI & GWT managed Nature Reserve.

As such enhancements for biodiversity will also be designed into the proposal to ensure enhancements for bats, birds, insects, hedgehogs, reptiles & amphibians for details see section 5.2 & the proposed plan in appendix five.

5.1. Mitigation (a precautionary approach)

All persons involved in the works to the barn & dismantling of part of the roof of the barn shall receive a detailed 'Toolbox Talk' on Nesting birds, Bats & amphibians from Ros Willder of Willder Ecology or a similarly qualified ecologist.

The toolbox talk will cover the following: -

- ❖ the full legal protection of Nesting birds, Bats & Amphibians (including Great Crested Newts).
- ❖ the lifecycle of Bats & Amphibians & the proposed timing of the roof works (outside of the main bird nesting season April to August to avoid any impact to nesting birds in the barn)
- ❖ the identification of area within the barn where the birds are nesting & any suitable habitats for use by amphibians in the wider area.
- ❖ What to do if evidence of either Bats or amphibians are found during works

Before any works begin the barn shall have a pre-commencement check to see if birds are still nesting or that there is any evidence of use by bats. All dismantling of roof works will be overseen directly by Ros Willder of Willder Ecology or a similarly qualified ecologist. If any bats are found all works will cease until Natural England has been contacted and way forward agreed which may include a license application to permit the works to continue.

No new external lighting is planned on the walls of the barn other than downlighters which will retain the dark skies around the site.

5.2 ENHANCEMENTS

Two stone open fronted bird boxes will be incorporated into the converted barn wall on the side elevation as shown in appendix five.

As an enhancement for bats several integral bat boxes such as soffit bat boxes will be included at the edge of the roof of the converted barn to encourage future use of the barn by bats as shown in Appendix five.

In addition, an insect house shall be erected on the southern elevation of the converted barn & a hedgehog house positioned at the edge of the gardens of the converted barn by the proposed native fruit tree planting area (an additional enhancement) shown on the plans in appendix five.

If all the recommendations are followed no harm will occur to either bats or birds and enhanced provision will be made for future use by both bats, birds, insects & hedgehogs as an overall enhancement for biodiversity to the site.

Ideally any flat roofs included in the design of the converted barn will include green roofs such as the hay base system by the organic roof company to provide further wide-reaching enhancements for wildlife.

APPENDIX ONE LEGAL STATUS OF BATS & BIRDS

LEGAL PROTECTION OF BATS

The Wildlife and Countryside Act 1981 (WCA) transposes into UK law the Convention on the Conservation of European Wildlife and Natural Habitats (commonly referred to as the 'Bern Convention'. The 1981 Act has been amended several times, most recently by the Countryside and Rights of Way [Crow] Act 2000, which added 'or recklessly' to S 9 (4)(a) and (b).

All species of bats are listed on Schedule 5 of the 1981 Act, and are therefore subject to the provisions of section 9, which make it an offence to:

- Intentionally kill, injure or take a bat
- Possess or control any live or dead specimen or anything derived from a bat Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat
- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for that purpose

The Conservation of Habitats and Species Regulations 2017 which consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law and came into force on 30th November 2017.

All bats listed on Annex IV of the Directive and some are also listed on the Annex II. The latter Annex relates to the designation of Special Areas of Conservation (SACs) and covers **Greater** and **Lesser Horseshoe bats**, **barbastelle** and **Bechstein's** bat.

Inclusion on Annex IV ('European protected species) means that member states are required to put in place a system of strict protection as outlined in Article 12; this is done through inclusion on Schedule 2 of the Regulations. Regulation 53 makes it an offence to;

- Deliberately capture or kill a bat Deliberately disturb a bat
- Damage or destroy a breeding site or resting place of a bat
- Keep, transport, sell or exchange, or offer for sale or exchange alive or dead bat or any part of a bat

LEGAL PROTECTION OF BIRDS

The Wildlife and Countryside Act 1981 is the main instrument for the protection of wild birds in the law of England, Wales and Scotland.

It protects all wild birds of whatever species (certain exceptions apply within the act). Barn Owls are listed on Schedule 1 which gives them special protection.

The act makes it an offence "if any person intentionally- Kills, injures or takes (handle)any wild bird;

Takes, damages, or destroys the nest of any bird while that nest is in use or being built; (barn owls do not 'build' a nest but may make a nest scrape) or

Takes or destroys an egg of any wild bird"

It is also an offence "if any persons have in his possession or control-

any live or dead wild bird or any part of, or anything derived from, such a bird; or An egg of a wild bird or any part of such an egg" (s 1 (2)).

LEGAL PROTECTION OF AMPHIBIANS AND REPTILES

Reptiles are protected from killing and injury (two species are fully protected, this includes, but is not confined to:

- Disturbance and deliberate destruction of their habitat) under **The Wildlife and Countryside Act 1981** (as amended).

The Conservation (Natural habitats &c.) regulations 1994 (the habitats Regulations were recently updated by **The Conservation of Habitats and Species regulations 2017**

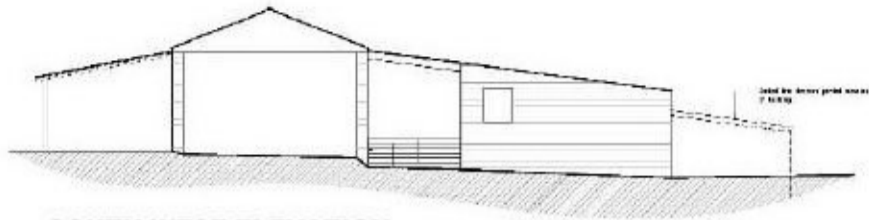
Amphibians such as Great crested newts are fully protected, including protection against:

- Deliberate disturbance
- Deliberately killing or capturing
- Deliberately taking or destroying eggs
- Deliberately damaging or destroying breeding sites and places of shelter.

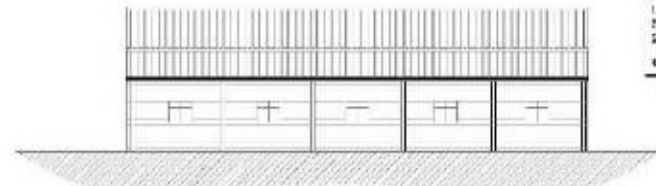
Licensing from Natural England

A Licence simply permits an action that is otherwise unlawful. A licence should be applied for if, on the basis of survey information and specialist knowledge, it is considered that the proposed activity is reasonably likely to result in an offence (killing, breeding site destruction, etc – see above). No licence is required if, on balance, the proposed activity is unlikely to result in an offence (this is from the great crested newt mitigation guidelines).

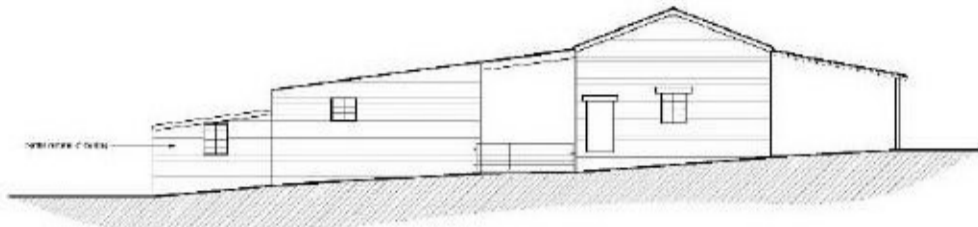
APPENDIX TWO EXISTING ELEVATIONS PLAN



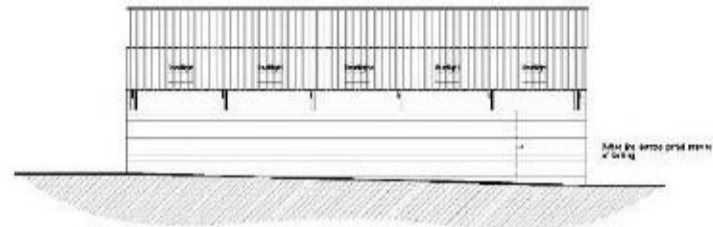
SOUTH WEST ELEVATION
Scale 1:100



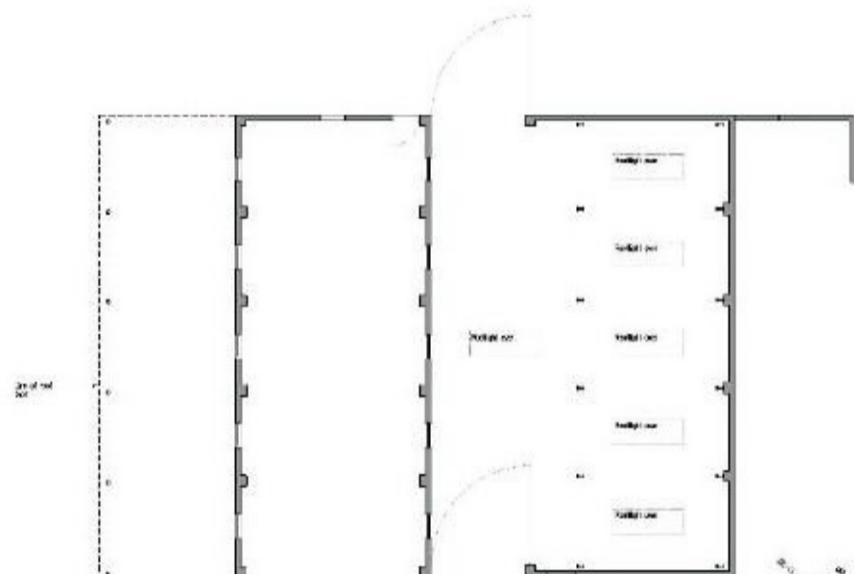
NORTH WEST ELEVATION
Scale 1:100



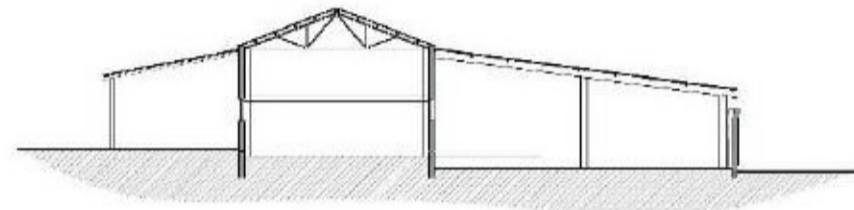
NORTH EAST ELEVATION
Scale 1:100



SOUTH EAST ELEVATION
Scale 1:100



FLOOR PLAN
Scale 1:100



TYPICAL SECTION
Scale 1:100

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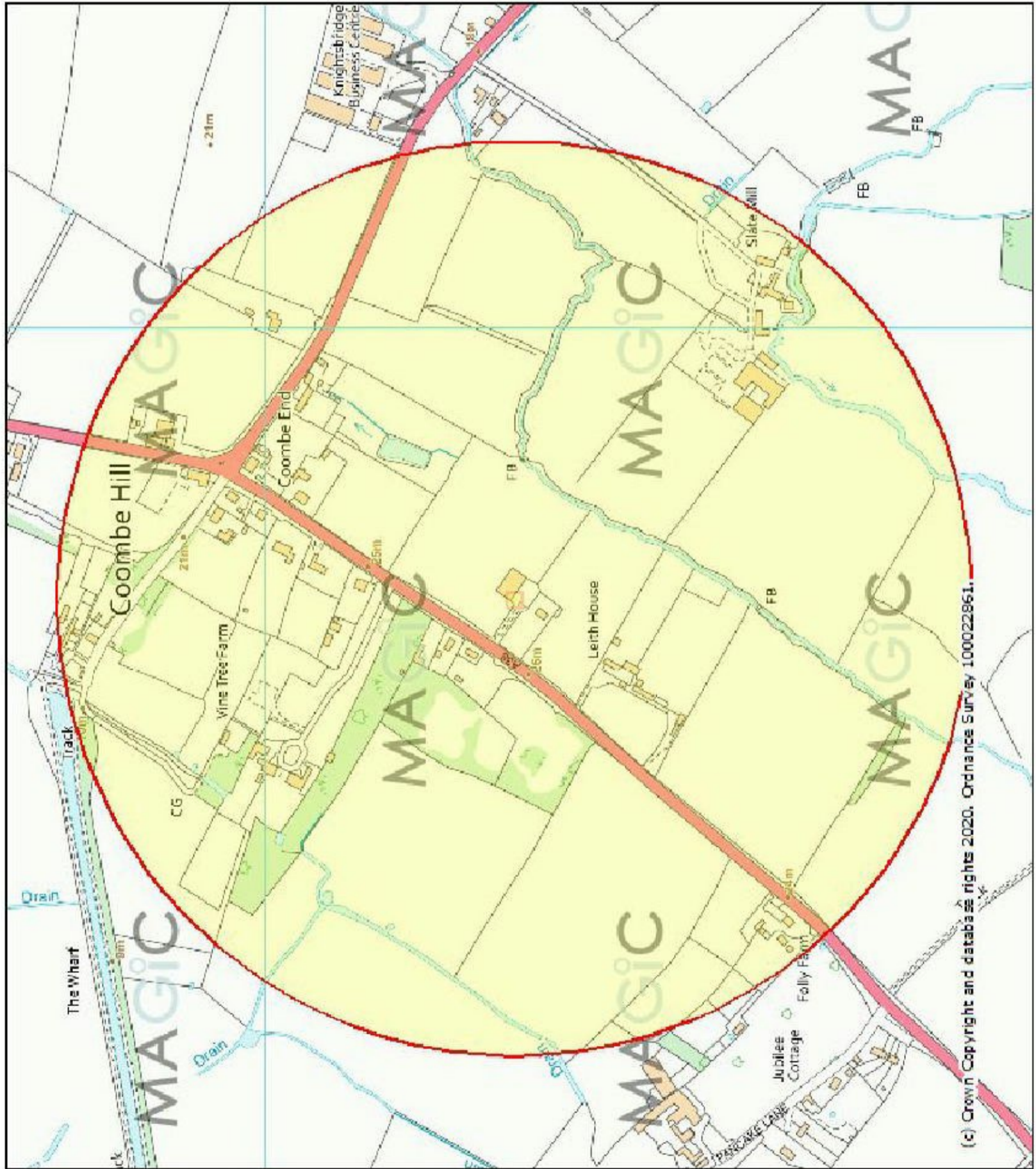
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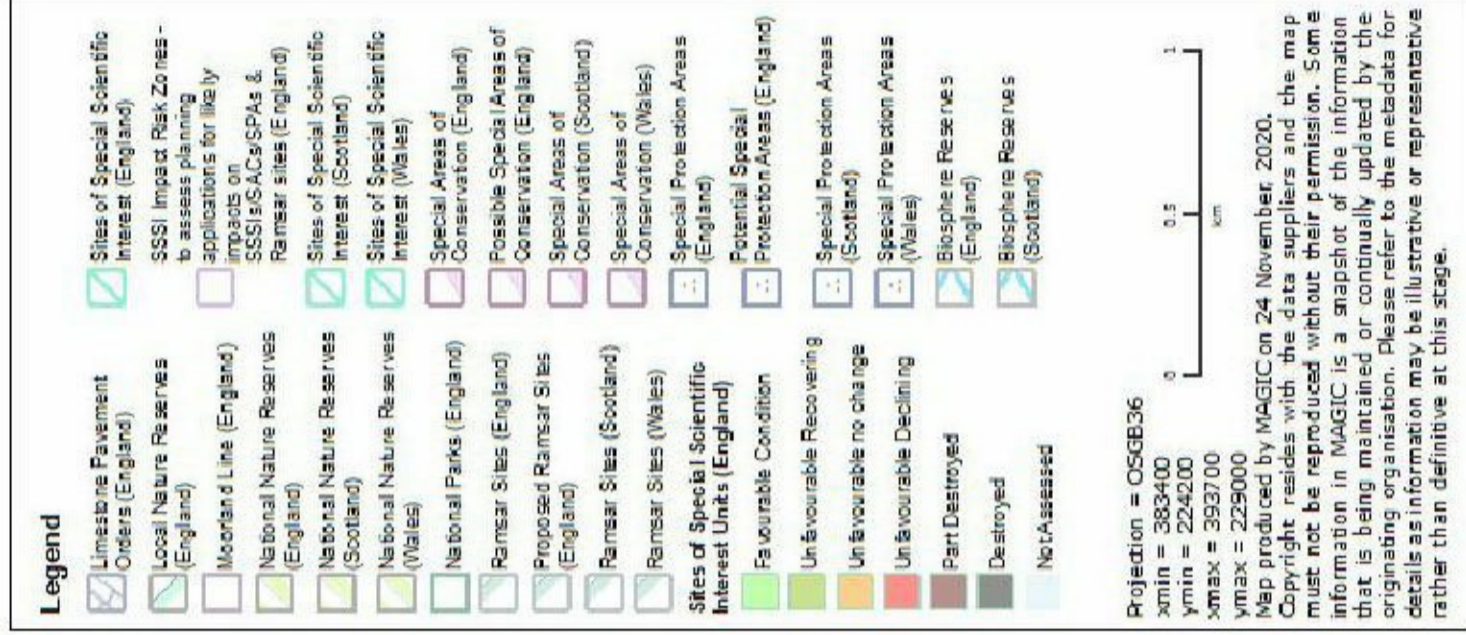
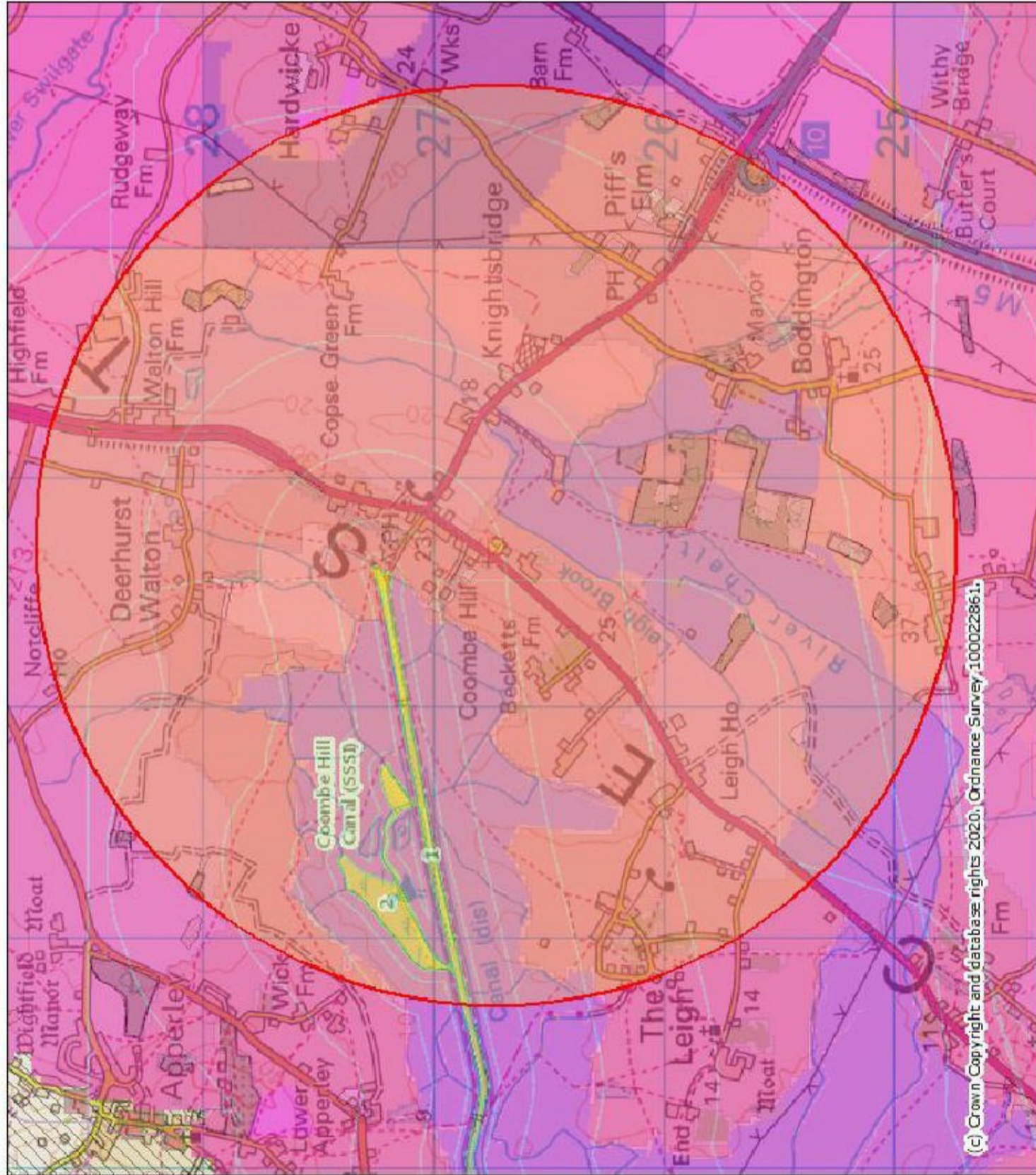
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APPENDIX THREE POND SEARCH MAP



Projection = OSGB36
xmin = 387400
ymin = 226100
xmax = 390000
ymax = 227300
Map produced by MAGiC on 24 November 2020.
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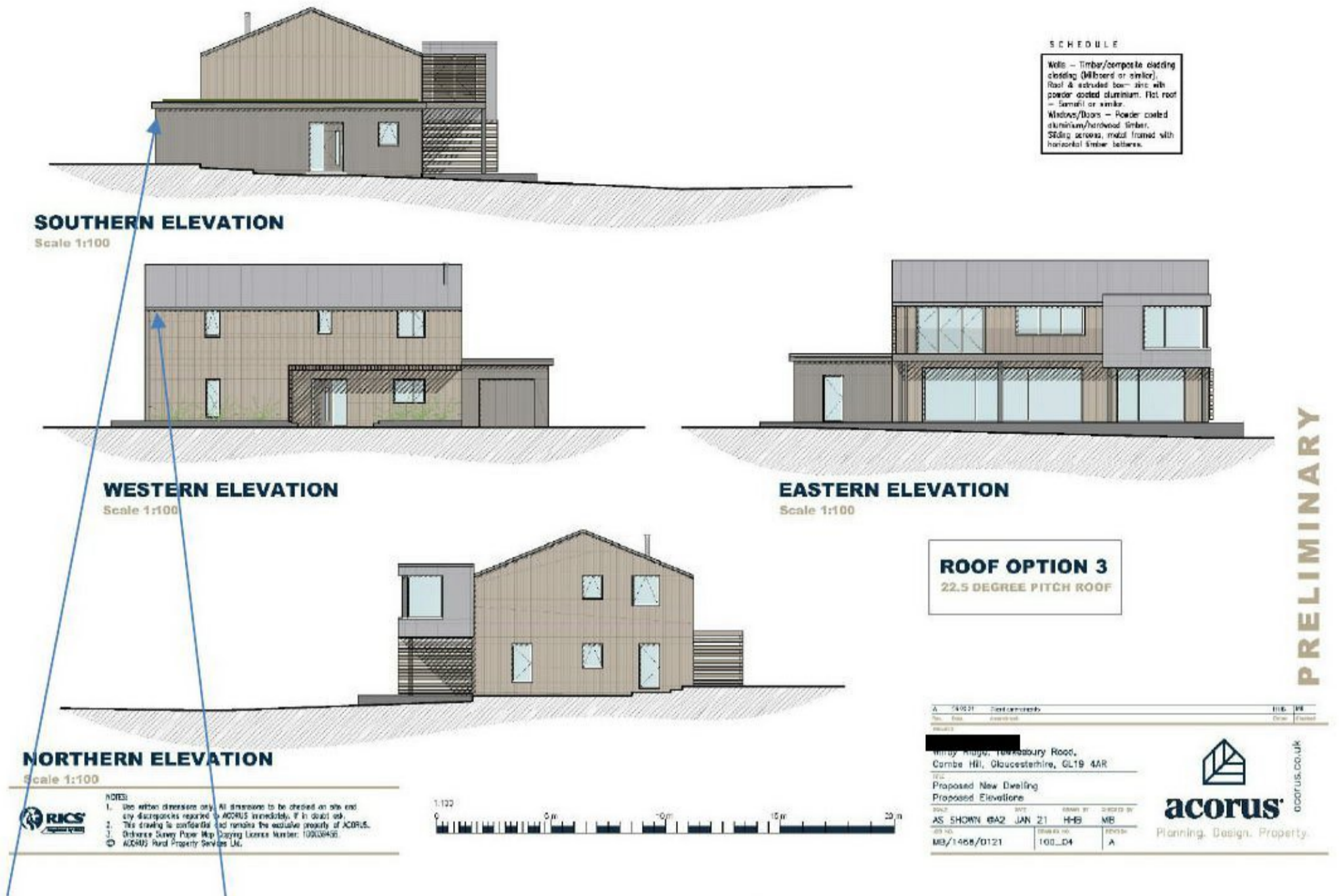
APPENDIX FOUR DESIGNATED SITE SEARCH MAP



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APPENDIX FIVE PROPOSED ENHANCEMENTS

Hedgehog house  & insect house  shown over the page from the plans



SCHEDULE


Walls – Timber/composite cladding (Millboard or similar),
Roof & extruded beam – zinc with powder coated aluminium. Flat roof – Semtex or similar.
Windows/Doors – Powder coated aluminium/hardwood timber.
Sliding screens, metal framed with horizontal timber battens.

ROOF OPTION 3
22.5 DEGREE PITCH ROOF

PRELIMINARY

NOTES:
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Bird boxes & Bat boxes shown below & green roofs = 

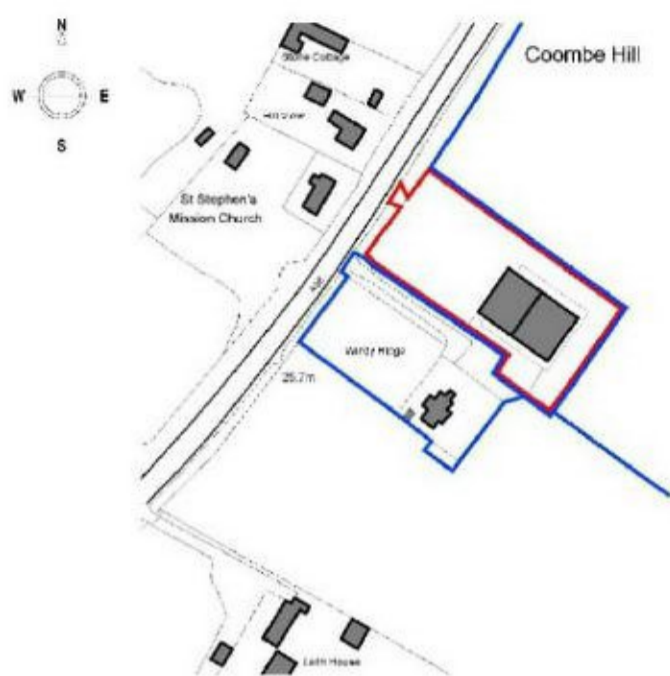
WoodStone Build-in Open Nest Box

WoodStone Build-in Open Nest Box is designed for use in new build or renovations. The nest box is intended to be built into walls to provide nesting cavities. This provides much needed nesting cavities for species such as Robins, Wagtails and Black Redstarts. Constructed from FSC certified WoodStone this nest box will not deteriorate like a traditional wooden nest box. NHBS Price: £17.95 including VAT.



integral soffit bat box





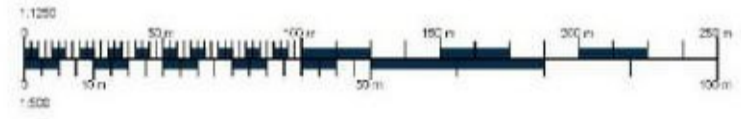
LOCATION PLAN
Scale 1:1250

— Ownership Boundary
— Site Boundary



BLOCK PLAN
Scale 1:500

--- Building to be demolished
— Site Boundary



A 2021 01/01/2021		MB
Windy Ridge, Tewkesbury Road, Combe Hill, Gloucestershire, GL19 4AR		MB
Proposed New Dwelling Location & Block Plan		
AS SHOWN 042	JAN 21	HMB MB
MB/1468/D121	100_01	A

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HEDGEHOG HOUSE to be within the new native fruit trees



Insect House to be on the wall of the converted barn



Green roofs from organic.roofs.co.uk suitable for flat or pitched roofs